

**An Investigation of Higher Education Institution's Knowledge Transfer Strategies -
A Comparative Study of Three Institutions in Hong Kong**

by

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A Thesis Submitted to
The Education University of Hong Kong
in Partial Fulfillment of the Requirement for
the Degree of Doctor of Education

August 2017



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Dedicated to my beloved wife Clifford



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Statement of Originality

I, CHUNG, Yan Yi Eddy, hereby declare that I am the sole author of the thesis and the material presented in this thesis is my original work except those indicated in the acknowledgement. I further declare that I have followed the University's policies and regulations on Academic Honesty, Copyright and Plagiarism in writing the thesis and no material in this thesis has been submitted for a degree in this or other universities.

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Abstract

Over the last three decades, there has been considerable transformation of global higher education institutions from a traditional role of teaching towards a contemporary role of diversified teaching, with intensive research and knowledge transfer taking place locally and internationally. Institutional transformations in Hong Kong's higher education system over the last decade were no exception. Decentralised governance, increasing public accountability, social and economic responsibilities, enhancing quality and research excellence, sustaining society's development through community engagement and knowledge transfer are essential changing functions and missions driving knowledge transfer strategy differences in the process of dynamic transformation. Knowledge transfer literatures reveal that they are usually associated with the third mission of higher education institutions, particularly in the knowledge-based economy context while facing society's demanding role expectations and institutions' fundamental transformation needs. To succeed in knowledge transfer and achieve the third mission, do different knowledge transfer strategies matter at the institutional and academic-based levels for striking challenges derived from the contemporary role and the mission of institutions? Nevertheless, different conceptual understandings of knowledge transfer, say interpreting from policy, implementation, organisation, and developmental perspective, may result in different interpretations on institutions' strategy formulation, dissemination and implementation. However, these further align with their specified missions, roles, strengths, and stages of knowledge transfer development, inter alia, some identified knowledge transfer models. With the importance of achieving educational and social missions while enhancing sustainability through institutional knowledge transfer initiatives globally, there seems to be a lack of relevant studies in knowledge transfer strategies related to Hong Kong. Henceforth, this research attempts to investigate the extant of knowledge transfer strategies adopted and implemented by three publicly-funded small to

medium size higher education institutions in Hong Kong so as to derive an initial understanding about their differences, similarities and characteristics, and explore whether there are differences between strategies formulation, dissemination and implementation amongst various knowledge transfer agencies. These may lead to rethinking and rearticulating various issues and provide informed bases for local institutions' knowledge transfer implementation and the government's funding initiatives.

This research has adopted a comparative education approach with adoption of the Bray and Thomas' Cube, and Adamson and Morris' theoretical guiding frameworks facilitating for units, focus and interpretative comparison and analysis. Multiple-case study with a qualitative method of inquiry into the knowledge transfer strategies through documentary search and semi-structured interviews were set out at the case study protocol and used for data collection. The collected data were processed through computer-assisted qualitative data analysis software for facilitating a swapping inductive to deductive method of coding, comparing and analysing. Findings consistency were ascertained through the convergence of data collected from different sources while the analytical strategy of descriptive and heuristic framework of analysis, thematic qualitative text analysis process, technique of cross-case synthesis, and comparative analyses were adopted and aligned with a developmental process perspective. Subsequently, sixty-one knowledge transfer strategies were categorised with distinguishing differences and overlapping similarities while ways of disseminating and implementing strategies adopted by the cases had significant similarities. Simultaneously, different characteristics and shaped factors of three driven models of knowledge transfer strategisation were identified. The observed results were possibly aligned with different stages of knowledge transfer and strategy development. Therefore, they helped to further develop a developmental process-based model integrating with multiple-interpretation perspectives facilitating for a practical and comprehensive analysis and derivation of KT

strategies in realising different objectives, roles and strengths of individual institutions.


Indeed, the comprehensive and systematic methodology process may derive methodological significance while the developmental perspective with identified stages may have underpinning effects on strategy development and funding policy implications.

Keywords: knowledge transfer strategy, higher education institution, comparative education, multiple-case study, developmental perspective



Acknowledgements

Beginning with my prologue before the acknowledgements, this snap shot image¹



was an aggregate of knowledge, beliefs, past and present experiences happened simultaneously, which denotes a lot of messages embedded within the context derived from the exemplar moment of interactions. This thesis may be regarded as a snap shot study of knowledge transfer strategies while interactions amongst the research stakeholders were relatively dynamic and symbolic with progressive perspectives and development. Under these circumstances, advance strategies, unconditional support, faithful and concerted efforts become essential for enhancing richness and significant contributions of my thesis.

To pursue the goals of doctoral research and study, people always express that it is a lonely, lengthy and lofty journey. It happened to me, yet it has given me invaluable experiences and irreplaceable memories. This exemplar prolonging moment of interactions

designate a robust message that it is challenging to pursue the goals, particularly without the continuous support, interactive communication and knowledgeable guidance.

In my study trajectory, I have sometimes gone up and down but have still felt someone has always been standing by me. Taking this opportunity, I would like to express my sincere gratitude to the individuals and institutions for their invaluable support, advices and contributions during the course of this thesis-architecture and compilation.

Without the academic and knowledgeable guidance as well as psychological and inspiring support from my supervisors: Professor Bob Adamson and Dr. Jae Park, I may still have a prolonged journey! Words cannot express my sincere gratitude for their patient, constructive and immense guidance throughout my study trajectory facilitating me to progressively proceed to the final stage of my Doctor of Education (EdD) journey. I have

¹ *Figure 1.* The “Exemplar moment of interactions” - Photographic image by Eddy Chung - author of this thesis (Chung & Tang, 2014).

always felt that I am not alone, especially with my supervisors and groupmates² from the study discussion group of IELL (International Education and Lifelong Learning).

My appreciation and special thanks are extended to the Hong Kong Baptist University, Lingnan University and Education University of Hong Kong (EdUHK) for their generous support in facilitating data collection through their participation and contribution in the research. Special thanks goes to Dr. David Sorrell for his professional and responsive proofreading services, Dr. Carrie Ho for her inspiration and Ms. Janis Chung for her tremendous assistance in the process of the interviewee transcriptions.

I also wish to express my gratitude to the professors and teaching staff of the Graduate School and EdUHK for their academic and professional support throughout my whole course of studying in the EdD programme. I am thankful to the Graduate School for their professional, administrative and logistic support as well as their provision of additional learning and experiential opportunities.

I am thankful to The Education University of Hong Kong for the EdD International Outreach Study Programme (IOSP) Award 2015, the Conference Award 2015/16 for students of the EdD Programme, and the Postgraduate Students Publication Award 2015/16; the Comparative and International Education Society (CIES) for the CIES Merit Travel Grant Award for the nominated participants of the New Scholars Dissertation Mentoring Workshop at CIES 2016.

Without the understanding and blessings from my family, friends, ex-colleagues of the Education Bureau and EdD groupmates, my study would have become “mission impossible”.

² IELL Discussion Group: Bae, Bella, Cherie, Kelvin, KW, Lina, Nancy, Shahid, Suzanna and Wing;

EdD Self-study Support Group & individuals: Agnas, Erica and Gloria; and Sasha.

Last but not least, I must dedicate my thesis and honour to my wife, Clifford, who has given unfailing and unconditional care and support to me for pursuing my childhood dream. I will be undoubtedly indebted to her throughout my life!



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Note: No Appendices created in Chapters 1, 3 and 9.



List of Abbreviations

A1	Interviewee of the Administration side from HKBU
A2	Interviewee of the Administration side from EdUHK
A3	Interviewee of the Administration side from LU
A4	Interviewee of the Administration side from LU
BEST	Business Entrepreneurship Support and Training
CAQDAS	Computer-Assisted Qualitative Data Analysis Software.
CF	Code Frequency
CRD	Committee on Research and Development
EDB	Education Bureau
EdUHK	The Education University of Hong Kong
GS	Graduate School
HEI(s)	Higher Education Institution(s)
HKBU	Hong Kong Baptist University
IP	Intellectual Property
KPF	Knowledge Transfer Project Fund
KT	Knowledge Transfer
KTAS	Knowledge Transfer Award Scheme
KTC	Knowledge Transfer Committee
KTEA	Knowledge Transfer in Entrepreneurial Aspects
KTMGS	Knowledge Transfer Matching Grant Scheme
KTNTA	Knowledge Transfer in Non- Technology Area
KTO	Knowledge Transfer Office
KTP	Knowledge Transfer Partnership

KTS	Knowledge Transfer Strategy
KTТА	Knowledge Transfer in Technology Area
LTC	Linear-to-Cyclic
LU	Lingnan University
M1	Interviewee of the Management Side from HKBU
M2	Interviewee of the Management Side from EdUHK
M3	Interviewee of the Management Side from LU
MPCF	Matching Proof-of-Concept Fund
MTC	Main Thematic Category
N-KTSTSC	New Codebook - KTS Related Thematic Sub-Categories
N-KTSTSC±	Consolidated and Collapsed Sub-category of KTS
OECD	Organisation for Economic Co-operation and Development
P-KTSTSC	Preliminary Codebook - KTS Related Thematic Sub-Categories
QS	Quacquarelli Symonds
R&D	Research and Development
RGC	Research Grants Committee
TQTAP	Thematic Qualitative Text Analysis Process
TSSSU	Technology Start-up Support Scheme for Universities
TT	Technology Transfer
UGC	University Grants Committee
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VP	Vice-President

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Note: No tables created in Chapters 1 and 9

Glossary

Knowledge transfer	<p>“Within the knowledge-based economy, knowledge transfer involves multiple stakeholders, such as universities, private, public and third sector, for the processes of knowledge creation and application, knowledge mobilization and exchange, information search and transformation as well as knowledge learning within and outside organization(s) whereas there would have role for the knowledge creators and users to play as distributors and receivers accordingly through those strategic mechanisms, such as Knowledge Transfer Partnerships (KTP), for facilitating the transfer of tacit and implicit knowledge such as good ideas, research results, experiences and skills whilst enhancing the transfer of tangible and explicit knowledge such as increasing productivity, manufacturing of high value-added products, unleashing creativity, and transferring knowledge and technology. Purposes of knowledge transfer emphasize using research evidences to support policy-making, good practice building and develop innovative new products and services in order that economic competitiveness, effectiveness of public services and policies, and quality of life could be improved and sustained”. (Awang, 2008; BIS, 2009; BOI, 2014; British Council & Thailand Research Fund, 2014; Chung, 2014, p. 77; DEL 2014; Howlett 2010; NESDP, 2011; OST 2006; Ozga 2004a; Worasinchai & Bechina, 2010).</p>
Strategy	<p>Briefly, “a strategy is a general plan or set of plans intended to achieve something, especially over a long period” (Collins Cobuild, 2012, p.1545). In specific with adapted definition, “strategy is the direction and scope of an institution over the long-term, which achieves advantage for the institution through its configuration of resources within a challenging environment, to meet the needs of society/community and to fulfil stakeholder expectations” (Johnson & Scholes, 2006).</p>
Strategy dissemination	<p>Strategy dissemination applied here generally implies “distribution of information or knowledge” (Collins Cobuild, 2012, p. 446) of a derived/formulated strategy to KT stakeholders, such as academia, students and community organisations, through different channels or methods. Specifically, under the descriptive framework of the research, data immersed in the 6W-elements of ‘dissemination of KT strategy’ referring to ‘in what ways’ (e.g., KT staff/ambassadors, website, annual reports) the strategies (e.g., professional customer-oriented strategy and entrepreneurial strategy) in HEIs were disseminated.</p>
Strategy formulation	<p>Strategy formulation applied here involves “the process of creating or inventing” a strategy, strategic policy or set of plans (Collins Cobuild, 2012, p. 625) in general. Specifically, under the descriptive framework of the research, data immersed in the 6W-elements of ‘formulation of KT strategy’ refers to ‘what to be transferred’ (e.g., KT areas of technology, non-technology, proposition, and procedure) in HEIs both at</p>

the policy/institutional and implementation level.

Strategy implementation Strategy implementation applied here generally implies a strategy or set of plans was implemented to “ensure what has been planned is done” (Collins Cobuild, 2012, p. 792). In specific, under the descriptive framework of the research, relevant data was immersed in the 6W-elements of ‘implementation of KT strategy’ referring as ‘to/with whom and by whom’ (i.e., the key stakeholders) the strategies in HEIs were implemented.

Chapter 1

Introduction

1.1 Preamble

Without setting out plans and strategies in advance, it is hard to meet one's goals. Similar principles apply to my thesis studying "An Investigation of Higher Education Institution's Knowledge Transfer Strategies – A Comparative Study of Three Institutions in Hong Kong", in particular, to the research questions such as "What kinds of knowledge transfer strategies have been planned and adopted by three selected higher education institutions (HEIs) in Hong Kong?" Based on my personal experience, strategies are essential for image studying. With around seven years of working within the higher education sector, my perspective on one of the contemporary education issues in higher education sector is the used terminology "third mission" of higher education institutions (Lockett, Kerr, & Robinson, 2008; Organisation for Economic Co-operation and Development [OECD], 2011; University Grants Committee [UGC], 2006), which is commonly adopted by Hong Kong HEIs. Regarding knowledge transfer (KT) as the "third mission" of the institutions, it came into my mind how this "third mission" could be achieved by the institutions at two levels – the policy/institutional and project/academic-based level? Did knowledge transfer strategies matter? What kinds of knowledge transfer strategies were planned and adopted to achieve the mission? How those strategies have been implemented? Would there be any different, similar and distinctive KT strategies adopted in the institutions?

These sort of questions inspired me to explore the education phenomenon of KT strategy formulated, disseminated and implemented in the institutions specifically and the higher education sector at large. In particular, with the inception of the new initiative of KT funding by the University Grants Committee (UGC) of Hong Kong commencing from the financial year of

2009-10. After more than six years of funded KT initiatives and implementation by the eight publicly funded institutions in Hong Kong³, there seems to be the necessity and significance of investigating the extant KT strategies within the context of the higher education sector from the policy, implementation and development perspectives. Without the fundamental stage of formulation, dissemination and implementation of different kinds of KT strategies, the “third mission” would not be actualised in a relative effective consequence and university-wide participation. We all need to have systematic and strategic sets of plans in order to pursue our ultimate goal; no matter whether they are related to personal, institutional or societal aspects and levels. Hence, multiple-case study, an in-depth understanding and learning of a phenomenon from the case and comparative perspectives, was adopted as the qualitative research methodology, supplemented with analysis methods derived from the Heuristic Framework, Adamson and Morris’ Framework, and Thematic Qualitative Text Analysis.

This preamble briefly introduces my initial thoughts on KT and strategies as contemporary education issues in the higher education sector associated with my perspective on the “third mission” phenomenon and the essential role of strategies. It then provides the research background, aims, research questions, significance, and structure of my study. It further briefly highlights the theoretical and methodological guiding frameworks as an overview while the key terms used in the research are defined accordingly within the “Glossary” of the thesis.

³ The eight publicly-funded HEIs in Hong Kong, namely the City University of Hong Kong (CityU), Hong Kong Baptist University (HKBU), Lingnan University (LU), the Chinese University of Hong Kong (CUHK), the Education University of Hong Kong (EdUHK, former as the Hong Kong Institute of Education (HKIED)), the Hong Kong Polytechnic University (PolyU), the Hong Kong University of Science and Technology (HKUST), and the University of Hong Kong (HKU), are under the government fund subvention, in which the funding is administrated by the University Grants Committee.

1.2 Background of the Research

1.2.1 Knowledge transfer - contemporary perspectives. What is the meaning of knowledge and transfer? Literally, “knowledge is information and understanding about a subject which a person has, or which all people have” (Collins Cobuild, 2012, p. 869) that “you get by experience or study” (Cambridge University Press, 2016) while the subject is exhaustive to infinity indeed. A subject of the knowledge could be, for example, technology, arts and humanities, sociology, philosophy, and management in broad or information communication technology, graphic design, modern Chinese literature, debating, life and supervising skills specifically. Compatibility, “if something is transferred, or transfers, from one person or group of people to another, the second person or group gets it instead of the first” (Collins Cobuild, 2012, p. 1,665). “Something” could be interpreted as “knowledge” of an individual or a group of people who transfers the knowledge to other(s) whereby knowledge transfer (KT), with simplicity, is compatible (coexistence) with the commonly used terminology of technology transfer (TT), of which the process or act of transfer is key to KT or TT (Collins Cobuild, 2012, p. 1,665). In the Macmillan Dictionary, it defines KT as “the process of communicating knowledge that has been developed in one part of an organization to other parts of the organization or to customers” (Macmillan Publishers, 2016), which echoes the key term of process. These are strictly the literal meaning and translation of KT in simplicity.

However, the concept and definition of KT, particularly under contemporary perspectives, were relatively diverse and complicated with different interpretations and assigned under different contexts, say the organisation management, the teaching and learning, and the globalised knowledge-based economy context. In the literature, the terminologies used to describe the concept of knowledge transfer (KT) are indeed various, such as knowledge

“transfer, management, exchange, translation, utilization, and diffusion”, that its associated concepts would possibly be different, particularly embedded in a variety of contexts and purposes as well as interpreted through different theories and models (Graham, 2008, p. 2). KT, for instance, could be conceptualised as knowledge sharing whereby knowledge, both tacit and explicit, has essential intangible resources requiring management by the organisation through information technology and sharing culture environments (Kumaraswamy & Chitale, 2012). Besides, KT could also be conceptualised as a linking process between university-industry whereby it is linked by some typical KT activities, such as research and services, and mechanisms, such as business incubators and personal contacts (Schiller & Brimble, 2009). Actually, a preliminary result of over 1.3 million published books and academic journals in relation to KT, from 1980 to 2016 in different contexts, were searched through the iSearch engine of the library of The Education University of Hong Kong (EdUHK) while around 740,000 (or 57%) were associated with HEIs. These scenarios have implications on the commonality and importance of studying KT in different contexts, in particular, likely associating with and emphasising the role of HEIs.

Furthermore, KT is traditionally and basically “embedded in a learning environment or context between/amongst individuals and/or organizations in which knowledge is disseminated and acquired through teaching/coaching and learning/practicing”, particularly in associating with the teaching, learning and research role of HEIs (Chung, 2014, p. 74; Howells, Ramlogan, & Cheng, 2012). Commencing with the onset of New Public Management reform amongst HEIs across Europe since the late 1980s, concepts like privatisation, accountability, private sector’s rationale and market-orientation etc. were prevailed (Serrano-Velarde & Krücken, 2012). Subsequently, with the beginning of the prevailing knowledge-based economy, HEIs have further

come across drastic changes, as early as the 1990s, for engaging in socio-economic “entrepreneurship” so as to facilitate and lead changes through contemporary knowledge transfer and exchange (KTE) mechanism/activities (Nelles & Vorley, 2010). Nelles and Vorley (2010, p. 347) regard KT as the third mission for contemporary universities of which it is mutually inclusive with the missions of teaching and research while reinforcing them through an increasing scope of KT activities, essentially realised and enhanced through the established “structures, systems, strategies, leadership and culture” of the university.

Under the development trajectory of perspectives on KT, it seems to evolve from a simple, basic and traditional learning environment/relationship, for example, KT between teachers and students in schools or mentors and mentees in organisations into a relatively complicated, advance and contemporary incubating environment/relationship. Such complicated relationships include KT amongst academia, students and community stakeholders through KT partnership initiatives or KT between university-industry through collaborative research or innovation. These contemporary perspectives on KT are possibly and specifically associated with “the emergence of diffusing concepts of social responsibility and entrepreneurship in the contemporary society”, especially emphasising the role of HEIs under “challenges from the knowledge-based economy” and issues of sustainability (British Council, 2014; Chung, 2014, p. 73; Department for Employment and Learning, 2014; University College London, 2011). These were possibly continued as the underpinning impetus for shaping the concept of KT aligned with the “third mission” to meet the challenges of a complex and interconnected globalised world, despite the interpretations on the “third mission” amongst HEIs and related stakeholders may be dissimilar.

1.2.2 A new role and vision for actions. Notwithstanding that KT is not a franchise policy, mission and/or activity of any HEIs, it involves different stakeholders, such as individuals, management consultants, business firms/elites, industries, public research organisations, community stakeholders, and HEIs, at different micro contexts of the contemporary era in a broader concept (Elmuti, et. al., 2005; Howells, et. al., 2012; Lockett, et. al., 2008; Johnston et. al., 2010; Kumaraswamy & Chitale, 2012; Nelles & Vorley, 2010; Powell, 2012; Reid, 2015; Schiller & Brimble, 2009; Serrano-Velarde & Krücken, 2012; Thomas, 2012; Trees, 2016). Public expectations over HEIs, in particular of those publicly-funded, are ever changing and demanding on their social roles and responsibilities towards the present and future needs of society in meeting present and future challenges within a complex and interconnected globalised world (Section for Education for Sustainable Development, UNESCO, 2002; UNESCO, Paris, 1998).

As emphasised in the Declaration of the World Conference on Higher Education that “society is increasingly knowledge-based (...), higher education and research now act as essential components of cultural, socio-economic and environmentally sustainable development of individuals, communities and nations” (UNESCO, Paris, 1998, p. 2). To fulfil these changing functions and missions, HEIs are subject to fundamental changes “for ensuring their intellectual independence, for creating and advancing knowledge, and for educating and training responsible, enlightened citizens and qualified specialists” in order to sustain and develop the economic, social, cultural or political aspect of any nation on one hand (UNESCO, Paris, 1998, p. 2). On the other hand, the Conference addressed that “higher education should be considered as a public service for a balance achievement of educational and social missions” and the “sharing of knowledge and know-how” locally and internationally through collaboration and partnership are

essential (UNESCO, Paris, 1998, p. 27).

Furthermore, apart from the underscoring of education in meeting future challenges within a complex and interconnected globalised world, the 2002 World Summit on Sustainable Development (WSSD) also emphasises that HEIs play a crucial role as important centres of research, teaching and learning. Alternatively, they are sources of fundamental, innovative and practice-oriented knowledge from which they are the key factors for sustainable development, in particular, of generation, dissemination and the exchange of knowledge through various mechanisms within the global context (Section for Education for Sustainable Development, UNESCO, 2002).

KT is always regarded as the “third mission” of HEIs (Lockett et. al., 2008; Nelles & Vorley, 2010; OEDC, 2011; UGC, 2006) actualising through their commitments in research-based knowledge creation and dissemination for problem solving and national development (Macgregor, 2014). Besides, the KT policy and practices of community engagement and services associated with the “third mission” of HEIs (Macgregor, 2014; Ozga, 2004; Schofield, 2011) were in place and developing for fulfilling their new vision/mission and changing roles while adapting their changing functions in the contemporary society.

To succeed in KT and achieve the third mission, KT policy and practices of research-based knowledge creation and dissemination as well as community engagement and services are merely part and partial of the strategies adopted by HEIs in general. To a certain extent, different KT strategies formulated and adopted for different situations have mattered at the policy/institutional and project (implementation)/academic-based levels for striking the challenges derived from the contemporary role and mission of HEIs, apart from their core roles of teaching, learning-facilitating and research.

1.2.3 A potential area of research – KT strategies. Numerous studies in relation to KT and/or associated with HEIs have been conducted over the past 36 years under different contexts (e.g., studies on HE's KT management, HEIs' leadership style, succession and KT, KT support through public policies and performance indicators of university-industry KT). However, my case-study research was confined to three publicly-funded HEIs in Hong Kong and focused on KT strategies under the knowledge-based economy context (e.g., the third mission). This research study, therefore, was justified by scrutinising the most relevant published studies to identify the potential area of research from the research studies with similar contexts (see Chapter 2). By scrutinising the contexts and purposes of KT contained in the selected literature, the conceptualisation of KT could be interpreted from and categorised as policy, implementation, organisation, and developmental perspective. The purposes were to categorise such information facilitating for the identification of what is KT, how it is associated with the higher education institutions, what and how KT strategies could be formulated, disseminated and/or implemented, and for the furtherance of research ideas and objectives.

Under the review, it was observed that whichever categorised perspectives were applied to conceptualise KT, there were certain specific KT strategies formulated and implemented correspondingly. These somehow echoed my initial thoughts of the reciprocal relationship between the “third mission” and KT strategies that, without the fundamental stage of formulation, dissemination and implementation of different kinds of KT strategies, the “third mission” would not be actualised in relative effective consequence and university-wide participation. KT strategies are indeed a potential and essential area of research, particularly when the study emphasises the overall investigation of KT strategies formulated and implemented by the HEI cases under the contemporary context of KT - the “third mission”

within the knowledge-based economy.

Actually, the governments of Europe's developed countries, like the United Kingdom (UK), have come across management reform expectations towards HEIs along with the late 1980s' New Public Management reform (Serrano-Velarde, 2012). Role expectations, for example, towards HEIs have been changing in order to strengthen pragmatic research policies and linking relationships between research and the socio-economic sectors through the exploration of KT mechanisms as linkages in advancing economic competitiveness and social sustainability (Ozga, 2004a, 2004b; Schofield, 2011; UNESCO, 2002). The establishment of the Council for Industry and Higher Education (CIHE) in 1986 and the National Centre for Universities and Business (NCUB) serves as a unique platform for high level partnerships and collaborations between business and HEI leaders for finding "practical ways of harnessing the talent being developed in the universities and the UK's strength in groundbreaking research and development for the benefit of the nation's economy" (The National Centre for Universities and Business, n.d.). This was a typical example of national policy development and implementation for the strategic development and transformation of higher education in UK. Similarly, the partial funding support of the Leadership Foundation for Higher Education (LFHE) by the four UK funding bodies, such as the Higher Education Funding Council for England (HEFCE), for the purposes of reinforcing existing and future higher education leaders with enhanced management and leadership skills (LFHE, n.d.) was also a strategic development of HEIs at the national level. These indeed were akin to emphasise KT strategies, such as partnership and institutionalised leadership, but at the national level, facilitating for the development of HEIs for benefiting socio-economic advancement of the society at large.

1.2.4 Knowledge transfer and strategies in Hong Kong. Similarly to the higher education sectors of many other advanced economies, the University Grants Committee (UGC) of Hong Kong, embraces KT as the “third mission (apart from teaching and research)” of the higher education institutions. Its aim is to enhance the impacts and development of the community, industries, and socio-economic aspects of the society through KT endeavours and the enriching research capacities and policies (University Grants Committee [UGC], 2016). The UGC believes “KT is a two-way process” with dual benefits between the institutions and the community that could be realised during the process of KT while the research policies and international competitiveness of the local HEIs and the whole sector could be enriched (UGC, 2016). Recognising the essential implications and possible benefits, the UGC has incorporated the KT notion into its mission statement and role statements of the institutions (UGC, 2016). It defines KT with a wider spectrum than technology transfer (TT) by emphasising the tacit aspect in KT as “the systems and processes by which knowledge, including technology, know-how, expertise and skills are transferred between higher education institutions and society, leading to innovative, profitable or economic or social improvements” (UGC, 2016).

Notwithstanding the public policy development of KT in Hong Kong which was more than one decade behind other advanced economies (e.g., the UK and European countries), the UGC earmarked and launched a new stream of recurrent funding of HK\$50 million per year in the 2009/10 academic year, apart from different research funding (UGC, 2010). It aims for incentivising eight publicly-funded institutions to transfer technological and non-technological knowledge from different disciplines by specifying strategies of strengthening and broadening KT initiatives, institutional capacity building as well as emphasising knowledge generation (UGC, 2010, 2016). Aligning with this new funding allocation, institutions are requested to

submit their triennial proposals according to their specified missions, roles, strengths, and stages of KT development for illustrating their medium to long-term KT strategies at the institution-wide level (UGC, 2016). It is envisaged that each institution may have derived different KT strategies aligned with one's own experience, aims and approaches. The UGC, therefore, has specifically set aside three distinctive strategic aspects, including capacity building, broadening KT endeavours, and knowledge generation, as the basic expectation towards the use of funding by the institutions (UGC, 2016).

Subsequently, the KT recurrent funding has been allocated for nearly three triennium commencing from 2009/10 to 2011/12 as the launching triennium (UGC, 2016). All institutions have submitted the required annual reports on the operationalisation of the planned strategies (e.g., creation of an enabling environment and staff incentive policy) suggested in the triennial proposals and the implementation of KT activities. These are aligned with the strategies at the policy/institutional level (e.g., capacity building through best KT practice sharing) and/or initiatives from the academic staff at the project/academic-based level (e.g., research-based community projects) (UGC, 2016). There have been more than six years of annual reports on KT recurrent funding submitted by the eight institutions, their establishment of KT offices/task forces/units and related websites, as well as relevant policy-strategic plans, and related KT projects and publications. Therefore, a bundle of substantial documents and information were readily available for an investigation and understanding of the contemporary education phenomenon of KT and the strategies in the higher education sector of Hong Kong.

1.3 “Third Mission” Revisited – Significance of the Research Study

The terminology of the “third mission” is commonly and currently adopted by the UGC – the funding body, and the publicly-funded HEIs in Hong Kong on how this “third mission” could

be achieved by the institutions both at the policy/institutional (e.g., formulation and/or dissemination level) and project/academic-based (e.g., dissemination and implementation) level. This is one of the core concerns whereby KT strategies have become the essential area and aspect of investigation in this case study research. Henceforth, a similar set of questions needed to be revisited and taken into consideration before highlighting the significance of the research study.

Basically, a series of general questions could be mindfully revisited and inquired assisting in mapping out the position and importance of KT strategies, in particular, embedding within the “third mission” context. Questions like: What is knowledge transfer? How knowledge can be transferred? Who transfer to whom? What are the purposes of knowledge transfer? What types of knowledge transfer strategies should be formulated? How the formulated knowledge transfer strategies can be disseminated and implemented? Why these strategies, and so on – a chain of related questions can be raised for answering through different research foci.

Fundamentally, different conceptual understandings of KT, such as interpreting from policy, implementation, organisation, and developmental perspectives within teaching and learning, management or socio-economic contexts may result in different interpretations on its strategies formulation, dissemination and implementation. From these, differences may occur between various agencies, e.g., senior management and academia, of KT at different strategic levels. My research study emphasises the overall investigation of KT strategies formulated and implemented by the HEI cases under the contemporary context of KT - the “third mission” within the knowledge-based economy. Knowledge transfer policies or activities, as a result, are becoming an “essential element of innovation, driving competitive advantage in increasingly knowledge-driven economies” (Lockett et al., 2008, p. 661; Nelles & Vorley, 2010) and “leading

to profitable or economic or social improvements” (UGC, 2013). There have obviously been increasing awareness, promotion, emphasis and/or formalisation of the socio-economic role of HEIs, which are more policy- and implementation-oriented, through multiple channels such as public policy, various research funding and/or academic-industry collaboration (Lockett et al., 2008; Nelles & Vorley, 2010).

In respect of addressing the importance of KT or the so-called “academic entrepreneurship” or social accountability/responsibility amongst universities or HEIs, European higher education, in particular, that of the United Kingdom, has been fully aware of and adapted to dramatic changes towards two of their roles as early as the 1990s. That is, for their academic role (i.e., sailing off from an ivory tower to a practical incubator) and entrepreneurial role (i.e., balancing between academic autonomy and social responsibility) (Serrano-Velarde & Krücken, 2012). Various research studies have been examining and suggesting the mechanism or strategy or the role of higher education institutions in knowledge transfer/sharing for economic or social contributions from different perspectives, such as “the carriers of cross-sectoral KT” (Serrano-Velarde & Krücken, 2012). In addition, “capacity building for university-industry linkages” (Schiller & Brimble, 2009), “the approach and leadership within academic practices” (Powell, 2012) and “the ways and means to enhance a collaborative knowledge sharing culture in academic institutions” (Kumaraswamy & Chitale, 2012).

With regard to the prevailing interpretations of KT amongst various research studies, the UGC also highlights the importance of KT and conceptualises it with a wider spectrum of realisable and dual benefits than just the aspect of technology transfer (UGC, 2014). A HK\$50 million fund from 2009/10 onwards has been allocated annually amongst the eight publicly-funded HEIs, aiming to enhance and broaden institutional capacity and endeavours in KT as well

as to encourage reciprocal processes between HEIs and the society (UGC, 2014). These expectations and the KT fund bidding mechanism have induced HEIs to devise KT plans, academic plans and strategies embedding with potential impacts and innovations.

Notwithstanding that, there are different conceptual understandings and interpretations of the “third mission” amongst these HEIs, aligned with their specific roles, missions, areas of strength and experience in KT development. Henceforth, dissimilar KT strategies and practices might have formulated and been adopted by different HEIs with notable differences in strategies formulation, dissemination and implementation amongst these HEIs as well as across different levels within each institution.

Apart from the differences that may occur between various agencies at different levels, KT strategies are essential strands of public and institutional policy pursuing the competitiveness, sustainability and socio-economic benefits of the HEIs and society at large. In this regard, this research is of difference from previous studies which address the down-to-earth issues of KT implementations. It attempts to investigate the extant KT strategies adopted and implemented by three publicly-funded small to medium size HEIs in Hong Kong so as to derive an initial understanding about their differences, similarities and characteristics, and to establish whether there are differences between strategies formulation, dissemination and implementation. These may lead to rethinking and rearticulating various issues associating with KT strategies, particularly during the development process of “institutionalisation” of KT (Geuna & Muscio, 2009 cited in Kitagawa & Lightowler, 2013).

There seems to be a lack of relevant studies in KT strategy in relation to Hong Kong, particularly in respect of conducting in a comparative and multiple-case study approach as well as interpreting within the socio-economic or “academic entrepreneurship” context. These

facilitate analyses of KT strategies formulated and implemented by the HEIs and should either be adopted from a policy, implementation, organisation, and/or developmental perspective. Besides, the adoption of the comparative multiple-case study with multiple-analytic techniques and systematic literature review may have alternative insights in the field of comparative education and post-graduate research. Then, the observed KT model of each study case derived from the process of identification, categorisation and interpretative analysis may contribute to whether there were different stages of KT strategy development on a developmental trajectory. Specifically, by identifying the characteristics and patterns of KT strategy development of the study cases with reference from a developmental process based model (e.g., Linear-to-Cyclic (LTC) Model Perspective of Knowledge Transfer Development Process (Chung, 2013)). Last but not the least, it was expected that the research results could provide implications for local HEIs' KT planning and implementation as well as the policy makers' funding initiatives.

1.4 Aims of the Study and the Research Questions

The aims and objectives of this study were to investigate what kinds of KT strategies have been formulated and implemented by the three HEIs and to identify any notable differences between strategy formulation, dissemination and implementation amongst them. It was envisaged that some sorts of KT models, based on the characteristics and patterns of KT strategy development among the cases, could be observed through the process of identification, categorisation and interpretative analysis by addressing the down-to-earth issues of KT formulation and implementation, especially after twenty-years or more of KT development. This study aimed to thoroughly investigate the actual situations of KT strategies adopted and implemented by three HEIs in Hong Kong in order to have an initial understanding about the differences, similarities and differences in KT strategies of the study targets as well as any

differences between strategies formulation, dissemination and implementation. The scope of study was confined by the comparative education analysis guiding frameworks, Yin's case study research approach and the illustrative case study protocol (2014), and the thematic qualitative text analysis by Kuckartz (2014), further elaborated in the sub-sections of the chapters of the theoretical and methodological guiding framework and research methodology. The research questions of the study were set out as follows:

1. What kinds of knowledge transfer strategies have been planned and adopted by three selected higher education institutions?
2. How have the institutions disseminated and implemented the KT strategies?
3. What are the differences, similarities and individual characteristics of KT strategies amongst three HEIs?
4. Are there notable differences between strategy formulation, dissemination and implementation amongst three HEIs?

1.5 Overview of the Theoretical and Methodological Guiding Frameworks

This research used a comparative education approach with Bray and Thomas' Cube (Bray, Adamson, & Mason, 2007) conceptual framework as one of the guiding frameworks for choosing the units of comparison and analyses from the three dimensional units with multiple levels of entry. Within this framework, the unit(s) of analyses by Adamson and Morris (2007) for comparing curricula were adapted and guided the comparison of KT strategies in focus through the examination of the three dimensions of study purposes and perspectives, manifestations and data collection methods. The framework was borrowed and adapted for identifying discernible dimensions or themes for achieving meaningful, systematic comparison and interpretative analysis. Under these guiding frameworks for choosing the units and identifying discernible

dimensions for comparison and analyses, multiple-case study with qualitative method of inquiry into the KT strategies was manipulated as the research methodology in this study. As such, multiple-case study with a qualitative method of inquiry into the KT strategies through archival documents, semi-structured interviews and guiding questions set out the case study protocol used for data collection. The method of “triangulation” was employed for research analysis to eliminate the limitations of potential bias, non-comprehensive and non-multiple perspectives from the common critical concern over the potential shortcomings of case study methodology. Consistency of the findings were ascertained through “the convergence of data collected from different sources” (Yin, 2014, p. 241) while the analytical strategy of “descriptive framework”, “heuristic framework”, technique of “cross-case synthesis” and comparative analyses were adopted as part of the case study research design. Details are discussed in Chapter Three of the Theoretical Guiding Frameworks and Chapter Four of the Methodological Guiding Frameworks.

1.6 Structure of the Thesis

This thesis is divided into nine chapters, supplemented with appendices and a glossary as further detailed illustrations. The thesis starts with Chapter One and a preamble of my perspective on KT and strategies leading to apply similar principles to my research study on KT strategy as one of the contemporary education issues in higher education sector. It then provides the research background, aims, research questions, significance, and structure of my study. It further briefly highlights the theoretical and methodological guiding frameworks as an overview, preparing for preliminary and foundational understandings on the issue of theoretical conceptualisation and methodological application.

Chapter Two applies a systematic approach to review relevant literatures of KT and the strategies under different contexts so as to establish a comprehensive understanding of the

concept of KT, its development in different contexts, and connection with the higher education field. It also aims to understand the associated KT strategies conceptualised from and categorised as policy, implementation, organisation, and developmental perspectives.

Chapter Three demonstrates all the theoretical frameworks used and applied in the research study facilitating and guiding for understanding KT and strategy development in comparative and interpretative analysis under the qualitative multiple-case study approach.

Chapter Four illustrates the methodology and design of the research, its objectives, scopes and research questions. Upon the comparative multiple-case study with qualitative research employed as the overall methodological framework, details of the research design and multiple-method of analyses are discussed and illustrated with templates of data collection and analyses facilitating for case study reports and finding analyses.

Chapters Five to Seven attempt to use a replication logic tactic to report the three study cases in detail through the practical guidance from the pre-established case study protocol for data collection and case study report, logistic procedures of systematic data collection and the logical process of step-by-step analysis within the descriptive and heuristic framework. These aimed to assure study quality including reliability, construct and external validity.

Chapter Eight comparatively analyses the findings of the multiple-case study research through multiple-analytic techniques. These include thematic-based analysis, cross-case synthesis, 6W-elements of the heuristic analytical approach, and Adamson and Morris' framework of comparative and interpretative analysis. In addition, the guiding frameworks for organising the collected case study data through the derivation of tables, diagrams and/or figures for purposive, focusing and meaningful comparative analyses.

Chapter Nine concludes the comparative multiple-case study by revisiting the aims and

research questions of the study as well as summarising the discussions in respect of the four RQs respectively. It further discusses possible associations between the research findings and literature relevancy and research significance in terms of KT model conceptualisation, methodological and research quality, and funding policy implications which are presented in threefold. Three diagrams of the identified models were constructed helping for the conceptualisation of the developmental KT models for theoretical and practical applications. It ends with the conclusions and recommendations/implications for future research and action, limitations of the study, as well as an epilogue of the research.



Chapter 2

Literature Review

The objectives of the literature review are to establish a comprehensive understanding of the concept of knowledge transfer (KT), its development in different contexts and connection with the higher education field, as well as extant KT strategies in the literature and how such strategies can be disseminated and implemented. This review has proceeded in a systematic and progressive way of development towards the conceptualisation of KT.

Indeed, there are different conceptual understandings of KT amongst various agencies or contexts of KT. These include organisations, universities, academia, and experts/professionals, resulting in different perspectives and interpretations on KT. KT may possibly be interpreted from a policy perspective, i.e., KT as a policy, of which KT is a mission, objective, strategy and/or project-oriented and developing at the macro-meso-micro level. Macro, hereabouts, is perceived from the policy and conceptual level guiding for the intra- and/or inter-organisation management plans for the implementation of initiatives and/or activities at the down-to-earth level. Besides, KT may also be viewed from an implementation perspective from which it could be regarded as a means to an end wherein activity and/or functional-oriented emphasis is likely to be developed at the micro level. From the organisation perspective, KT could be aligned with a sharing culture whereby management and transfer process orientation are possibly dominated at the meso-micro level. From the developmental perspective, KT as a trajectory at the micro level and may be interpreted as stage and/or strategy development-oriented in nature.

This chapter also aims at exploring and revealing a systematic approach to knowledge transfer associates with the issue of KT strategy through the process of systematic and interpretative review. This literature review chapter is the basis for informing what is KT, how it

is associated with higher education institutions, what and how KT strategies could be formulated, disseminated and/or implemented. These were accomplished by a comparative multiple-case investigation through a systematic approach of research methodology and an analytical framework, particularly focused in the context of Hong Kong higher education institutions (HEIs).

2.1 Conceptualization of Knowledge Transfer and KT Strategy

2.1.1 Academic context. The terminologies used to describe the concept of knowledge transfer (KT) are various, such as knowledge “transfer, management, exchange, translation, utilization, and diffusion”, that its associated concepts would possibly be different, particularly interpreted from a variety of contexts and purposes as well as through different theories and models (Graham, 2008, p. 2). However, there were some alternative views that a cluster of distinguished terms of academic outreach, such as Mode 1/ Mode 2, entrepreneurial university model, Triplex Helix, university-industry collaboration (UIC) and technology transfer (Clark, 2001; Etzkowitz & Leydesdorff, 1995, 2000; Gibbons, 2003; Mowery & Sampat, 2004) have merged and competed with KT in the international literature on the “third mission”. Nevertheless, my argumentative interpretation on KT is that it has emerged as a concept but it is not necessary equivalent to this cluster of competing terms. These terms belong to different models in explaining different objectives and modes of knowledge transfer under different contexts of KT development. In this regard, I have listed these few typical models in the Chapter of Theoretical Guiding Framework to guide understanding towards KT and its related strategy development from different perspectives and levels of enquiries. Henceforth, in order to review and thoroughly understand the concept of KT, its explicit or implicit related strategies, and particularly, the connection with HEIs in a systematic method, the process of a systematic

literature review from which the keywords of “knowledge transfer”, “strategies / policies”, “higher education institutions” / “universities” were setup as protocols. These determined a number of published articles by searching through four databases, namely as Social Sciences Citation Index (SSCI), ProQuest, SAGE Publications Ltd (SAGE) and Scopus. Over ten thousand published articles were searched from ProQuest at the initial stage using the searching criteria of “peer review” and “full text” articles cited within ten years from 2003 to 2013. A total of 340 published articles were found and then scrutinised for their relevance in correlating between HEIs and the communities. Subsequently, ten articles were selected as the most relevant as a fundamental basis for the conceptualisation of knowledge transfer and KT strategy facilitating for the furtherance of research ideas and objectives into a multiple-case study with breadth and depth, especially under the higher education context.

In the PICOTS framework, P stands for “population”, I for “intervention”, C for “comparator”, O for “outcome”, T for “timeframe” and S for “setting” (Carey, Yon, Beadles, & Wines, 2012). This framework was adopted and adapted as APICOTS in which an additional A for “aims”, an adapted I for “intervening variables” and C for “comparative variables” were used as replacement for relating more to those non-clinical or non-intervention research studies.

Appendix 2.1 was constructed by applying the adapted APICOTS framework and systematically retrieved relevant information from the ten selected studies. The purposes were to categorise those information facilitating for the identification of what is KT, how it is associated with the higher education institutions, what and how KT strategies could be formulated, disseminated and/or implemented, and of the furtherance of research ideas and objectives. The table in Appendix 2.2 was created with reference to the ten articles and supplementary for Appendix 2.1 as well. Additional literature relevant with the KT concepts, models or theories into practices, KT

strategies, and its connection with the HEIs' contexts other than the ten articles were reviewed for supplementing the process of a systematic literature review constituting a relatively comprehensive understanding of the subject of study.

The conceptualisation of KT could be performed from and categorised as policy, implementation, organisation, and developmental perspective. KT interprets as a policy perspective and involves the aspects of mission, objective, strategy and/or project. Lockett, Kerr, and Robinson (2008, p. 661) confine KT “as an essential element of innovation, driving competitive advantage in increasingly knowledge-driven economies”, from which KT becomes an essential policy in HEIs that needs to be implemented through different initiatives. They conceptualised KT by adopting the definition proposed by Research Councils UK from which it involves a process of “knowledge creation (by research in universities), exploitation (through KT and TT) and adoption (by commercialization in industry and policymakers in Government)” (Lockett et al., 2008, p. 664).

Similarly, Nelles and Vorley (2010, p. 347) regard KT as the third mission for contemporary universities of which it is mutually inclusive with the missions of teaching and research while reinforcing them through an increasing scope of KT activities. These are essentially realised and enhanced through the established “structures, systems, strategies, leadership and culture” of the university. Taking the study conducted by Lockett et al. (2008) as an example, KT policy has a driving competitive advantage through innovation in the contemporary era of knowledge-driven economies as one of the missions and objectives of HEIs. This could be accomplished by the formulation and implementation of applied research and commercialisation strategy through different KT initiatives. Such initiatives include Lancaster University's initiative of InfoLab21, a KT project by the establishment of “a world-class centre

of excellence for research, development and commercialization of information and communications technologies” (Lockett et al., 2008, p. 662).

KT interpreted as an implementation perspective becomes a means to an end that the emphases of activity and/or functional aspects are oriented at the micro level. Elmuti, Abebe, and Nicolosi (2005) suggest KT involves activities, such as personal communications and interactive education, of which they are a fundamental basis for creating extensive strategic alliances between HEIs and industries for the purposes of “integrating university-driven research into applied initiatives for the development of commercialization of new processes and products” (p. 3). In this case, KT serves as the means of personal communications, for example, to achieve the end of strategic alliances between HEIs and industries with a development function of commercialisation through applied research. Correspondingly, Schiller and Brimble (2009) emphasise the importance of university-industry-linkages (UILs) wherein KT between them could be actualised through “a set of critical success factors” (p. 59) like academic capacity building and the institutionalisation of UIL projects. They attempted to conceptualise KT as a linking process between university-industry whereby it is linked by some typical KT activities, such as research and services, and mechanisms, including business incubators and personal contacts. In this case, KT operates as a linking process function in capacity building and actualises through KT research and services, for instance, for linking collaboration and KT between universities and industry. Likewise, Howells, Ramlogan, and Cheng (2012) focus their study on industry-academic collaboration for innovation within the context of the knowledge economy. They recognise universities are the producers and sources of knowledge contributing to increase innovation and competitiveness of the industry through research collaboration and technology transfer activities. Similarly, the implementation of research collaboration and

technology transfer strategy and activities are the core elements of KT between industry and academic communities.

In contrast to KT policy and the implementation perspective, the organisation perspective of KT aligns with a sharing culture whereby knowledge management and the transfer process are oriented at the meso-micro level. From the organisation perspective, knowledge is regarded as an essential source of intellectual capitals, both explicit and tacit, of which the management, transfer (e.g., knowledge sharing culture) and utilisation of knowledge are crucial for the advancement and success of any organisation (Cheraghi, Salsali, & Ahmadi, 2009; Kumaraswamy & Chitale, 2012; Parent, MacDonald, & Goulet, 2014). Johnston, Robinson, and Lockett (2010) attempt to understand knowledge transfer and exchange (KTE) between HEIs and industry by exploring “key social interactions”, such as trust relationship building and network participation, of which “cultivating knowledge-based networks” (p. 541) facilitate for the transfer and exchange of knowledge in the “open innovation contexts” (p. 540). It is vital to establish a knowledge sharing culture within and between organisations through trust and network building, especially in the context of open innovation. Likewise, Kumaraswamy and Chitale (2012) conceptualise the transfer of knowledge in terms of knowledge sharing whereby knowledge, both tacit and explicit, are essential intangible resources requiring management by organisation through information technology and sharing culture environments. Besides, they link knowledge sharing with organisational learning in an interactive and collaborative way to enhance effectiveness in knowledge acquisition and application.

Similarly, whether the knowledge acquisition by organisations or universities is effective or not is subject to managed mechanisms, like interactive process and diffusion agents between universities and practitioners. For example, Thomas (2012) emphasises in his study that

initiatives or mechanisms are aimed at strengthening influences on knowledge acquisition by business elites or organisations which are essential for effective KT from universities to the tourism industry. The knowledge constructed for transfer should be formed through interactive processes between universities and practitioners while it is “accessible, applied, and relates to specific contexts or problems” (p. 554). Respectively, Serrano-Velarde and Krücken (2012) focus their study of KT and related aspects on “the carriers of cross-sectoral diffusion processes” whereby management consultants from the private sector who are the carriers for transferring knowledge with “economic rationale for organizing, deciding, and evaluating a ‘business’ organisation” to the public universities (p. 277). Conceptualising from the sociological neo-institutionalism and system theory, the process of KT “must pass through a ‘third party’ organization that acts as a diffusion agent (here as management consultants) between the public and private sectors” (Serrano-Velarde & Krücken 2012, p. 278).

However, in respect of the developmental perspective of KT, it is more about KT development as regards of stage and/or strategy development trajectory at the micro level. For illustration, KT experiences are embedded in whatever interpretation perspectives and/or contexts over different times, space, pace, purposes, beliefs, and organisational contexts may possibly have different stages (e.g., beginning, developing and maturing stage) and/or strategy (e.g., capacity building, model building and institutionalisation strategy) development in focus. In this respect, Powell (2012) sees KT as one of the university roles in innovative leadership to the small to medium sized enterprises (SMEs) through partnerships in “KT and knowledge exchange to virtuous knowledge sharing” whereby their relationships are not just simply the same as traditional and simple technology transfer (p. 414). **The KT partnerships become virtuous in nature. Universities are expected to share knowledge in more innovative ways of**

engagement through “co-identifying worthy problems, co-designing systemic solutions, and co-producing sustainable outputs and outcomes” with external partners facilitating for successful and sustainable partnerships as well as shaping for entrepreneurial academic leaderships to unleash collective synergy (Powell, 2012, p. 414). The KT development trajectory in Powell’s study (2012) was emphasised on the innovative leadership role transformation of universities from traditional one-way technology transfer to two-way KT to interactive ways of knowledge exchange, and to participatory “virtuous knowledge sharing” (p. 414) through partnerships and collective synergy. Henceforth, different stages of KT development in different institutions may affect the innovative leadership role and strategies adopted for effective KT between universities and external partners.

2.1.2 Global context. Moreover, the concept of KT and its related strategies could be comprehended through the browsing of the World Wide Web, in particular, of the higher education field, as the case study research was confined to publicly-funded HEIs. The conceptualisation of KT could possibly be briefly consolidated and summarised by lexical searching of “the concept of knowledge transfer” through the KT related websites of HEIs in the global context, notwithstanding that the browsing would not be conducted in an exhaustive way. This part of the literature review on the specific terminology would be rather confined to a set of criteria, including:-

1. HEIs, which were restricted to random search of public universities by the continents⁴ on Google (e.g., search “the concept of or what is knowledge transfer” and/or add “in the public university of North America”) with the exception of publicly-funded universities in Hong Kong, either have been institutionalised with KT offices or were having the subject discussed and/or

⁴ The continents include Europe Continental, Asia, North and South America, Oceania, and Africa.

defined on their official websites; and

2. HEIs are publicly-funded and entitled the status of university.

Five public universities were selected from the Google search within the specific continents from which the KT conceptualisations were extracted in brief for illustrating the KT concepts and/or the explicitly or implicitly interrelated strategies from the perspectives of public universities as cross-reference to the above interpretative summaries of the systematic literature review. The universities from the United Kingdom (UK, Europe), Canada (North America), South Africa (Africa), Thailand (Asia), and Australia (Oceania) were searched and selected. Table 2.1 was constructed to summarise the basic information in relation to the searching criteria and the interpretation of KT perspective categories of respective universities.

Table 2.1

KT Perspectives and Related Strategies at Glance amongst the Selected Publicly-funded Universities across the Continents

Name of University	Continent	University Status	KT Office	KT Perspective Category	KT Related Strategy
University of Cambridge	United Kingdom, Europe	Collegiate public research university	No but thru its International Strategy Office (ISO) and KT Facilitators at the Research Strategy Office	Implementation	Collaboration
HEC Montréal	North and South America	Public research university	Yes	Implementation	Commercialisation
University of South Africa	South Africa	Public distance education institution	No KT thru Research and Innovation Portfolio	Management	Knowledge management
University of Melbourne	Australia, Oceania	Public research university	No KT thru Research in UM and Technology Licensing Services (TLS) team	Policy	Engagement and partnerships
Mahidol University	Asia	Public research university	No Disseminate knowledge through research innovation and applications to public	Through the policy of enhancing research excellence	Applied research

Sources: Websites of respective universities.

Briefly, The University of Cambridge (2016) in the UK conceptualises “KT is a term used to encompass a very broad range of activities to support mutually beneficial collaborations between universities, business and the public sector”. **HEC Montréal in Canada has no specific paragraphs to describe its perspectives on KT on their website of Research and KT⁵. They perceive KT as a set of commercialisation vehicles and tools for supporting their researchers “in**

⁵ The website of Research and Knowledge Transfer at HEC Montréal is at http://www.hec.ca/en/research_knowledge_transfer/index.html

the negotiation, drafting, revision and signing of contracts” through the vehicles of eValorix.com, technology licenses, spin-off companies, and patents as well as tools like contract templates and forms (HEC Montréal, 2016). Hence, KT is manifested in the form of research projects from which, the transfer of knowledge is actualised through the process of research partnerships and commercialisation. Peter Mkhize of the University of South Africa [UNISA] (2016) published an article at the Proceedings of the European Conference on Knowledge Management (ECKM) in 2013 and posted on the website of Research Output at UNISA as of November 2016. Mkhize perceives KT as practices in knowledge acquisition, particularly in the era of knowledge economy and sustaining competitiveness through intellectual capital creation and acquisition for improving organisation performance (2013). The University of Melbourne [UM] (n.d.) in Australia commits their contributions to and establishes mutually beneficial relationships with the wider society through different levels of engagement, namely public value, students and research engagement. They perceive KT as a strategic policy associated with the concepts of “third strand of the triple helix” and as “the primary intellectual conduit between the University’s academia and non-university partners” of which a wide spectrum of endeavours covering different spheres in the wider society (UM, 2003). Mahidol University [MU] in Thailand has no specific webpage on KT and paragraphs to describe its perspectives on KT on their website of research. They do, however, perceive KT implicitly through their research policy by “developing and maintaining an information and communications strategy, both internally and externally, to support access needs for research and learning while encouraging dissemination and contribution of research innovation and applications to public” (2015). This is especially under the mission of MU and the Thailand government policy on KT (e.g., Ministry of Industry). In fact, MU’s mission is “to excel in health, sciences, arts, and innovation with integrity for the betterment of

Thai society and the benefit of mankind” (MU, 2016b) while it is ascertained through the strategy of “creating new knowledge and cultivate innovation in order to meet the needs of society” (MU, 2016a).

Based on the initial findings of the web search of public universities and KT, it seems that the development and/or establishment of KT offices in public universities across the continents are not absolutely common. Only HEC Montréal in Canada and UC in the UK, i.e., the developed countries, have similar establishments in the form of KT offices and ISO or KT facilitators at the Research Strategy Office respectively. In contrast, those developing countries, with the exception of UM in Australia (i.e., developed country), have not established any KT/KE offices. Besides, their KT perspectives and associated KT strategies are various with different emphases. Of the selected universities in the developed countries, the KT perspectives are more of implementation- or policy-oriented associated KT strategies with internal and/or external linkages, such as commercialisation, collaboration, and engagement. Dissimilarly, the KT perspectives of the selected universities in the developing countries are aligned with management- and or KT through research policy-oriented connected KT strategies more with internal linkages, such as knowledge management and applied research.

2.1.3 Hong Kong context. In addition to the KT conceptualisation across the global public universities, a preliminary review, consolidation and interpretation of KT concepts, its associated strategies, KT orientation and related KT infrastructures amongst eight publicly-funded universities in Hong Kong. These are City University of Hong Kong (City U), Hong Kong Baptist University (HKBU), Lingnan University (LU), The Chinese University of Hong Kong (CUHK), The Education University of Hong Kong (EdUHK), The Hong Kong Polytechnic University (PolyU), The Hong Kong University of Science and Technology (HKUST), and The



University of Hong Kong (HKU). These universities were scrutinised through their designated websites.

Consequently, I attempted to categorise the information retrieved from the designated websites of respective universities as summarised in Appendix 2.3 for an overview. Only half of them (i.e., CityU, HKBU, CUHK, and HKU) have established designated KT/KE offices supported by different functional teams (e.g., Technology Licensing Team of CityU) and/or subsidiaries (e.g., Versitech Ltd of HKU). KT in LU is coordinated through the Office of Research Support (ORS); EdUHK through the KT Task Force with administration support from the KT Unit; PolyU through the Innovation and Technology Development Office (ITDO) with concerted efforts provided by the Institute for Entrepreneurship (IfE), Corporate Development and Training Division (CDT), and Centre for Professional and Business English (CPBE). For HKUST, it is through the Office of the Vice-President for Research and Graduate Studies (VPRGO) coordinates with the Research Office (RO), Technology Transfer Center (TTC), Entrepreneurship Center (EC), and HKUST R & D Corporation Limited (RDC).

Among the eight universities, the KT perspectives, their associated KT strategies and KT orientation in brief are partly similar or vary with different emphases based upon the initial review findings. Of the universities with KT orientation in technology and entrepreneurship, i.e., CityU, CUHK and HKUST, the KT perspectives were implementation-oriented associated KT strategies more with internal linkages and procedural emphases, such as commercialisation, institutionalisation and protecting. Besides, there were no specific missions and/or objectives in relation to KT explicitly stated in the websites of CityU, CUHK and HKUST, notwithstanding that their KT missions/objectives were interpreted according to relevant descriptive information. However, although PolyU's KT orientation is also aligned with technology and entrepreneurship,

its KT perspective is more of implementation thru policy perspective, in particular, the KT mission statement drives the development of innovation and technology through innovation and TT strategy. In contrast, those universities, i.e., LU, EdUHK, HKBU, and HKU, with KT orientation in non-technology or mixed with technology and/or entrepreneurship, were either more of implementation thru policy perspective or policy perspective. In addition, the associated KT strategies, such as engagement, incentive, and capacity building, were more with internal linkages.

2.1.4 The higher education context. Integrating the preliminary literature review from public university websites and KT across continents and within Hong Kong, it was likely common for the establishment of KT Offices or KT related offices/units. They were responsible for the coordination and implementation of KT initiatives and strategies derived from KT conceptualisation and perspectives of respective universities to be located in developed countries/economies. Besides, they were more of implementation, policy or mixed mode orientation associated KT strategies with internal and/or external linkages. In contrast, despite the review not being comprehensive and representative, it seems that the universities in the developing economy had neither yet set up KT Offices or units nor conceptualised KT at the policy associated KT strategies with internal and/or external linkages. Instead, they emphasised more of internal knowledge creation through enhancing research capacity and/or management that internal linkages were relatively important for their own development in knowledge and transfer.

Notwithstanding that there may be different KT conceptualisations, perspectives and strategies among different HEIs within the developing and developed economies across the continents, I would argue that apart from the different associated contexts, the differences are

possibly related to different stages of KT and strategy development. Powell's (2012) study was on the innovative leadership role transformation of universities. Kitagawa and Lightowler (2013) observed a development trajectory of institutionalisation of knowledge exchange/transfer within the higher education sector to the incentive emphases on the KE/T activities at the national and institutional levels over the past 30 years. The reconfiguration of knowledge acquisition and transfer through the concept of "network-based intellectual capital" in the technological breakthrough and inescapable global interconnectivity context (Elena-Mădălina, Diana-Luiza, Andreia Gabriela, & Cristina, 2015), and the promotion of free open knowledge by the establishment of an Open Knowledge Office (García-Peñalvo, Figuerola, & Merio, 2010) support the developmental perspective of KT. These are particularly in the context of KT as the "third mission" of the higher education sector.

However, this comparative multiple-case study was not intended to investigate either the variables (e.g., interaction, collaboration and networking) behind the effective ways of KT (Howells et al., 2012; Johnston et al., 2010; Thomas, 2012). Neither was the study intended to distinguish intervening factor(s) (e.g., motivation and reward mechanisms) during the process of KT emphasising how the end is influenced by internal or external or both factor(s) (Kumaraswamy & Chitale, 2012; Lockett et al., 2008; Nelles & Vorley, 2010; Powell, 2012; Serrano-Velarde & Krücken, 2012). Its focus instead was to fill the gaps of what are the knowledge transfer development processes by addressing the down-to-earth issues of KT implementation, especially after twenty-years or more development. By investigating the extant KT strategies adopted and implemented by three publicly-funded small to medium size HEIs in Hong Kong, it intended to derive an initial understanding about their differences, similarities and uniqueness, and explore whether there are differences between strategies formulation,

dissemination and implementation amongst three HEIs. These could be manifested by the KT strategy emphases and driven models of the three cases as regards of the findings derived from the data observation and analysis, especially from the development perspective of the KT trajectories and development stages of the cases embedded in the context of KT as the “third mission” of the higher education sector.

2.1.5 The technology and non-technology knowledge transfer context. This part of the literature review is merely a brief coverage of the technological and non-technological aspects of knowledge transfer for broadening readers’ conceptualisation on KT in the knowledge context interconnected with the developmental trajectories of third mission at large. Yet I have no intention to discuss this part in detail, particularly in terms of the disciplinary areas of knowledge across different chapters since these are at the academic implementation level whereby my study focuses on KT strategies at the institutional level. Additionally, this helps to widen our understanding of KT. This is generally categorised in twofold: the transfer of tangible and explicit knowledge such as increasing productivity and unleashing creativity as well as tacit and implicit knowledge such as good ideas and research experiences.

Over the past three decades, the roles and functions of higher education institutions have been transforming. The transformation has seen an emphasis from their traditional roles of teaching, learning-facilitating and academic research into the contemporary roles of contributing to socio-economic, entrepreneurial and social sustainability development through knowledge transfer in respect of innovative and collaborative research, knowledge creation and accumulation, and industry and community engagement (Clark, 2001; UNESCO, 2002; Mowery & Sampat, 2004; Ozga, 2004a, 2004b; Lockett et al., 2008; Nelles & Vorley, 2010; Schofield, 2011; Serrano-Velarde & Krücken, 2012; UGC, 2013).

Commencing with the Bayh-Dole Act of 1980 (1980 Act) or even earlier in the United States, the technological aspects of KT were prevailing “with significant growth in patenting and licensing by US universities”, in particular, of applied sciences and engineering, through the trajectories of engagement between universities and industries for applied research collaboration and technology transfer (Mowery & Sampat, 2004, p. 115). Subsequent development and emphasis on technology transfer through collaborative R&D in the universities across the UK and Europe became widespread a decade after the Bayh-Dole Act (Johnston et al., 2010; Mowery & Sampat, 2004; Nelles & Vorley, 2010).

Commencing with promotion and formalisation amongst HEIs for engaging in socio-economic and entrepreneurial roles associated with the third mission over the past two decades, nature, scope and inclusiveness of the third mission / KT activities have evolved and diversified in association with both economic and social engagement (Nelles & Vorley, 2010). Apart from the transfer of technology knowledge dominated in the third mission activities, the non-technology knowledge includes the arts, humanities and social sciences had been extended in the third mission agenda of the universities (Bebbington, 2006 in Nelles & Vorley, 2010; Benneworth & Jongbloed, 2010; Mould, Roodhouse & Vorley, 2009). This inclusive trend is largely associated with and building upon institutional strengths and specialisations in disciplines, teaching and research, amidst the evolution of the third mission in socio-economic and social engagement and contributions (Nelles & Vorley, 2010).

Realising the evolution of “third mission” KT development in the higher education sectors of many advanced economies, the UGC has incorporated the KT notion into its mission statement and role statements of the institutions (UGC, 2016). It defines KT with a wider spectrum in multiple disciplines than technology transfer by emphasising the tacit aspect in KT,

“by which knowledge including technology, know-how, expertise and skills are transferred between higher education institutions and society, leading to innovative, profitable or economic or social improvements” (UGC, 2016). Over three decades of KT development while under this contemporary trend of third mission conceptualisation, the UGC has provided specific KT funding from 2009/10 onwards for public-funded universities engaging in capacity building, broadening KT endeavours in multiple disciplines and transferring technological and non-technological knowledge to the wider community (UGC, 2016).

Nevertheless, “concept” is explained as “an idea or abstract principle” (Collins Cobuild, 2012, p. 311) in that associated forms, the abstract idea/principle on KT, could be varied and transformed according to different interpretations over time, space, purposes, beliefs, and within different contexts. For instance, the public policy and knowledge-driven economy, institutional learning, teaching and research, the organisation and management, and the business and market context are having different interpretations and emphases on KT by one’s own nature. However, most of the HEIs may have similar concepts within the same context of the higher education field. These include KT as the “third mission” and interprets from a contemporary policy context, over KT under the same era even though their developmental trajectory may be different. This development-based model becomes one of the guiding framework applied further during the process of investigation and analysis highlighted in Chapter 3. In addition, a number of popular models attempt to explain and/or study KT from different perspectives focusing on various levels of enquiries would be briefly mentioned in the part of theoretical framework in Chapter 3 respectively.

Following the established foundation for a comprehensive understanding of the concept of KT and its development in different contexts, some explicit or implicit KT related strategies

were identified as examples derived from the process of the KT literature review in a systematic way. Nevertheless, whatever KT conceptual understandings and perspectives were, it would likely encounter with the issue of KT strategy whereby the success and/or effectiveness of KT may be achieved through the appropriate strategy formulated, disseminated and implemented for responding to the stage of KT development in a specific context. Notwithstanding that there could be an exhaustive list of KT strategies found in the literature, e.g., a keyword search of “knowledge transfer strategy” without specific contexts from 1990 to 2016 through the search engine provided by iSearch (EdUHK) resulted in 702,504 related articles, a brief review in different contexts related to this research study is conducted in this chapter. Coding strategy for the creation of KTS related thematic sub-categories from relevant literature and collected data would be employed thoroughly in the methodology chapter targeting for constructing one of the main parts of this study.

2.2 KT Strategies in Different Contexts

Prior to the brief review of KT strategies in different contexts, it is essential to have a general understanding of the definition of strategy, particularly applied in my study. Briefly, “a strategy is a general plan or set of plans intended to achieve something, especially over a long period” (Collins Cobuild, 2012, p. 1545). Specifically, I adopted and adapted the definition defined by Johnson and Scholes (2006) of which the terminology of strategy applied here is embedded in an organisational/institutional context aligning with the case study situation of HEIs in Hong Kong. “Strategy is the direction and scope of an organisation over the long-term, which achieves advantage for the organisation through its configuration of resources within a challenging environment, to meet the needs of markets and to fulfil stakeholder expectations” (Johnson & Scholes, 2006). With adaptation, strategy is about:

1. “Where are higher education institutions attempting to achieve KT over a long period?” from which this implies direction through institutions’ respective vision and mission of KT;
2. “Which targets should HEIs strike for and what kind of KT activities are involved with such targets?” from which this implies stakeholders (markets) and scope of KT;
3. “How can HEIs perform better in KT? What are their strengths?” from which individual institutions need to assess one’s own strengths and advantages for implementing KT;
4. “What resources are required for performing better in KT?” from which availability of the research-based knowledge, experts, financial support, and incentives for engagement are typical examples of the required resources for well performance; and
5. “What are the values and expectations of those who have power in and around the HEIs with regard to KT?” from which this implies stakeholders of all types, such as government, senior management and/or academia of HEIs, relevant industries and community stakeholders, whereby both their values and expectations towards KT are essential indeed.

The definition of strategy applied here is generally and basically aligned with the policy perspectives on KT whereby it is oriented with different missions, objectives, strategies and/or KT projects developing at the macro-meso-micro level. Nevertheless, KT as a trajectory of development stages is also required to be taken into consideration for the analyses of strategic focus with existing individual strengths and characteristics embedded within the here and now context.

With a brief review, the literature explicitly and/or implicitly examined, discussed or connected with KT strategies were abundant. Only those related to HEIs within different contexts were selectively cited as examples for this study, which included:

1. Knowledge Management Context

a. KT mentoring strategy

Mentoring in an organisation/institution for discipline KT is essential for employees to assume the necessary hard and soft skills in fulfilling their roles and responsibilities over time in the organisation, job and career (Trees, 2016).

b. ‘Open’ Knowledge Transfer strategy

It was suggested that interconnectivity and flexibility are important strategies for the management of university knowledge transfer, particularly in relation to the transformation as an entrepreneurial university (Sharifi, Liu, & Ismail, 2014).

2. Knowledge-driven Economy Context

a. Collaborative strategy

Collaboration between universities, industry and public research institutes through co-publishing and co-patenting of research results are important to exploit academic knowledge to its fullest potential for the benefit of economic growth (Kwon, 2011).

3. Third Stream/Mission Context

a. KT Engagement

Engaging staff communities for conceptualising and operationalising KT through leadership roles and personal linkages (Goodwill, 2012).

b. Institutionalisation and Incentivisation Strategy

With increasing support from public policy for prioritising research and innovation; Institutionalisation of KE/KT through institutional policies and incentivisation through funding support become key strategies for the promotion and development of KT (Kitagawa & Lightowler, 2013).

4. Learning and Teaching Context

a. Linking strategy

“Findings suggest that linkage agents are central actors in KT process in education” (Becheikh, Ziam, Idrissi, Castonguay, & Landry, 2010, p. 1).

Nevertheless, KT strategies, such as capacity building, implementation and innovation, emphasised and encouraged to apply in the broader context of the HE sector in Hong Kong were likely to be aligned more with the micro context of knowledge-driven economy and third mission, especially in conjunction with the KT policy and funding initiatives implemented by the UGC in the 2009/10 academic year onwards (UGC, 2016). UGC defines KT as “the systems and processes by which knowledge, including technology, know-how, expertise and skills are transferred between HEIs and society, leading to innovative, profitable or economic or social improvements” (UGC, 2016). Indeed, my interpretation of the KT policy and/or activities in Hong Kong embedded in the knowledge-driven economy and third mission context were largely based on the UGC and the UGC-funded universities’ stances manifested on their KT websites and relevant documentary evidences. Such evidences included the Guidance Notes of the Initial Statement for the 2012-15 triennium and universities’ Annual Report on KT Recurrent Funding (UGC, 2016). For instance, “UGC strongly believes that the transfer of knowledge between institutions and the society helps bring about socio-economic impact and improvements to the community and businesses” (UGC, 2016). Besides, KT enriches universities’ research mission and capacities as well as enhances local HEIs’ international competitiveness, particularly under a two-way process of KT (UGC, 2016). Documentary evidences from the local universities, especially those from the study cases, are detailed in the study case reports in Chapters 5 to 7.

2.3 Connection between KT and HEIs

Generally, KT is not a franchise policy, mission and/or activity of any HEIs while it

involves different stakeholders, such as individuals, management consultants, business firms/elites, industries, public research organisations, community stakeholders, and HEIs, at different micro contexts of the contemporary era in a broader concept (Elmuti, et al., 2005; Howells et al., 2012; Johnston et al., 2010; Kumaraswamy & Chitale, 2012; Lockett et al., 2008; Nelles & Vorley, 2010; Powell, 2012; Reid, 2015; Schiller & Brimble, 2009; Serrano-Velarde & Krücken, 2012; Thomas, 2012; Trees, 2016). In the business organisation context, for instance, KT “involves creating, securing, coordinating, combining, retrieving and distributing knowledge” within and across organisations (Lin, Wang & Tserng, 2006), from which KT relates to the policies and practices of knowledge management for “retaining and transferring staff experiences and the so-called tacit knowledge internally” (Chung, 2014, p. 79). Individual staff, business leaders and organisations become key stakeholders of and involvement in KT. Similarly, in the institutional learning, teaching and/or research context, teachers, academia, and students become key stakeholders of and involvement in KT, notwithstanding that knowledge involves a one-way transfer process under a traditional method of teaching and learning, mentoring or publications for hooking readers to read (CSU Monterey Bay, 2008).

Nevertheless, although KT is not a franchise of HEIs, public expectations over HEIs, in particular, of those publicly-funded, are ever changing and demanding on their social roles and responsibilities towards the present and future needs of society in meeting present and future challenges within a complex and interconnected globalised world (UNESCO, Paris, 1998; Section for Education for Sustainable Development [SESD], UNESCO, 2002). Inescapably, accompanying with the advance development of information and communications technology (ICT), the world is globalising as one system with spurring effects on technological, economic, social and cultural change. In addition, the transferability / mobility of capital, technology,

information and labour in which a knowledge-based society is formed with increasing demands for enhancing her capacity in the acquisition, dissemination and application of evolving and ever changing knowledge in order that the society could become sustainable (SESD /UNESCO, 2002).

Considering the essential needs in responding to present and future challenges in the twenty-first century, the first-ever World Conference on Higher Education in Paris was held in October 1998 by UNESCO that involved 4,000 representatives of 182 States from different sectors in relation to education and higher education (UNESCO, Paris, 1998). Subsequently, the Conference was unanimously considered as the importance of widening the traditional missions of teaching, learning and research of HEIs into an adaptive, interactive and responsive institutions towards the society (UNESCO, Paris, 1998). As emphasised in the Declaration of the World Conference that “society is increasingly knowledge-based (...), higher education and research now act as essential components of cultural, socio-economic and environmentally sustainable development of individuals, communities and nations” (UNESCO, Paris, 1998, p. 2). To fulfil these changing functions and missions, HEIs are subject to fundamental changes “for ensuring their intellectual independence, for creating and advancing knowledge, and for educating and training responsible, enlightened citizens and qualified specialists” in order to sustain and develop the economic, social, cultural or political aspect of any nation on one hand (UNESCO, Paris, 1998, p. 2). On the other hand, the Conference addressed that “higher education should be considered as a public service for a balance achievement of educational and social missions” and the “sharing of knowledge and know-how” locally and internationally through collaboration and partnership are essential (UNESCO, Paris, 1998, p. 27).

Furthermore, in the 2002 World Summit on Sustainable Development (WSSD), apart from

the underscoring of education in meeting future challenges within a complex and interconnected globalised world, it also emphasised that HEIs play a crucial role as important centres of research, teaching and learning. Additionally, HEIs are sources of fundamental, innovative and practice-oriented knowledge from which is a key factor for sustainable development, in particular of generation, dissemination and the exchange of knowledge through various mechanisms within the global context (Section for Education for Sustainable Development, UNESCO, 2002).

Apart from changing role expectations and functions for enabling and enhancing sustainable development, economy and competitiveness in a knowledge-based society, KT is always regarded as the “third mission” of HEIs (Lockett et al., 2008; Nelles & Vorley, 2010; OEDC, 2011; UGC, 2006) actualising through their commitments in research-based knowledge creation and dissemination for problem solving and national development (Macgregor, 2014). Besides, the KT policy and practices of community engagement and services associated with the “third mission” of HEIs (Macgregor, 2014; Ozga, 2004; Schofield, 2011) were in place and developing for fulfilling their changing roles and adapting their changing functions in contemporary society. Under these circumstances, HEIs are playing a pivotal role in KT amongst other stakeholders and within a broader framework on KT in meeting future challenges within a complex and interconnected globalised world, especially in regard to the comprehensive sources of professional and practical knowledge created through multi-disciplinary education, research, innovation, and collaboration.

2.4 A Systematic Approach to Research

To accomplish the initial and derived objectives, a systematic approach of research methodology and analytical framework for conducting this comparative multiple-case study with

breadth and depth was explored and adopted in my research. Moreover, the adoption of an adaptive process of systematic review of KT, its explicit or implicit strategies, and the connection with HEIs, facilitates the conceptualisation of KT. This, in turn, could be interpreted from and categorised as policy, implementation, organisation, and developmental perspective embedded within different contexts. It further helps to identify the crucial connection of the higher education sector with KT and associated KT strategies from different perspectives. Subsequently, all these facilitate for the furtherance of research ideas and objectives of filling the gaps of what are the knowledge transfer development processes by addressing and investigating the issues of KT implementation, specifically for the extant KT strategies formulated, disseminated and implemented by the publicly-funded universities within the HE context of Hong Kong.

In addition to the implementation of a systematic literature review, I adopted and adapted Yin's (2014) systematic approach of six components of research designs for the multiple-case study research whereby it includes logistic plans and procedures for research implementation and data collection as well as a logical analysis process and findings interpretation. Bray and Thomas' Cube (Bray & Thomas, 2007) conceptual framework, the three dimensions of study purposes and perspective, manifestations and data collection methods adapted from Adamson and Morris' (2007) comparing framework, and the development-based perspective model (Chung, 2013) derived from a research conceptualising process were chosen as the theoretical and methodological guiding frameworks for comparative education analyses. Apart from the multiple-case study and components of research designs for case study research used under a systematic approach and as the methodological guiding framework, I further analysed the collected data through a systematic approach of thematic qualitative text analysis and heuristic framework for comparative analysis respectively so as to triangulate the research analysis. These

types of guiding frameworks are elaborated in Chapter 4.



Chapter 3

Multiple-Case Study – Theoretical Guiding Framework

This chapter and Chapter 4 of the Methodological Guiding Framework discuss the guiding theoretical framework for comparative education research, analytical models and methodologies used in this study. To investigate knowledge transfer strategies in higher education institutions, this study fundamentally adopted a case study method approaching multiple cases for comparison. Considering the qualitative nature of knowledge transfer strategies and the quality assurance of this multiple-case study as well as addressing the rigorous and reliability issues originating from the comparative and interpretative analysis process, rigorous, systematic, interconnected and comprehensive research and analytical methodologies were required. Two varieties of comparative education approaches were adopted, namely a “Focus Comparison and Interpretative Analysis” (Adamson & Morris, 2007) with units of comparison and analysis suggested by Bray and Thomas (Bray, Adamson, & Mason, 2007), as the guiding theoretical framework. Different analytical models were further discussed while a “developmental process based model” (Chung, 2013a) was employed guiding for understanding knowledge transfer and strategy development. This theoretical framework and analytical-perspective model were comprised as the particular lens with a frame of perspectives for investigating the contemporary education phenomenon of knowledge transfer through the connectedness of methodological guiding frameworks employed under this multiple-case study approach.

In brief, a rigorous research design and systematic data collection methods were derived from Yin’s (2014) case study method facilitating as logistic plans and procedures for research implementation and data collection. Besides, logical analysis process and findings interpretation

were also incorporated into the components of research designs by establishing a set of criteria for organising and interpreting the findings. These criteria were derived from different but cohered analytical strategies and methods framed under the guiding theoretical framework and analytical perspective. These included Yin's (2014) descriptive framework strategy for in-depth case study, Lavis, Robertson, Woodside, McLeod and Abelson's (2003) heuristic framework for case's KT strategy description and comparative analysis, Adamson and Morris' (2007) framework for focus comparison and interpretative analysis, and Kuckartz's (2014) thematic qualitative text analysis for thematic matrix interpretation and "cross-case synthesis". From these, a set of strategic and multiple-analytical techniques embedded in the methodological guiding frameworks were formed. Practically, the descriptive framework formed an overall strategy for frame construction of any one of the cases by the creation of itemised sections for in-depth case description analysis and replication of other cases. The thematic qualitative text analysis involves a derivation process of coding with thematic categories (e.g., research question-related) and sub-categories (e.g., identified KT strategies) forming the ingredients for thematic matrix interpretation and "cross-case synthesis". Furthermore, comparative and interpretative analysis through multiple-analytic techniques, likely as descriptive, interpretative and comparative analysis adhering to the adopted methodological guiding frameworks. Strategically, they became the guiding frameworks for organising and manipulating the collected case study data through different but cohered analytic directions and processes for findings interpretation and answering the research questions. Indeed, multiple-case studies are likely to commensurate with and complemented by multiple-analytic techniques for quality assurance as in terms of construct validity, external validity and reliability in comparative case study research. To conceptually illustrate the guiding theoretical framework for comparative education research,

analytical model and methodologies used in this study, Figure 3.1 was constructed.

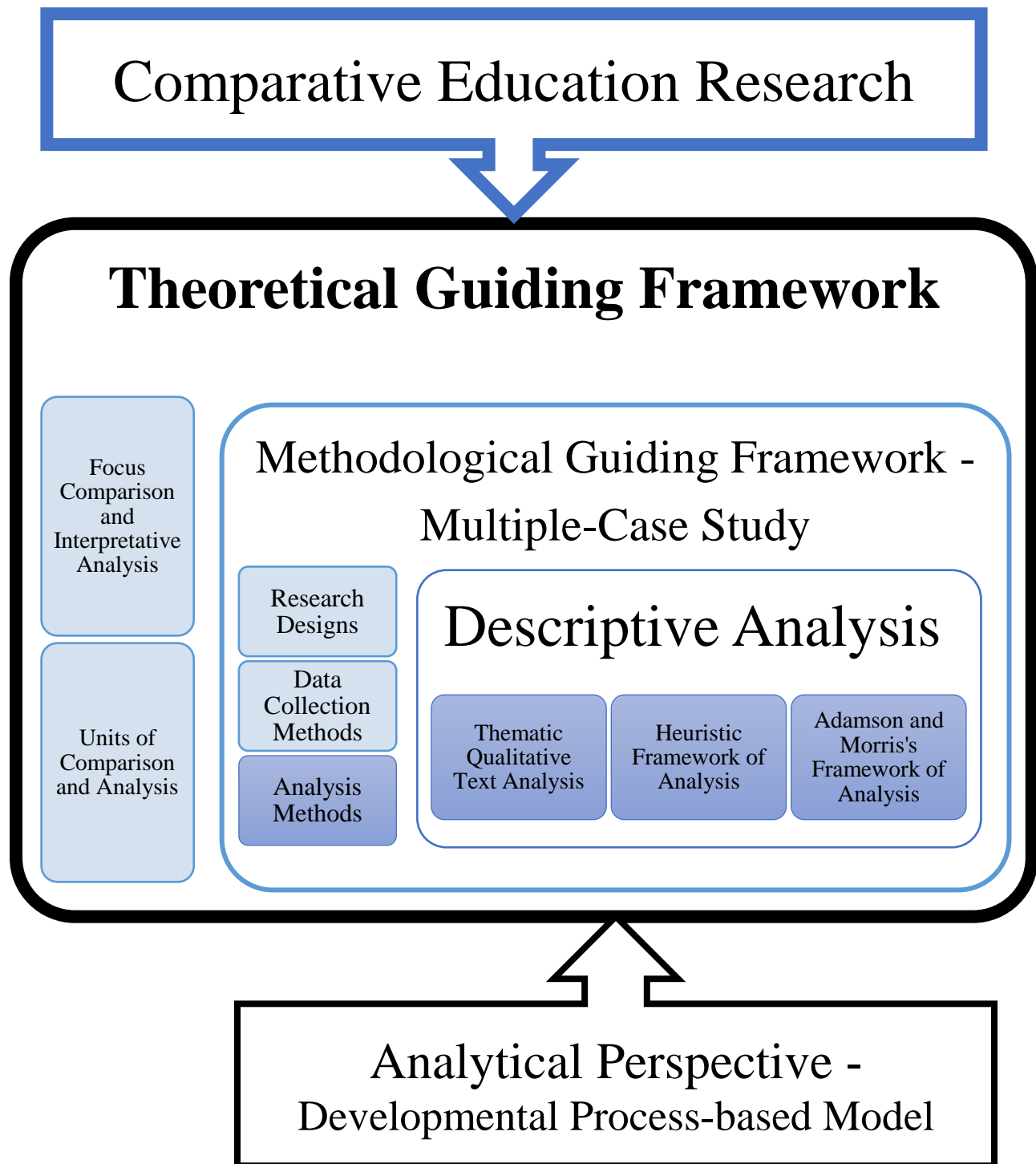


Figure 3.1. Multiple-Case Study – Theoretical and Methodological Guiding Framework.

Operationally, this study aimed to investigate higher education institutions' knowledge transfer strategies through a comparative study of three institutions in Hong Kong. This was more of requiring "extensive and in-depth description" (Yin, 2014, p. 4) of what KT strategies have been adopted and implemented by the selected institutions in the contemporary context of the higher education sector so as to explore any established differences between different strategic levels. Notwithstanding the "how" and "why" types of explanatory questions are more relevant to use a case study method (Yin, 2014), the in-depth descriptive nature and the research questions of "what (Q1 and Q3)" and "how (Q2)" set out in the following section as well as the specific roles, missions, areas of strengths and experiences in KT development of respective institutions were distinctive that both a descriptive and an exploratory phase of investigation should be involved (Yin, 2014). As such, multiple-case study with a qualitative method of inquiry into the KT strategies through archival documents, semi-structured interviews and guiding questions were set out as the case study protocol and used for data collection. The method of "triangulation" was employed for research analysis so as to eliminate the limitations of potential bias, non-comprehensive and non-multiple perspectives from the common critical concern over the potential shortcomings of case study methodology. Consistency of the findings were ascertained through "the convergence of data collected from different sources" (Yin, 2014, p. 241) while the analytical strategy of descriptive, interpretative and comparative analysis aligned with a set of strategic and multiple-analytical techniques embedded in the methodological guiding frameworks were adopted as part of the case study research design (Yin, 2014).

3.1 Objectives, Scope and Research Questions

The scope of study was confined by the comparative education analysis guiding

framework, Yin's (2014) illustrative case study protocol, thematic qualitative text analysis (Kuckartz, 2014), of which I will further elaborate on in the sub-sections of Chapter 4 and the research questions. The research questions of the study were as follows:

1. What kinds of knowledge transfer strategies have been planned and adopted by three selected higher education institutions?
2. How have the institutions disseminated and implemented the KT strategies?
3. What are the differences, similarities and individual characteristics of KT strategies amongst three HEIs?
4. Are there notable differences between strategy formulation, dissemination and implementation amongst three HEIs?

It was expected that the research results could provide implications for local HEIs' KT planning and implementation as well as the policy makers' funding initiatives. With the salient characteristics of case study research methodology, it helped me to focus the investigation on the "multiple cases" with in-depth analyses and understanding of the complex and contemporary education phenomenon in the institutional context with a reality and holistic perspective (Yin, 2014). By the adapted guiding frameworks of comparative education analysis, case study protocol and thematic qualitative text analysis, I intended to establish reference-based knowledge transfer strategies within the linear and cyclical process of formulation, dissemination and implementation. The reference-base was substantiated through the process of systematic review and categorisation of KT strategies with the support of multiple-case oriented evidences. As a result, some exemplars of KT strategy as well as differences, similarities and individual characteristics of KT strategies amongst the three HEIs were established. These became a reference-base for informing systematic and strategic KT planning and implementation from a

KT development perspectives.

3.2 Theoretical Guiding Framework for Comparative Education Research

3.2.1 Theoretical overview of the research. This research used a comparative education approach with Bray and Thomas' Cube (Bray et al., 2007) conceptual framework as one of the theoretical guiding frameworks for choosing the units of comparison and analyses from the three dimensional units with multiple levels of entry (i.e., HEIs at the locational level, KT strategies as the *aspects of education and of society*, and various agencies as the *non-locational demographic groups*). Within this framework, the unit(s) of analyses by Adamson and Morris (2007) for comparing curricula was adapted guiding for comparing KT strategies in focus through the examination of the three dimensions of study purposes and perspectives, manifestations and data collection methods. The framework was borrowed and adapted for identifying discernible dimensions or themes for achieving focus, comparative, systematic comparison and interpretative analysis. Although it was originally a framework derived for comparing curriculum inquiry, the interlinking dimensions were borrowed and adapted for comparing KT strategies in focus. Under these theoretical guiding frameworks for choosing the units and identifying discernible dimensions for comparison and analyses, multiple-case study with a qualitative method of inquiry into the KT strategies was manipulated as the research methodology in this study.

3.2.2 Units of comparison and analysis - the Bray and Thomas Cube. Mark Bray, Bob Adamson and Mark Mason raised a common phenomenon existing in-between the field of comparative education and other fields whereby there was a dichotomy of a one-side focus and domination of comparison between cross-national comparative studies and intra-national comparisons (Bray et al., 2007). The former benefited from international perspectives but limited

with intra-national or local perspectives while the latter were contrasted with local foci only (Bray et al., 2007). They commented building “stronger relationships between different fields within the wider domain of educational studies” produces all-round benefits for all through the process of cross-fertilisation, notwithstanding the methodologies and conceptual emphases were different (Bray et al., 2007, pp. 8-9). To achieve the state of equilibrium and maximise cross-benefits, multilevel analyses in comparative studies for comprehensive understanding of educational phenomena were suggested (Bray & Thomas, 1995; Bray et al., 2007). To actualise the suggestions, a multilevel model, namely the Bray and Thomas Cube, was devised in the mid-1990s and has been widely cited for facilitating the development of new directions in comprehensive analyses of educational phenomena through comparative education research (Bray et al., 2007, p. 422).

The Bray and Thomas Cube (Bray et al., 2007, pp. 8-10) adopted a three dimensional perspective with different levels. These are seven locational levels such as countries, schools and classrooms; multiple groupings (i.e., non-locational demographic groups such as ethnicity, gender, entire population and other groups); and various educational and social issues (i.e., aspects of education and of society such as curriculum, management structures, labour market and other aspects) (Bray et al., 2007). They emphasised comprehensive analyses of educational phenomena that could be achieved through multilevel analyses in comparative studies for the benefit of balancing the extreme and cross-fertilisation (Bray et al., 2007). For example, it could be comparing multi-linguistic curriculum in primary schools across countries and amongst schools within each local context.

With reference to the Cube, this comparative study was adhered to the institution level within the context of the HE sector in a society (i.e., locational levels), in which KT strategies



are the aspects of education and of society at large focusing on various agencies. These include senior management, KT officers and academia of HEIs (i.e., non-locational demographic groups) at different levels of KT strategies (i.e., formulation, dissemination and implementation). The framework of the Cube has indeed conceptually and practically guided my research by adhering to the selection of different units from multi-levels facilitating for comprehensive analyses even though it was only confined to the local context of comparative study.

3.2.3 Focus comparison and interpretative analysis - the Adamson and Morris'

Framework. Apart from the Bray and Thomas Cube, Adamson and Morris' framework for comparing curricula as one unit of analysis (2007, pp. 316-322) was used and adapted to guide the study in focus by identifying discernible dimensions or themes for achieving focus, comparative comparison and interpretative analysis. No matter whether a study focuses on a curriculum or knowledge transfer strategy inquiry, each is uncontentious and regarded as one unit of analysis embedded in various educational issues. This framework was, instead, borrowed for its concepts, approach of comparison and categorised perspectives or forms of inquiry, namely evaluative, interpretative and critical perspective, for selection in the study. As explained by Adamson and Morris (2007) interpretative or hermeneutic perspective "endeavours to analyse and explain phenomena" (p. 319) under complexity and multi-dimensions with a certain extent of ambiguities in reality. This why the methods of triangulation, thick description and/or audit trail are applied for dealing with the possible subjectivity derived from interpretative analysis, particularly for case study research (Adamson & Morris, 2007).

To address the issue of complexity and diverse manifestation of curriculum and demonstration, and how to tackle for comprehensive analysis and comparison with regard to its multifaceted diversity, Adamson and Morris constructed a framework for comparing curricula.

Under the framework. These are under three interrelated dimensions – “purpose and perspective, curriculum focus, and manifestations” (2007, pp. 316-322) with explicit intention of comparisons for multilevel and narrowly focused analyses. This study adapted and used Adamson and Morris’ framework for guiding and comparing KT strategies in focus amongst the three selected units at the “locational” and “non-locational” levels. These were achieved through the examination of study purposes and perspectives (i.e., interpretative perspective for analysing and explaining education phenomena through established facts and views), manifestations and data collection methods in relation to the foci of studying – the KT strategies (Chung, 2014) at different levels of the targeted cases. Table 3.1 was established to consolidate the aspects of comparison, manifestations, data collection and research methods, which was an adaptation of Adamson and Morris’ framework.

Although the framework was originally derived for comparing curriculum inquiry, it was borrowed with adaptation for identifying discernible dimensions or themes for achieving systematic comparison and interpretative analysis. Meanwhile, it was essential for adaptation guiding for comparing KT strategies in focus from multiple data sources with different manifestations so as to enhance the reliability and comparative of the case-study research in a systematic and rigorous method. Besides, it may have complemented the advocated concept of multilevel and comprehensive analyses derived from the Cube with comparative focus in a systematic and meaningful way.

Table 3.1

KT Strategy Manifestations, Typical Data Collection and Research Methods

Aspect of KT strategies	Typical manifestations	Typical data collection and research methods
Conceptual understanding and interpretation of KT	KT Vision, mission and objective statements on web; Strategic development documents; Policy documents; Academic papers, etc. and KT staff at different levels	Desktop / websites research and interviews; Documentary and case study analysis
Strategies Planning/Formulation	Policy documents; Strategic development documents; Planning on web; KT staff at senior/management level, etc.	
Strategies Dissemination	KT promotions on web; KT reports; Academic/discussion papers; KT staff at manager/coordinator level, etc.	
Strategies Implementation	KT deliveries on web; KT reports; Academic/discussion papers; KT staff at academic/frontline level, etc.	

Source: Adamson and Morris (2007, pp. 316-322).

3.2.4 Analytical models – guiding for understanding KT and strategy Development.

In addition to the theoretical guiding frameworks for comparative education analyses in my research, there were some KT theoretical models guiding understanding towards KT and its related strategy development, particularly in relation to and under the context of the higher education sector. Although HEIs are most likely the key stakeholders of KT, the connections between HEIs and the community/society are inevitable, especially under the contemporary era of knowledge-based economy and development. Research study examples of HEI-industry interaction and relationship in KT, such as study aims in order to understand the importance of social processes in KTE between HEI-industry interaction and to explore the essence of strategic alliances between universities and corporations, were cited as evidences of the contemporary

phenomena and development (Elmuti, et al., 2005; Johnston, et al., 2010).

Generally, there are a number of models that attempt to explain and/or study knowledge transfer from different perspectives focusing on various levels of enquiries, in particular, of those popular and modern theories in relation to “the structures of knowledge transfer in society” (Graham, 2008). Amongst them, a Triple Helix (TH) model by Henry Etzkowitz and Loet Leydesdorff, which emphasises the development of innovation, developed to explain triangular interactional relationship between state, industry and academia, whereas, each has one’s own specific functions such as public control, wealth generation and knowledge production (Etzkowitz & Leydesdorff, 1995). Relevant KT studies on the TH model were normally focused on the inter-institutional relationship and interaction within the country context. The production and transfer of knowledge are embedded in a collaborative structure whereby “tri-lateral networks and hybrid organizations” were formed (Etzkowitz & Leydesdorff, 2000 cited in Ozols & Ozola, 2012).

Regarding the “Mode 2” model on KT, it emphasises more of the nature of knowledge production perspective from which this “new paradigm of knowledge production (‘Mode 2’)” has its unique characteristics. These include “socially distributed through information and communication technologies with unrestricted and instantaneous interaction; application-oriented with the process of ‘applied’, ‘transferred’ and ‘managed’; trans-disciplinary with emphasis on mobilizing practical solutions; and subject to multiple accountabilities” (Nowotny, Scott, & Gibbons, 2003). The production and transfer of knowledge are embedded in an interdisciplinary structure (Gibbons et al., 1994 cited in Graham, 2008) whereby knowledge may be transformed through networked innovative systems.

The third common model on KT is the Post-normal Science (PNS). It puts emphasis on

the policy process of decision making in which multiple stakeholders amongst the knowledge profession would be involved for “distributive decision-making” and “distributive responsibility” so that the sources of knowledge can be extended (Graham, 2008). The production and transfer of knowledge are embedded in a decision-making structure whereby an “extended peer community” of professionals had to be involved, in particular, of uncertainties and low clarity (Graham, 2008).

My research study on KT was distinctive from the aforementioned models as in terms of explanation from different perspectives and studying at different levels of enquiries. The TH model focuses to explain KT from the perspective of inter-institutional relationships and interactions in which the level of enquiry is at the inter-institutional level within the context of society (i.e., social system). The “Mode 2” model on KT emphasises on the knowledge production perspective in which the level of enquiry is at the interdisciplinary level within the context of networked innovative systems. The PNS model puts emphasis on “distributive decision-making and responsibility” in which the level of enquiry is at the process of decision making within the context of “extended peer community” of professionals.

However, my research study suggested knowledge transfer is development process-oriented and viewed from a Linear-to-Cyclic (LTC) Model Perspective illustrated in Figure 3.2 (Chung, 2013a).

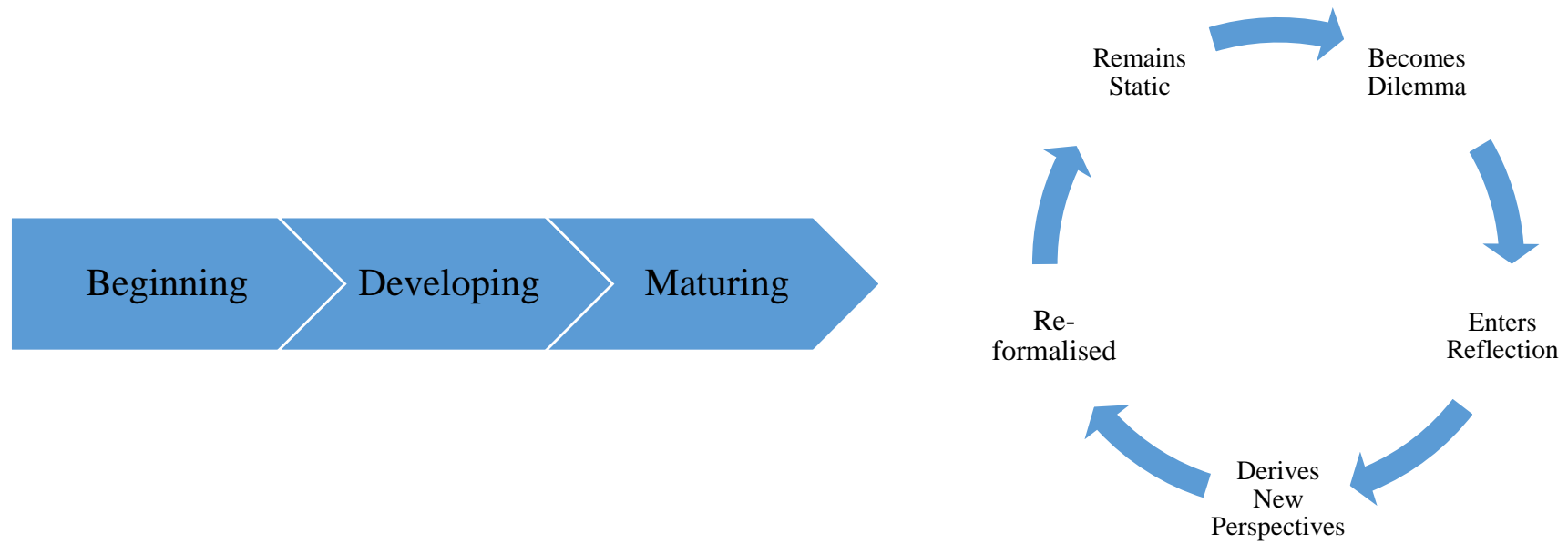


Figure 3.2. Linear-to-Cyclic (LTC) Model - Developmental Process Perspective.

This LTC Model emphasises the developmental stages of knowledge transfer, particularly related to and applied in the context of HEIs. KT will normally come across linear development stages, namely as “Beginning Stage”, “Developing Stage” and “Maturing Stage”, and enters into a cyclic stage of development, whereas, each stage has its own characteristics, such as status of development in KT (e.g., beginning stage) and strategic approaches towards KT (e.g., capacity building strategy) within an institution in general. Specifically, each stage has its own characteristics such as stakeholders will need to ask “why” or “where” they are before their acceptance or kick-start of KT (i.e., beginning stage); next, they want to “know how” to enhance the effectiveness of KT (e.g., developing stage); and finally, they are matured enough to have the experience to “know what” they implement to actualise the missions of KT (e.g., maturing stage). However, KT development does not just end with the maturing stage as the linear model does. As KT always involves interactions and collaborations amongst multiple stakeholders, in particular, of the HEI-Industry, it is not surprising for the development beyond KT, such as strategic alliances amongst HEIs and corporations and collaborations on different areas other than knowledge transfer, as, in view of the existence and/or potential mutual and reciprocal benefits.

KT development would be formalised or institutionalised to the extent of entering into a cyclic stage of development. This encompasses stages of remaining static (e.g., lack of creativity without strategic changes), becomes a dilemma (e.g., centralisation versus decentralisation of KT; academic autonomy versus social responsibilities), enters reflection (e.g., reflect for changes), derives new perspectives (e.g., creative knowledge approach), and re-formalised (e.g., new pattern of collaboration) in a development cycle.

Basically, the creation and transfer of knowledge are embedded in a strategic formulation and implementation structure whereby the LTC model can be classified as a “developmental process based model”. It focuses to identify stages of KT development and explain KT strategies’ derivation from the process of development within the context of institution, inter alia the simultaneous process of

interaction and/or collaboration with multiple stakeholders (e.g., academia or community stakeholders) within and outside the university community. The level of enquiry is at the institutional level and the KT formulation, dissemination and implementation processes within the institution (i.e., sub-system of the entire higher education sector).



Chapter 4

Multiple-Case Study – Methodological Guiding Framework

In this multiple-case study research, methodological guiding frameworks were considered spontaneously after and even simultaneously with, the illustration and adoption of theoretical guiding frameworks facilitating for the implementation of data collection and analyses for deriving findings, conclusions and implications.

4.1 Research Design

In order to investigate the facts and situations and establish an empirical reference-based within the linear and cyclical process of formulation, dissemination and implementation of knowledge transfer strategies in the institutional context of the HE sector, particularly the three selected publicly-funded institutions, I took the scope, targets and logical sequence of the study into advance consideration. I briefly made reference from the adapted theoretical and methodological guiding frameworks in the section “Introduction”.

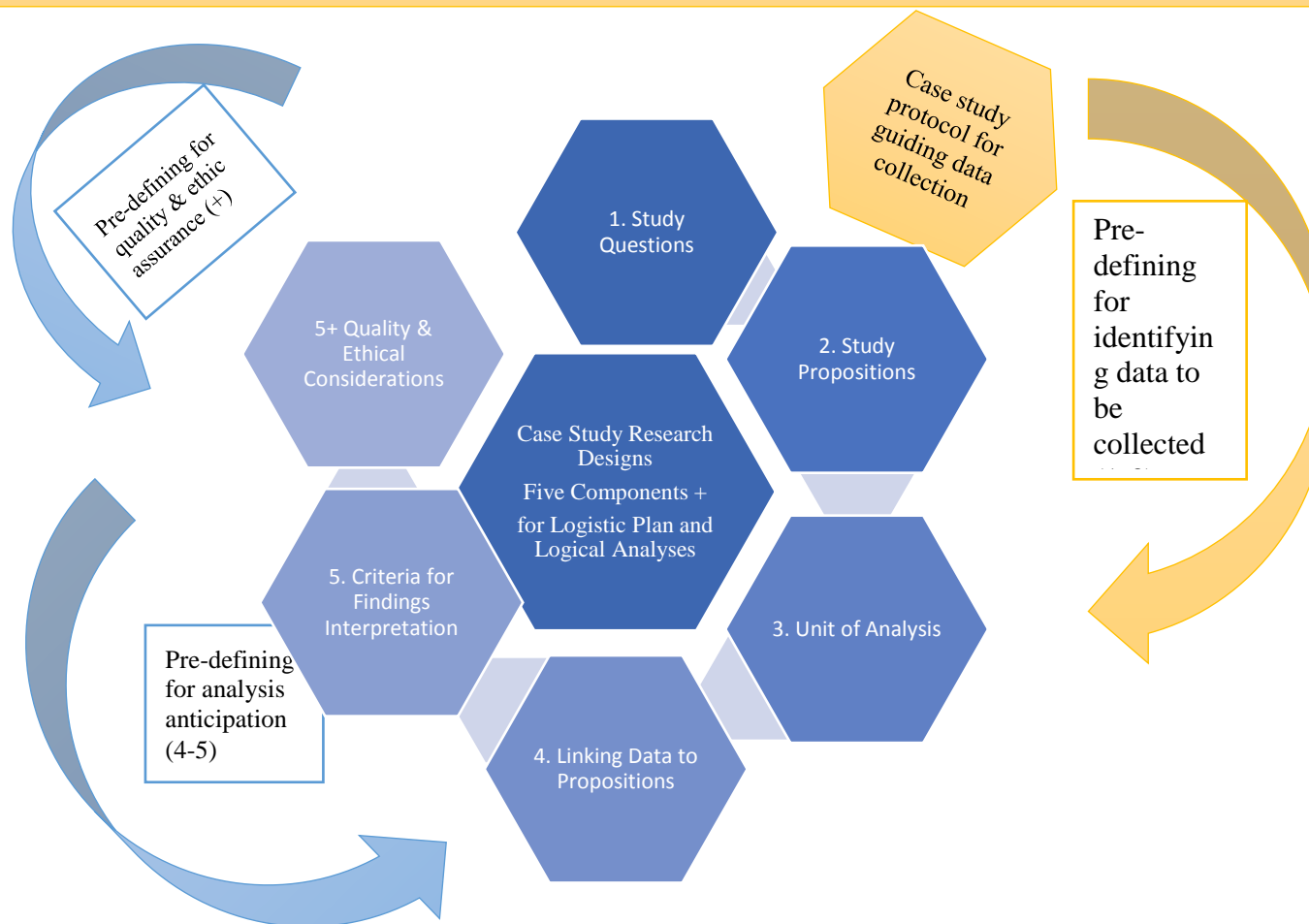
As defined by Yin, the case study research design is “the logical sequence that connects the empirical data to a study’s initial research questions and, ultimately, to its conclusions”, in which it is dealing with a “logical problem” instead of a “logistical problem” (2014, pp. 28-29). Notwithstanding that the ultimate goal of a research design is to address the initial research questions, I agree with the definition of “blueprint” (Philliber, Schwab, & Samsloss, 1980 in Yin, 2014) or work plan with logistic requirements in dealing with the research questions, data collection and analyses. Both the means – the logistic plans and procedures, and the ends – the logical analysis process and findings interpretation are essential for complementing each other in order to assure the quality of qualitative research, in particular, of its construct and external validity as well as the reliability derived from the research design.

Yin (2014) suggested five components are essential for the research design in case study

research, namely as “study questions, study propositions, unit of analysis, linking data to propositions and criteria for findings’ interpretation” (p. 29). In addition, I added one component, namely “quality and ethical considerations” (Yin, 2014, Chapter 2 & 6), into the methodological framework and process of research design in my case study research. I felt that the issues of quality and ethical assurance should be taken during the stage of case study research design into consideration so as to facilitate the process of linking with data collection and analysis strategy. Quality assurance, such as reliability, construct and external validity, and ethical considerations, such as case identity and anonymity strategy, should be part of the research design, especially when they are actually linking with the tactics of data collection and analysis at large.

Figure 4.1 was constructed to demonstrate my conceptualisation of multiple-case study research designs facilitating for the implementation of research through data collection and analyses for concluding the findings, generalisations and replications from the study. Besides, I elaborated on the original five components of research designs as suggested by Yin (2014) for this study while I added one component, in which some of the components are commensurate with the adapted and guiding frameworks of Bray and Thomas’ (2007) Cube, Adamson and Morris’ (2007) framework and the adapted process of the thematic qualitative text analysis.

A. Logistic plans and procedures for research implementation and data collection



B. Logical analysis process and findings interpretation

Figure 4.1. Schematic Diagram of the Six Components of Research Designs for the Multiple-case Study Research (adapted from Yin's (2014) Approach of Case Study Designs linking with data collection and analysis strategy).



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4.1.1 Components of research designs for the multiple-case study research. Regarding the research design, five components are suggested as essential for case study research (Yin, 2014) while I added one extra component as an adaptation to Yin's approach. One is the "how type" research question and questions relevant to studying areas of "known what" are the development process of knowledge transfer, particularly in both descriptive and exploratory phase of investigation (i.e., the study questions). The other is the research proposition closely related to the question of "are there notable differences between strategies formulation, dissemination and implementation amongst three HEIs"

The differences, if any, are indeed embedded with different conceptual understandings of knowledge transfer amongst various agencies of KT at different strategic levels resulting in different interpretations on respective HEI's strategy formulation, dissemination and implementation (i.e., the study propositions). In regard to distinguish similarities, differences and individual characteristics, I adapted and used Adamson and Morris' framework (2007) guiding the research design for the collection of data through the consolidation of aspects of comparison, their manifestations and methods to collect relevant data (i.e., Table 3.1). This linked the ways to identify and collect necessary data in relation to the case study research. Apart from that, I also adopted the data collection strategy of case study protocol guiding data identification and collection in a standardized procedure and line of inquiry.

According to Yin (2014, pp. 31-33), the third component of case study research design is "defining and bounding the "case" to be studied", namely as the unit or sub-units of analysis. With reference to the Cube (Bray et al. 2007, pp. 8-10), one of the units in relation to the KT strategies is adhered to the institution level (i.e., *locational levels*) in which HEIs are the principal cases for studying. Within the case of HEIs, KT strategies are the *aspects of education and of society* at large, focusing on the various agencies (i.e., *non-locational demographic groups*) at different levels of KT

strategies (i.e., formulation, dissemination and implementation) (Bray et al., 2007, pp. 8-10). In the case study context, KT strategies and various agencies can be defined as the sub-units of analyses. The agencies here could be the academic departments or research centres of the study cases and/or representatives at the management and administration level of the selected institutions.

Yin (2014) suggested as the fourth component of case study research design “linking data to propositions” from which data analysis strategy and technique should be decided in advance so as to facilitate relevant and consolidated data collection process for its application at the analytical stage (p. 35). This case study research design was organised “according to a descriptive framework” (Yin 2014, p. 139) in terms of chapters describing the following case study related issues. These were: 1) background of knowledge transfer in Hong Kong and within the institution-case’s context; 2) formulation of KT strategy; 3) dissemination of KT strategy; 4) implementation of KT strategy; 5) evaluation of KT strategy by staff representatives (i.e., interviewees), including their own definitions of KT as well as their interpretations of the KT objectives and strategies. The “descriptive framework” is one of the general analytical strategies suggested by Yin (2014) for the case study design wherein, it aligns with the in-depth descriptive nature of this research, particularly in filling the gaps of “known what” the knowledge transfer development process in Hong Kong HEIs was by addressing the down-to-earth issues of KT implementation and the associated strategies.

In respect of Yin’s (2014) case study research design principle of “linking data to propositions”, analytical strategies were adopted in advance of the research design stage. Besides, the “descriptive framework” was adopted aligning with the pre-established case study protocol guiding for data collection and case study report, a constructive framework for comparative analysis of KT strategies and the “*purposes and perspectives*” (Adamson & Morris, 2007, p. 316), was established in advance. This guided meaningful comparative and interpretative analysis by the identification of discernible dimensions during the process of data collection and categorisation. Comparative analysis is a key

strategy for linking collected data to address the research questions and the propositions, in which, I further adopted the thematic qualitative text analysis associated with the analytical technique of “cross-case synthesis” (Yin 2014, p.164) and thematic matrix in order to address the issues of multiple-case study analysis and interpretation of the findings.

The fifth component of case study research design is the “*criteria for interpreting a case study’s findings*” (Yin, 2014, p. 36). Meaning “rivals” or “real-life rivals”, like “rival theory and societal rival” (Yin, 2000b), as the criteria to be identified and explained for the purpose of findings’ interpretation. Despite the original research design of multiple-case studies did not involve the analytic strategy and focus to examine the rival explanation, it may have subsequently emerged as one of the criteria for interpreting the findings in the course of data collection and analysis (Yin, 2014).

Regarding the case study research design, I suggested the “quality and ethical considerations” adapted from Yin’s Case Study Research (2014) as the sixth component of my research design. In order to enhance the quality of research, in terms of reliability and validity, I adopted the principles of data collection and employed the case study tactics suggested by Yin (2014, Chapter 2 & 4) prior to the implementation of the research. To ensure reliability, I constructed a case study protocol at the stage of the research proposal to follow through the derived procedures, general rules and protocol questions for executing the logistic and data collection plans. Multiple sources of evidence were collected through e.g., interviews and documentation for compiling a case study database as an “*audit trail*” (Krathwohl, 2009) and for processing “*data triangulation*” (Krathwohl, 2009; Patton, 2002; Yin, 2014) in facilitating cross-referencing and corroborating the evidence and findings so that construct validity and reliability could be established (Yin, 2014).

Strategically speaking, I preferred to include the ethical considerations, such as application for ethical review, case identity and anonymity strategy, well before the research was implemented instead of leaving it to the stage of composing the case study report. **It is crucial to consider the ethical**

procedures and strategy in advance. These included seeking ethical approval from the Human Research Ethics Committee (HREC) (Appendix 4.1) and the protocol for obtaining informed consent and offering alternative options for both the cases (i.e., higher education institution) and individuals (i.e., staff representatives of the institution-case) opting to disclose both identities or, at least, the case and/or those insensitive data. This meant I could encourage both to reveal identities for facilitating constructive comparisons amongst participating institutions and cross-reference in future studies before the interviews. Otherwise, I could, at least, adopt the anonymity strategy with expected difficulties in composing the case study report if consents were not given by the institution-case and interviewees.

4.1.2 Cases selected for the multiple-case study – definition and selection. Being an experienced social worker and education professional for more than twenty years, I was certainly sensitive to the classical definition of case study in which the study of an individual is implied as the principal case. Nevertheless, there are alternative interpretations of the “case” depending on the definition of the “case” as the unit and/or embedded unit of analysis (Yin, 2014). Whether the “case” is a small group, a local community, an organisation or a specific event, it is necessary to have specific study questions and propositions for defining the unit(s) of analysis so that the broader boundary or scope of study can be eliminated through “*bounding the case*” as in terms of, for example, the study topic, the locality and specific timeframe (Yin, 2014, p. 33).

In brief, this study adhered to the institution level within the context of the HE sector in a society (i.e., *locational levels such as HEIs*), in which KT strategies are the *aspects of education and of society* at large focus on various agencies (i.e., *non-locational demographic groups such as faculties and senior management*) at different levels of KT strategies (i.e., formulation, dissemination and implementation).

To precisely define the study cases, I particularly adhered to the Cube, the main theme of the thesis and its proposed research questions leading to a succinct definition – the Hong Kong HEIs, the

KT strategies, the involved agencies and process, and initial boundary of the study cases. Considering a specific boundary of the study cases is essential. I chose three publicly-funded small size HEIs in Hong Kong facilitating for a multiple-case study design so as to strike a balance between achieving a comparatively and literally compelling presentation of the study cases and the reality of limited resources for a single research investigator to conduct more cases (e.g., 6 to 10 cases) deriving for a “*theoretical replication*” design with compelling support to the research propositions (Yin, 2014, p. 57). Herriott and Firestone (1983) suggest that a robust case study with compelling evidence can be established by conducting multiple-case studies, therefore, also confirmed the reasons behind my choice of selection.

Apart from the decision to select between single-case and multiple-case study design, the rationale for my selection of small size HEIs and the number of three was contemplated with some distinguishable criteria. Of them, they have a certain extent of similarities, such as small-scale operation as in terms of student enrolment, academic and supporting staff, funding and, in particular, of knowledge transfer fund. In general, the operating scale of the three institutions amongst a total of eight publicly-funded HEIs⁶ had a small proportion of below 10% each against the total, while the remaining five had a larger scale for 10% to 20% more. Figures were obtained from the academic years of 2009/10 and 2014/15, of which two academic years corresponded to the commencing year of UGC-KT funding in 2009/10 and the ending year of the 2nd triennium in 2014/15 respectively⁷. Disparately, I consolidated the student enrolment numbers, staff numbers by staff grade and recurrent grants by total and types of funding of the eight institutions in 2014/15. These are shown in Table 4.1 for supporting

⁶ The eight publicly-funded HEIs in Hong Kong, namely City University of Hong Kong (City U), Hong Kong Baptist University (HKBU), Lingnan University (LU), The Chinese University of Hong Kong (CUHK), The Hong Kong Institute of Education (renamed as EdUHK*), The Hong Kong Polytechnic University (Poly U), The Hong Kong University of Science and Technology (HKUST), and The University of Hong Kong (HKU), are under the government fund subvention, in which the funding is administrated by the University Grants Committee (UGC).

⁷ The latest available figures of the recurrent grants for UGC-funded institutions provided on web are published in 2014 for the year of 2013/14.

the defined criteria of small size publicly-funded HEIs and the selection of three, instead of a number other than three, by providing the factual figures retrieved from the webpages of the University Grants Committee (UGC) in Hong Kong.



Table 4.1

Consolidated Figures on Student Enrolment, Staff Numbers and Recurrent Grants for UGC-funded Institutions for 2014/15

Number	HEI	LU	EdUHK*	HKBU	HKUST	City U	Poly U	CUHK	HKU	Total
Enrolled Student		2614	8661	7174	10229	13725	17363	19306	18511	97583
% against total		3%	9%	7%	10%	14%	18%	20%	19%	100%
Staff by Grade (All)		282	818	940	1613	2417	2393	2894	2956	14313
% against total		2%	6%	7%	11%	17%	17%	20%	21%	100%
Senior Academic Staff		54	102	114	296	341	436	268	316	1927
Junior Academic Staff		105	239	234	212	452	501	765	721	3229
Academic Supporting Staff		59	187	210	330	413	424	526	437	2586
Administrative, Technical and Other Staff		54	149	184	507	893	685	1159	1263	4894
Technical Research Staff		10	141	198	268	318	347	176	219	1677
Recurrent Grants in Total (in million)		404.3	719.6	1036	2152.5	2064.5	2646.8	4006	4047.5	17077.2
% against total		2%	4%	6%	13%	12%	15%	23%	24%	100%
By Selected Type of Grants										
RGC Earmarked Research Grants		3.7	19.1	50.6	130.5	108.2	113.2	183.3	223.2	831.8
% against total		0.4%	2.3%	6.1%	15.7%	13.0%	13.6%	22.0%	26.8%	100%
Grants for Knowledge Transfer Activities		1.1	1.5	2.9	7.5	6.2	7.3	14	12.2	52.7
% against total		2%	3%	6%	14%	12%	14%	27%	23%	100%

Sources: University Grants Committee (UGC, 2015, 2017).



With regard to other criteria, the chosen HEIs are analogous in their founding period, scope of curricula and type of academic programmes in general and in UGC's broad statistical category of academic departments, despite the number of schools specialised in different subjects in HKBU seemed to be comparatively more than the other two institutions. In fact, they all have three faculties with a total of 18 departments and unit/centres with the exception of HKBU having a different categorisation of five departments which are under three Schools and one Academy. With reference to Biglan's (1973) classification of academic disciplines, their academic programmes embedded with the departments/schools are more soft-applied and soft-pure in general. In order to visualise the commonalities amongst the three institutions, I constructed Table 4.2 to manifest the aforementioned criteria. In addition, these institutions were selected as cases with regard to the initial nature of investigation and exploration, whereas, the complexity of knowledge transfer establishment in these small size institutions were presumably less complicated in terms of comparatively limited resources and scope of academic-administrative units. Furthermore, there has been a similar strategic focus on non-technology aspects of knowledge transfer, such as tacit knowledge deriving from social sciences, arts and humanities areas, instead of the so-called technology transfer as the prevailing strategy by other HEIs in Hong Kong (e.g., CityU, HKUST, PolyU, HKU and CUHK).

Table 4.2

Academic units of the Three Institution Cases Offering Different Types of Curriculums Embedded with a Variety of Academic Programmes with Different Degree Levels

HKBU	EdUHK	LU
Faculty of Arts (includes 5 departments & 1 Centre)	Faculty of Liberal Arts and Social Sciences (includes 6 departments & 1 Unit)	Faculty of Arts (includes 7 departments & 2 Centres)
Faculty of Science	Faculty of Education and Human Development (includes 6 departments)	Faculty of Business (includes 5 departments)
Faculty of Social Sciences (includes 7 departments)	Faculty of Humanities (includes 5 departments)	Faculty of Social Sciences (includes 4 departments)
Graduate School	Graduate School	
Academy of Visual Arts		
School of Business (includes 5 departments)		
School of Chinese Medicine		
School of Communication		
3 Faculties with 12 Departments & 1 Centre 1 GS 3 Schools & 1 Academy with 5 Departments	3 Faculties with 17 Departments & 1 Unit 1 GS	3 Faculties with 16 Departments & 2 Centres

Sources: HKBU (2016e); EdUHK (n.d.d), LU (2016e).

Based on the above circumstances, I subsequently selected the three publicly-funded HEIs, namely Hong Kong Baptist University, The Education University of Hong Kong (EdUHK, 2016, June)⁸ and Lingnan University, as the study cases. They were selected to investigate the extant KT strategies adopted and implemented by the HEIs for deriving an overall understanding of KT strategy development and the differences, similarities and individual characteristics of KT strategies in the HE sector. As Yin suggests “a case study allows investigators to focus on a “case” and retain a holistic and real-world perspective” (2014, p. 4). It was envisaged that the in-depth case study with its multiple-case descriptive and comparative analysis may provide rich data evidences for informing the pattern and development of KT strategy in the higher education sector, whereas, the case study in Hong Kong

⁸ According to the updated news and status of HKIEd on 19 May 2016, the Legislative Council of the HKSAR passed the HKIEd (Amendment) Bill 2016 represents the legislative approval for the retitling of The Hong Kong Institute of Education (HKIEd) into The Education University of Hong Kong (EdUHK, 2016b)

provided a reference example of generalisation in a similar context of other HEIs in the world.

4.1.3 Logical linking of research questions to the collected data. In the paragraphs of “components of research designs”, I share with Yin’s (2014) the research design principle of “linking data to propositions” as foreshadowing steps of the adoption of data analysis strategies in advance, thus, paving a concreted groundwork for logical linking of research questions to the collected data and analyses at a later stage. Referring back to the research questions, i.e., what were the adopted KT strategies and how to disseminate and implement the KT strategies more descriptive in nature, a general analytic strategy of “descriptive framework” was adopted aligning with the pre-established case study protocol guiding for data collection and case study report. Yin states that “*the descriptive approach used to identify an overall pattern of complexity*” (2014, p. 140) whereby the collected descriptive data from the study cases were itemised (i.e., with the guidance of the case study protocol), categorised (i.e., coded categories and sub-categories), tabulated (i.e., by means of qualitative and quantitative), and synthesised (i.e., cross-case comparison) for comparative analysis. With the advanced adoption of analytical strategies, I could further answer the research questions of the differences, similarities and individual characteristics of KT strategies as well as notable differences between the processes of strategy formulation, dissemination and implementation amongst the three HEIs.

Fundamentally, different conceptual understandings of knowledge transfer may result with different interpretations on its strategy formulation, dissemination and implementation by various agencies (i.e., management and administrator of the institution). In addition, proposition of knowledge transfer development process views from a Linear-to-Cyclic (LTC) Model Perspective (Chung, 2013) emerged, which emphasised the developmental stages of knowledge transfer, in particular, of HEIs. By identifying the characteristics and patterns of KT strategy development of the study cases across a 6-year spectrum of KT development under the UGC’s KT recurrent funding initiatives, logical linking of the qualitative data manifested in thematic categories with different intensities helped identify stages of

KT development and understand KT strategies' derivation from the development perspective within the context of institution.

4.1.4 Criteria for finding interpretation. The preliminary process of linking research questions to the collected data in a logical way of thinking and connection, helped to derive some analytical strategies in advance. These analytical strategies were the *descriptive framework* for in-depth case study, heuristic framework for comparative analysis, Adamson and Morris' framework for meaningful comparative and interpretative analysis, and the thematic qualitative text analysis for *cross-case synthesis* and thematic matrix interpretation. Strategically, they became the guiding frameworks for organising and manipulating the collected case study data through the following analytic direction and process for -

1. the creation of itemised sections for the case description analysis;
2. the reconstruction of the 6W-elements of the heuristic approach and tabulation for the discernible dimensions under Adamson and Morris's framework for comparative and interpretative analysis; and
3. the derivation of tables, diagrams and/or figures with thematic categories and sub-categories from the thematic qualitative text analysis process for *cross-case synthesis* and thematic matrix interpretation.

These strategic analytical frameworks guided me through a systematic process of analyses and to establish a set of criteria for findings organisation and interpretation. One set of criteria was the 6W-elements of the heuristic approach, immersed with the itemised sections for the case description analysis at both the institution-based (i.e., policy) and academia-based (i.e., implementation) level. Illustrative examples are presented in Tables 4.17 and 4.18 in the sub-section of 'Heuristic Framework for Data Presentation and Comparative Analysis' under the 'Analysis Methods' Section. **To restate, this converged analytical framework was designed to address RQ3 and RQ4 from a descriptive analysis approach. This approach was immersed of the analysing technique of deconstructing the formulated**

and implemented KTS from the textual evidences with reference to the 6W-elements of the Heuristic Approach. After deconstruction for individual cases, a reconstructing technique was employed by interpretation and comparison of the aggregated findings of the three cases in terms of ‘differences, similarities and individual characteristics of KT strategies’ (RQ3) and of ‘notable differences’ in ‘why (i.e., rationale of KT)’, ‘in what ways (i.e., core KTS), ‘what to be transferred (i.e., KT areas)’, and ‘to/with whom and by whom (i.e., internal/external stakeholders)’ (RQ4).

The other set of criteria was derived from Adamson and Morris’ framework for comparative and interpretative analysis. My case study research emphasised the interpretation of findings by comparative analysis amongst three discernible dimensions of the study cases, namely as purposes and perspectives of KT (e.g., conceptual understandings and interpretations of KT), aspects of KT strategy in focus (e.g., process dimension of KT strategy formulation) and their typical manifestations (e.g., KT reports/webpages). For *interpretive* purposes, the ‘notable differences’ of RQ4 were identified and analysed as in terms of differences in the developmental stages of knowledge transfer of the three study cases, particularly based on the conceptual framework of the Linear-to-Cyclic (LTC) Model Perspective (Chung, 2013). In addition, the ‘notable differences’ were identified and analysed as in terms of differences in ‘KTS conceptualisation and interpretation’ amongst the institution, the management and administration/implementation side of the three cases.

The last set of criteria was aligned with the creation of the thematic categories, sub-categories and associated category-based or case-related thematic summaries from the thematic qualitative text analysis process. Illustrative examples are presented in Tables 4.5, 4.12 and 4.14 for thematic categories and sub-categories respectively, while the format and approach for developing different types of summaries are set out in Tables 4.20, 4.22 and 4.23. This analytical framework facilitated the analysis and interpretation process through the construction of thematic categories, sub-categories, thematic category-based summaries, case-related thematic summaries, and thematic category-based

overviews from the collected case study data and subsequent application of analytical techniques of the thematic-based analysis (Yin, 2014). These were achieved through thematic matrix interpretations and cross-case synthesis through findings aggregations (Yin, 2014). Regarding the thematic-based analysis, it was basically designed to address RQ1 and RQ2, especially after the thematic sub-categories of KTS were coded and analysed as the basis of individual cases. In addition, the coded thematic sub-categories derived from the empirical data of individual cases were established with illustrative figures in which, the sub-categories denoted with different degrees of code frequency were interpreted for establishing ‘differences, similarities and individual characteristics of KT strategies’ amongst three cases (RQ3). Through interpretation and comparative analysis, the three aforementioned aspects embedded in RQ3 were analysed from stage and pattern development perspectives. For the cross-case synthesis, it was naturally inclined to address RQ3 and RQ4 with regard to analysing the aggregated findings (e.g., case-related thematic summaries and thematic category-based summaries) derived from the construction of varying types of thematic matrixes. The ‘notable differences’ in RQ4 were identified and analysed from the context of aggregated findings, that is, the summaries in relation to strategy formulation, dissemination and implementation.

4.1.5 Consideration of study quality. Apart from Yin’s five components of research designs as one of the guiding frameworks, I adapted it by adding one extra component from Yin’s (2014) case study research methodology, namely “quality and ethical considerations”, to pre-define quality and ethic assurance well in advance to facilitate data collection and analysis strategy. Quality assurance, such as reliability, construct and external validity, and ethical considerations, such as case identity and anonymity strategy, should be part of the research design.

According to Yin (2014), there are some identified case study tactics applied in four logical tests to determine the quality of case study research and its designs by the judging criteria, including tactics employed in the different stages of case study research and associated tests. Among the logical tests,

four are commonly applied to align with the usual tactics such as data collection from “multiple sources of evidence” for “construct validity”, “explanation building” for “internal validity”, “use replication logic in multiple-case studies” for “external validity”, and “use case study protocol” for “reliability” (p. 45).

One might argue the terminologies of “validity” and “reliability” are more common and appropriate for justifying the quality of quantitative research, whereas, others prefer to apply the terms such as credibility, transferability, dependability and confirmability (Lincoln & Guba, 1985; Krathwohl, 2009) or trustworthiness, credibility, confirmability and data dependability (U.S. Government Accountability Office, 1990 in Yin, 2014) for qualitative research. I agree with Yin’s application of these two key terms of “validity” and “reliability” as quality tests for case study research. In fact, I support using these terms with regard to their commonality in understanding and implying quality of any empirical research, especially when Yin (2014) identified several essential quality test-related tactics and suitably extended the two key terms into “construct validity”, “internal validity”, “external validity”, and “reliability” respectively in association with the tactics for case study research (p. 45).

Referring to the objectives and research questions set out in the second section of this methodology chapter, I neither intentionally found out casual relationships between KT strategies (e.g., incentive strategy) and knowledge transfer related consequences (e.g., active participation of academia in KT) nor had certain kinds of explanation building. Henceforth, “internal validity” was probably not the original and ultimate purpose of my research, particularly when it is more “descriptive” and to some extent “explorative” in nature instead of explanatory case studies (Yin, 2014). Nevertheless, with reference to Yin’s (2014) suggestion of using a “pattern matching” tactic for “internal validity” (p. 45), a ‘matched pattern’ may have emerged if the ‘predicted differences’ between strategy formulation, dissemination and implementation (SFDI) amongst the three HEIs were aligned with my initial study

proposition of ‘the differences, if any, are indeed embedded with different conceptual understandings of knowledge transfer amongst various agencies of KT at different strategic levels resulting in different interpretations on respective HEI’s strategy formulation, dissemination and implementation’.

Alternatively, quality assurance of this study can further be enhanced through the tactic of “replication logic in multiple-case studies” (Yin, 2014, p. 45) of which cases were chosen with similar backgrounds while differences in SFDI amongst the three cases predicted according to the study proposition previously mentioned. Subsequently, the use of replication logic tactic conformed to Yin’s suggestion of “external validity” in which “the findings from a case study can be analytically generalized” (2014, p. 238) in qualitative research.

Essentially, the six components of the research design were adopted as a guiding framework deriving for logistic plans and logical analysis process for the case study research whereby data collection and analysis strategy were inter-linked. Through practical guidance from the pre-established case study protocol for data collection and case study report, logistic procedures of systematic data collection and logical process of a step-by-step analysis within the *descriptive framework* were established to the extent that, the study quality including reliability, construct and external validity could be assured. Quality assurance was considered in terms of procedural consistency with repeatable possibility (i.e., reliability), measurement accuracy with triangulated evidence (i.e., construct validity), and “*analytic generalization*” through analysis replication from the *descriptive framework* for the three cases (Yin, 2014, pp. 237-238).

4.2 Roles of Principal Researcher and Institution Participants

Being the principal and sole researcher of this research, I was responsible for the preferable construction of both the logistic plans and logical analyses well in advance for dealing with the research questions, data collection and analyses so as to facilitate the ultimate process of finalising the findings with the manifestation of my thesis. [In addition, I needed to take research ethics and quality](#)

into consideration. I undertook the procedures of seeking ethical approval from the HREC of EdUHK and consent from the participating institutions and interviewees for their permission to conduct the research with revealed identities and of verifying the ‘summaries’ of the interview transcripts under the main thematic category by the respective interviewees. Logistic research processes were conducted through the provision of a ‘Consent Form and Information Sheet of Institution and Participants’ before the interviews so that they were well-informed with a brief outline of the research and their right to privacy by giving consents to participate as well as reveal identities or not (sample template and details in Appendix 4.2). Besides, part of the logical analysis process was implemented through the ‘summary verification procedure’ by the interviewees whereby, emails with the derivation process of the ‘summary’ and draft summaries of the interview transcripts were sent to respective interviewees facilitating interpretation assurance and quality enhancement. The interviewees participated in one to one-and-a-half-hour individual interviews with the principal researcher at respective offices of the institutions with a verification process of the draft ‘summary’ with confirmation and/or supplementary information on paraphrased content and interpretation of the summary transcript. They were initially required to verify the full transcription of their respective interview. Nevertheless, the strategy of verification was changed as I considered it more constructive verifying the summarised transcripts with interpretive format instead of the full transcripts in verbatim format. The overall schedule of interview, transcription and ‘summary’ verification are summarised as follows:

Table 4.3

Schedules of Interview, Transcription and Summary Verification

Date of Schedule Completion	Completion of Scheduled Activity	Target involved
June 2015	Invitation for interviews	Head of institutions
June 2015	Implementation of interviews	Two participants from EdUHK
August 2015	Implementation of interviews	Five participants from HKBU and LU
July to October 2015	Completion of verbatim transcripts	Principal researcher
October to December 2015	Completion of draft ‘summary’ of the interview transcripts	Principal researcher
December 2015	Invitation for ‘summary’ verification	Seven participants of the institutions
December 2015 to January 2016	‘Summary’ verified, confirmed and not yet confirmed	Interviewees of the institutions

4.3 Ethical Considerations and the Strategy of Case Identities

Inclusion of the ethical procedure and strategy by methods of informed consent and alternative options for case identity were adopted before the interviews so that flexibility to change became viable under prediction. Consequently, three out of seven interviewees requested their identities kept anonymous in terms of name and position while all agreed to reveal their affiliated institutions for the sake of comparison in the research study. Subsequently, I adopted the anonymous policy for all interviewees to maintain consistency while their affiliated institutions were revealed for preserving the value of research through comparative analysis. Anonymous codes were designed with the rule of ‘M’ equals to interviewee from the management side and ‘A’ from the administration/implementation side. Interviewees were then assigned with reference from alphabetical order of the three institutions and their obvious role within their institutions as follows: HKBU M1 and HKBU A1; EdUHK M2 and EdUHK A2; LU M3, LU A3 and LU A4.

4.4 The Case Study Protocol

In order to enhance the *reliability* of case study research, a protocol, which “is a system of rules about the correct way to act in formal situations” (Collins COBULD 2012, p. 1247), was adapted from

Yin's illustrative case study protocol to derive procedures and general rules to follow for executing the data collection from various sources of evidence, such as interviews and documentation, from a single case in a multiple-case study (2014, pp. 84-94). The protocol was divided into four major parts, namely as A) Overview of the Case Study; B) Data Collection Procedures; C) Data Collection Questions (i.e., protocol questions); and D) Guide for the Case Study Report, and was pre-established for guiding data collection as well as case study report (Appendix 4.3).

Yin (2014) suggests that as an initial profile, the reporting format and compositional structure of the case study report should become "part of the case study protocol" so as to "facilitate both the design and the conduct of the case study" in advance (p. 187) as well as to list out "documentation for the case study report" forming "an important part of the "database" for the case study" (p. 94) and its future reference for any relevant inquiries. In this regard, the reporting format of "multiple-case study" was initially adopted whereby the study report would "consist of the single cases" presented in separate chapters covering "cross-case analysis" and comparative results (Yin, 2014, p. 184). In addition, a common and standard approach of "linear-analytic structure" was adopted for composing the research report (Yin, 2014, p. 188) and outlining in the protocol.

Essentially, with reference to Yin's illustrative case study protocol (2014), a set of substantive questions was essential to the process of case study. Relevant data were collected through "questions asked of specific interviewees" as well as "questions asked of the individual case" posing to the researcher, which Yin distinguishes as "level 1 and level 2 questions" that "each question should be accompanied by a list of likely sources of evidence" and the rationale behind the questions asked (pp. 89-90). Indeed, the protocol questions were used to "serve as prompts in asking" interviewee's questions (i.e., level 1 questions) manifested in the Interview Schedule (Appendix 4.4) and "form the structure of the inquiry" (i.e., level 2 questions at Part C of Appendix 4.3) so as to keep the progress of data collection (Yin, 2014, p. 90) and facilitate the case study report.

Reiterating that a set of 42 substantive questions (i.e., protocol questions) were derived in tandem with the four research questions in advance from which, the protocol questions were divided into six related sections (e.g., overview and brief background) aligning with the “descriptive framework” (Part C of Appendix 4.3). The protocol, represented the “*mental agenda*” (Yin, 2014, p. 240) of the researcher was used to guide and address the protocol questions (e.g., background of KT policy in Hong Kong, particularly in the higher education sector; what is the definition of KT in general and specific) facilitated for data collection and reporting for the study cases.

4.5 Data Collected and Processed.

4.5.1 List of sources of data collected with different degree of importance. Aligning with the case study tactic of “using multiple sources of evidence and establishing chain of evidence” (Yin, 2014, p. 45) to assure accuracy of measuring the concept of KTS in its formulation, dissemination and implementation process, the sources of evidence were constituted to equal prominence under the principle and practice of maintaining connections between different sources of evidence and “developing convergent evidence” (Yin, 2014, p. 121). That means no single source of evidence could produce corroborated findings without the evidence converging and linking process with regard to the research questions. Nevertheless, for the sake of reviewing and citing priority of the multiple sources of evidence, at least amongst the documents imported into MAXQDA12, there was a certain degree of importance as follows: interview transcripts, KT annual reports, institutional strategic plans, KT related website information of the institution concerned, institutional annual reports, and literature review references.

4.5.2 Emphasis on how the data provided an up-close and in-depth coverage of the cases.

With regard to the data collected from the above mentioned list of sources, there were different emphases derived from different sources of collected data for covering the three study cases with up-close and in-depth information in order to address the research questions through the data presentation

and analysis process. Data collected from the seven interviews provided up-to-date and firsthand information as well as management/administrative perspectives on the topic of knowledge transfer, particular the KT strategies (please refer to the attached CD on page 380 contained with Appendices 3.5 to 3.11 of the summary transcripts). While the KT related websites of the institutions also provided simultaneous up-to-date and historical information; the data contained in the 6-year KT reports of respective institutions delivered in-depth provision of information on KTS covering the study cases with breadth and depth. These data were further triangulated between data collected from the interviewees so that the coverage were broadened and deepened whereby, both up-close and in-depth evidence and findings of the case study research were corroborated for coverage of the case analyses. Regarding the relevant data collected from the institutional strategic plans and annual reports, they became supplementary information and/or evidence to strengthen the already established up-close and in-depth coverage of the cases. Besides, the implementation process of comparative and interpretative analysis, and thematic qualitative text analysis for thematic matrix interpretation and *cross-case synthesis* essentially facilitated up-close and in-depth coverage of the cases to the extent of addressing the research questions (Yin, 2014, pp. 191-192).

4.6 Research Framework and Data Verification

Regarding the research framework, apart from the need to conduct the case study research in a rigorous procedure as well as reinforce *construct validity*, it was necessary to bring up the research framework by going through the process of verification-modification cycle, particularly when the literature review was thoroughly processed and research questions derived.

Besides, the collected data also needed to be verified for the enhancement of *credibility* of the research of which both primary and secondary sources of data, such as summaries of in-depth interviews and KT relevant documents and websites, were verified with illustration in the following sub-sections.

4.6.1 Verification of research framework. Apart from the essential on-going review of my research framework and subsequent thesis draft by my specialised area supervisors, one promising way of research framework verification was expert and/or peer reviews of initial ideas on a research topic, research proposal, and subsequent enhancement framework. The framework under the research proposal was endorsed by a 3-person panel in my specialised area of comparative education in June 2015. These kind of reviews were conducted through a number of channels, including module assignments, conference presentations, official presentation of the thesis proposal, and dissertation workshops. I went through a progressive process of verification-modification cycle of the research framework in which the research proposal was finalised with a consolidated framework guiding the implementation of research. For brief illustration purposes, I have summarised the above mentioned process in Table 4.4 to demonstrate how the construct validity was progressively established.

Table 4.4

Progressive Process of Verification-Modification Cycle of the Research Framework

Date	Verification Channel	Type of Review
July 2013	Presentation of initial ideas in Summer Conference	Expert and peer review
October 2013	Module assignment -modification of initial ideas	Expert review
February 2014	Presented the modified initial ideas in the Comparative Education Society of Hong Kong's (CESHK) Annual Conference	Expert and peer review
May 2014	Submission of assignment under the module of 'Units of Analysis of Comparative Education Research'	Expert review
August 2014	Acceptance of a journal article by the International Journal of Comparative Education and Development (IJCED) after substantial revisions	Expert review
April 2015	Participation in International Outreach Study Programme (IOSP) in Germany for sharing of my initial thesis proposal in a workshop group of EdD/PhD students from EdUHK and Leuphana University	Peer review
June 2015	Official approval of my thesis proposal with comments raised by the panel members.	Expert cum official review
March 2016	Participation in the 2016 New Scholar Dissertation Mentoring Workshop in the 60 th Conference of the Comparative and International Education Society (CIES) held in Vancouver.	Expert and peer review

Date	Verification Channel	Type of Review
March 2016	Verification of the enhanced framework and preliminary data analysis of my thesis through paper presentation in the CIES 60 th Conference.	Expert and peer review
April 2016	Presentation of preliminary research findings in the CESHK Annual Conference	Expert and peer review
March 2017	Presentation of methodology and multiple-analysis methods	Expert and peer review

4.6.2 Primary source of data – in-depth interview. Original data were collected through interviews from the seven staff representatives. The interviews were conducted in Cantonese and audio-recorded. Collected data were then transcribed Chinese verbatim (transcript) format aimed at preserving originality to the fullest extent. These completed sets of interview transcripts were imported into the system of computer-assisted qualitative data analysis software (hereafter as CAQDAS) for coding. Before the transcripts were coded at the initial stage, a total of 15 main thematic categories in Table 4.5, such as planned and adopted knowledge transfer strategies and ways to disseminate and implement KT strategies, were deductively derived from the first two research questions and 13 semi-structured questions of the research interview schedule (for details, please refer to Appendix 4.4). The first coding process was conducted on the interview transcripts, with reference to the pre-established main thematic categories, by reading, interpreting and assigning relevant text passages in the transcripts with specific thematic category. The completed coding were compiled in the form of coded segments (i.e., coded text passages) under each main thematic category. A subsequent process to read, interpret, and paraphrase the compiled coded segments and summarise them into a set of "summary in English" under each main thematic category for respective interviewee was completed. The "summary" was sent to respective interviewees for verification in terms of the content, paraphrasing and/or interpreted meanings, and the relevance of the assigned summary to a specific thematic category (i.e., list No. 1 to 15 contained in the attached "Summary", such as planned and adopted KT strategies).

Table 4.5

List of Main Thematic Categories

Abbreviation	Main Thematic Category	Derived from Research Question (RQ) / Interview protocol - Semi-structured interview question (SSIQ)
ADKTS	Planned and adopted knowledge transfer strategies	RQ1
WKTS	Ways to disseminate and implement KT strategies	RQ2
KTIC	KT in the context of institution	Interview protocol - SSIQ 1.1
KTbfIP	Situation before KT initial proposal	Interview protocol - SSIQ 1.2
ODKT	Own Definition of KT	Interview protocol - SSIQ 2.1a
VIDKT	View on Institution's definition of KT	Interview protocol - SSIQ 2.1b
PKT	Purposes of KT	Interview protocol - SSIQ 2.2
EDF	Essential and decisive factors of KTS	Interview protocol - SSIQ 3.1
RKTS	Rationales of KTS	Interview protocol - SSIQ 3.2a
KTSP	KTS priorities	Interview protocol - SSIQ 3.2b
KTSO	KTS expected outcomes	Interview protocol - SSIQ 3.2c
KTSD	KTS encountered difficulties	Interview protocol - SSIQ 4.1a
HDKTS	Handle difficulties of KTS	Interview protocol - SSIQ 4.1b
KTSSW	KTS strengths and weaknesses	Interview protocol - SSIQ 4.2a
KTSI	KTS improvement	Interview protocol - SSIQ 4.2b

The results of verifications with supplementary information, if any, amongst the interviewees are listed in Table 4.6 for reference and implication on the credibility of the data collected. It was believed that the process of verification could establish a solid foundation in supporting a rigorous procedure of the research for an enhanced credibility of the collected data, particularly in the form of “summary” with the elements of paraphrasing and interpretation by the researcher. To reiterate, the ‘summary verification procedure’ by the interviewees aimed to minimise subjectivity derived from the sole researcher’s paraphrased and interpreted summaries of the interview transcripts in a relatively objective process (see Figure 4.2). Triangulation with other relevant sources of data was applied after the verification process. Furthermore, there have been two requests for revision while I have clarified

them through table illustration (see Table 4.6) and minimised impacts by the standardised verification process.

Table 4.6

Verification Results Among the Interviewees

Institution	HKBU		EdUHK		LU		
Interviewee	M1	A1	M2	A2	M3	A3	A4
Verification Results	X	✓+	✓	X	✓	✓	✓+

✓ = Verified and confirmed

✓+ = Verified and revised with supplementary information

X = Not yet verified

As the process of interpretation may have been embedded with subjectivity (Andrade, 2009 in Adamson & Morris, 2007, p. 319), the collected data and “summaries” were further verified through the process of “triangulation” with other relevant sources of data, such as knowledge transfer reports, KT website, strategic planning and annual reports of respective institution.

The schematic diagram of Figure 4.2 demonstrates the derivation process of the ‘summaries’ so as to facilitate the subsequent step of data verification by respective interviewees. Linkages to different sources of data were drawn up to demonstrate the strategy of “triangulation” linking other sources of data to verify the content of “summaries” in a relatively objective process.

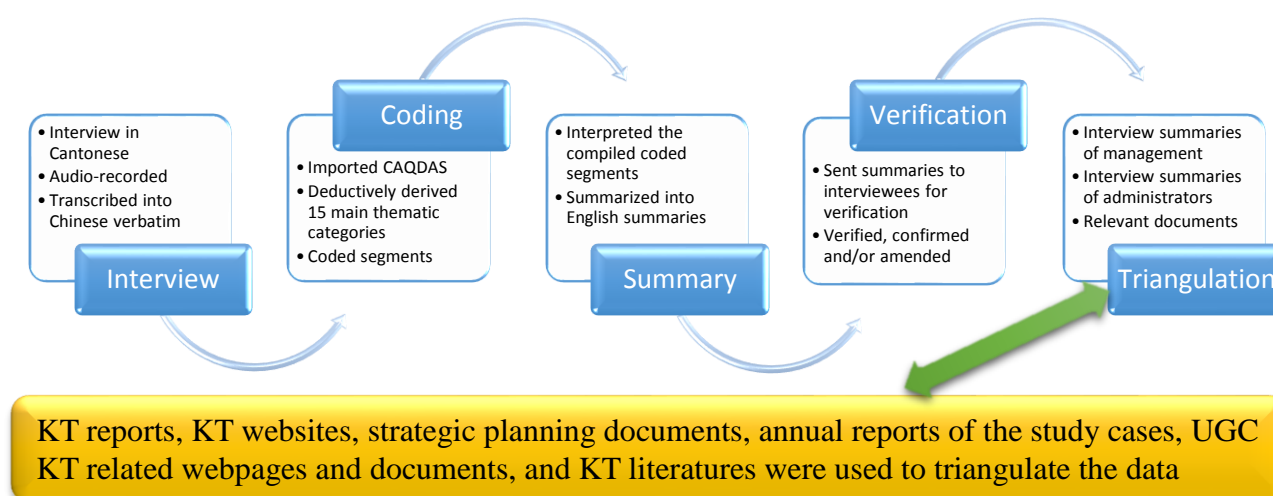


Figure 4.2. Schematic Diagram of the Derivation process of the ‘Summaries’.

4.6.3 Transcription and translation policy of the in-depth interview. In respect of all interviews being conducted in Cantonese, it was essential to preserve the originality to its fullest extent by capturing details through audio-recording with consent from all interviewees. Collected data from the interviews were transcribed Chinese verbatim with grammatical and colloquial touch up format aimed at preserving their origins and avoiding misinterpretations as far as possible. Under these circumstances, I conducted the initial coding by assigning the main thematic categories to all interview transcripts. Coded segments (e.g., relevant text passages that the interviewees had their own views in relation to the themes, say planned and adopted KT strategy) were created for second coding of the sub-categories in respect of the main thematic category (e.g., specific knowledge transfer strategy like "capacity building" to be assigned accordingly). As a result, quite a number of coded segments under each thematic category from each transcript were quoted for producing translated summaries in English (i.e., by means of summarising and paraphrasing what the interviewee had mentioned under each thematic category).

Table 4.7 aims to demonstrate the volumes of the Chinese verbatim transcripts, their associated by-data of coded segments in Chinese and summaries of thematic categories in English so as to address the need to derive a transcription and translation policy of the in -depth interviews facilitating the process of second coding. I decided whether I should translate all Chinese coded segments into English or summarise the coded segments under each thematic category with English for the validation procedure of data verification by respective interviewees before proceeding to the second coding process.

Table 4.7

The Volumes of the Chinese Verbatim Transcripts and the Associated By-Data

Institution	HKBU		EdUHK		LU			Total
Interviewee	M1	A1	M2	A2	M3	A3	A4	
Chinese verbatim transcript								
Number of transcribed words in Chinese	4087	4426	11996	6273	6834	9273	9837	52726
Number of transcribed pages	8	12	16	11	11	15	14	87
Chinese coded segment under main thematic category								
Number of coded segments and	33	31	130	45	52	71	58	420
Number of words	4441	3625	16014	5321	5503	9004	9781	53689
Number of coded segment pages	6	6	19	7	8	12	11	69
English summary of coded segments under main thematic category								
Number of words in English	1599	1392	2978	1644	1818	2716	2013	14160
Number of pages	5	5	8	5	5	7	6	41

The first coding process was conducted with reference to the original Chinese verbatim transcripts, to ensure they were objectively and descriptively transcribed, and for the original meanings of the coded segments to be preserved to their fullest extent. On the other hand, the Chinese coded segments were paraphrased and summarised into English. I dispatched these versions to respective interviewees for verification to ensure accuracy of the summarised wordings and coding. The procedure of data verification are illustrated in the sub-section of “primary source of data – in depth interview”. Besides, it may not have been efficient or practical to send the verbatim transcripts for interviewees' verification since the records and contents should probably be indisputable with the exception of supplementary information provided by respective interviewees. In contrast, the summaries of the coded segments under the main thematic category were processed with paraphrases and interpretations, crucial to be verified from the original sources.

4.6.4 Secondary source of data – KT relevant documents and websites. Relevant KT

documents (e.g., KT reports, annual reports, KT literatures) and websites (e.g., www.kto.hkbu.edu.hk) as secondary sources of data were substantiated by using original and relevant sources of data retrieved electronically from related official websites (e.g., www.ugc.hk), published journals, book references and databases provided by the library of UGC-funded institutions. The sources were more reliable than the process of online cross-checking and be minimised.

Besides, I realised online electronic sources were non-exhaustive and, therefore, I employed a time-frame, systematic review and guided protocol strategy for the collection of secondary sources of data in relation to KT and its strategies. The literature review was conducted by keyword searching through four databases of published articles with criteria such as “peer review”, “full text” articles cited within ten years from 2003 to 2013, relevant to HEIs and community stakeholders. Subsequently, ten articles were selected from over ten thousand published articles forming the fundamental basis for the identification of the research gaps. These articles and the aftermath search of literatures (e.g., KT related theoretical models and KT strategies) supplementary to knowledge transfer strategies were imported in the document system of MAXQDA so that initial coding of the KT strategies and/or related aspects were identified and created step-by-step through specific searching protocols (i.e., auto-coding through a lexical search).

In addition, the highly relevant KT reports were chosen within a time-frame of six years from the academic years of 2009/10 to 2014/15, equivalent to the two triennium period (i.e., 2009/10 to 2011/12 & 2012/13 to 2014/15) of UGC KT funding allocation. Simultaneously, the same period of annual reports and similar coverage of strategic plans of the study cases were used with regard to time coherence and “a chain of evidence” for triangulation and corroboration (Yin, 2014, p. 127).

In fact, my emphasis was to illustrate that the trustworthiness of the secondary data sources were substantiated by the process of systematic review and guided protocol as well as peer reviewed articles and reliable sources of documents (e.g., published articles from SSCI, SAGE, and official websites of the study cases), of which the data sources were already well-verified. As suggested by Yin (2014) a chain of evidence collected and created from multiple sources of data should be maintained for the establishment of a “case study database”, which includes the data and case study report (p. 123), in retrievable form for subsequent inspection, verification and proof of data analysis so as to enhance reliability of the case study. A full array of related documents for the multiple-case study were

imported into CAQDAS, namely as MAXQDA12, facilitating for coding, analysis and retrieving whenever necessary.

4.7 Coding Strategy for Processing Data and Facilitating Analysis

Thematic qualitative text analysis was adopted as one of the analytical strategies of which the analysis process embedded with the needs to construct thematic categories through an inductive and/or deductive method of data coding leading to the progressive step of thematic or category-based analysis (Kuckartz, 2014). By adaptating the thematic qualitative text analysis process (hereafter as TQTAP) suggested by Kuckartz (2014), I employed different coding strategies, either deductively or inductively and interchangeably, at the outset and interim phase of the TQTAP, whereas, it was situational and subject to the nature of collected data versus the strategic needs. The ultimate goals of applying different coding strategies are for data processing and management so as to facilitate thematic-based analysis and cross-case synthesis deriving interpretive findings for “similarities, differences, characteristics, patterns or relationships” (Lewins & Silver 2007, p. 82) amongst the study cases. Lewins and Silver (2007) emphasise that “qualitative coding is an integral part of the analytic process” (p. 82) “by which segments of data are identified as relating to, or being an example of, a more general ideas, instance, theme or category (p. 81).

In respect that coding processes may involve intensive exercise of reading, identifying, interpreting and developing thematic categories from the identified segments of the collected data, bias/misinterpretation may be exist particularly when the whole procedures were taken by a single and/or inexperienced researcher (i.e., a fresh EdD candidate). With a lack of team support and consensus, the coding procedure may become less rigorous in terms of coding through a loose and intuitive way of interpretation. To strike a balance between rigorous needs and manpower restrictions, I decided to use an inductive-deductive swapping approach of coding strategy so the whole process could be more rigorous and likely for replication, especially conducted by one researcher.

As previously mentioned, I applied CAQDAS into the research. A total of 42 literature review references, 18 KT annual reports, 18 institutional annual reports, some respective years of institutional strategic plans, and seven interview transcripts were imported into MAXQDA12 for data management, data searching, coding, constructing codebook, deriving matrices, retrieving coded segments, facilitating the process of creating a thematic summary, and preparing for thematic-based analysis. With the support of a software instrument for coding and categorising as well as the basic guiding procedures set out by the adapted TQTAP in Figure 4.6, of which interrelated details are described more in the following section of Analysis Methods while the coding strategy is elaborated more under this sub-section.

In terms of simplicity, the coding process strategy could be just read and interpreted as the empirical data, such as interview transcripts and KT annual reports, directly for initial coding (i.e., descriptive codes), then re-reading for more abstract terms as the process of second coding (i.e., interpretative coding), and finally identifying some kinds of patterns (e.g., differences, similarities and characteristics) amongst the cases. Nevertheless, I applied an inductive-deductive swapping approach of coding strategy, illustrated in Figure 4.3, supplemented with illustrative examples, for conceptual and progressive understanding of the coding strategy. Swapping means the coding rules do not “mutually exclusive” or absolutely opposite as a dichotomy (Lewins & Silver 2007, p. 88) that the coding process could be commenced with inductive to deductive and swapped with inductive coding when necessary. The strategy was to complement each other and strike a balance between the needs to be non-exhaustive and more flexible in the coding process (Lewins & Silver, 2007).

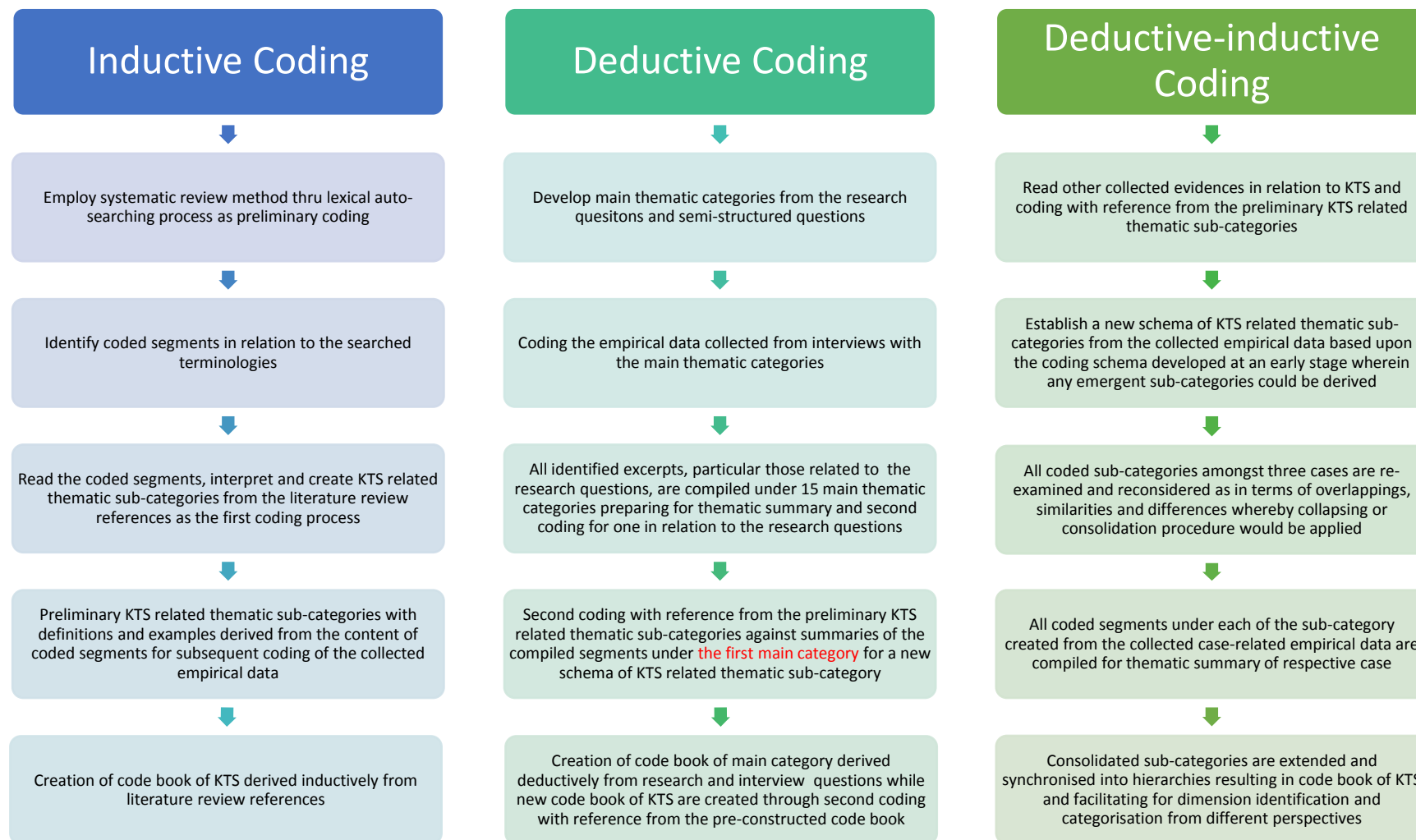


Figure 4.3. An Inductive-deductive Swapping Approach of Coding Strategy. (Reference from Kuckartz, 2014; Lewins & Silver, 2007).

4.7.1 Lexical auto-searching as preliminary coding for the creation of KTS related thematic sub-categories under the second coding process - inductive coding. At the preliminary stage of coding, I employed the systematic review principle with auto-coding strategy. I used a bundle of terminologies as search strings for auto-coding within the literature review references for locating all data segments in relation to the searched terms so as to intentionally read, identify and develop thematic sub-categories inductively in relation to knowledge transfer strategies. Comments were simultaneously created and then given during the process of reading through all auto-coded related passages, whereas, irrelevant codings, such as bibliography and title only, were excluded from the retrieved segments. Descriptively or interpretively relevant comments were included as the retrieved segments for constructing predefined KTS related thematic sub-categories for further coding of the collected empirical data. Thirteen Terminologies such as "knowledge transfer", "strategies" and "knowledge transformation" (for details, please refer to Table 4.8 of the search strings and results of the auto-coding) were used. These resulted in a total of 9,202 auto-coded term segments in which 359 non-exhaustive coded segments with 133 KTS related thematic sub-categories (i.e., a preliminary codebook in Table 4.9) from 30 documents were identified and created within a total of 42 activated literature review references. Examples of auto-coded term segments and coded segments with thematic sub-categories of the preliminary codebook are tabulated in Table 4.10 below as supplementary information to Figure 4.3.

Table 4.8

Search Strings and Result of Auto-Coding

No.	Terminology as Search Strings	Auto-Coded Segments
1	Knowledge	5102
2	Policy	1886
3	Knowledge transfer	1189
4	Strategy / strategies	585
5	Technology transfer	156
6	Knowledge management	102
7	Knowledge-based	68
8	Knowledge exchange	64
9	Knowledge utilisation	21
10	Knowledge translation	13
11	Knowledge System/knowledge-based System	10
12	Knowledge transformation	3
13	Knowledge transfer policy / policies	3
	Total Auto-coded Segments	<u>9202</u>

Table 4.9

A Preliminary Codebook of 133 KTS Related Thematic Sub-Categories (P-KTSTSC)

133 KTS Related Thematic Sub-Categories			
Themes of Letter A to D (No. 1 to 34)	Themes of Letter E to K (No. 35 to 68)	Themes of Letter K to P (No. 69 to 102)	Themes of Letter P to T (No. 103 to 133)
Academic capacity building strategy	Engagement strategy	Knowledge management strategy	Protecting strategy
Accessibility strategy	Engaging wide stakeholders strategy	Knowledge mobilisation strategies	R & D Capacity
Advertising strategy	Entrepreneurial strategy	Knowledge network strategy	RDD model strategy
Alliances strategy	Evidence-based accessible strategy	Knowledge-based networks/partnerships strategy	Regular contact strategy
Applicable strategy	Evidence-based bridging strategy	Knowledge-based regional development strategy	Relevance strategy
Applied research strategy	Evidence-based guiding strategy	KT activity-based strategy	Research capacity strategy
Capacity building strategy	Evidence-based research strategy	KT Engagement in local community	Research impact strategy
Co-creating inter-disciplinary strategy	Evidence-based strategy	KT engagement with people	Research partnership strategy
Collaboration and conflict moderation strategy	External engagement strategy	KT Partnerships	Research-based knowledge strategy
Collaboration Strategy	Fiscal or resources strategy	KT strategy aspects	Research-based strategy
Collaborative innovation & learning strategy	Formal engagement strategy	Leadership engagement strategy	Researcher mobility strategy
Collaborative knowledge sharing culture	Goal evaluation strategy	Licensing strategy	Resources strategy
Collaborative knowledge sharing strategy	Hybridising strategy	Link research with policy and practice	Sharing culture strategy
Collaborative leadership strategy	Identify right target and keep policy updating strategy	Linkage model strategy	Sharing strategy

133 KTS Related Thematic Sub-Categories			
Themes of Letter A to D (No. 1 to 34)	Themes of Letter E to K (No. 35 to 68)	Themes of Letter K to P (No. 69 to 102)	Themes of Letter P to T (No. 103 to 133)
Commercialisation strategy	Implementation of KTS	Linking agent strategy	Showcase strategy
Communication Strategy	Improving human resources strategy	Linking agents strategy	Situational strategy
Consultation with potential users strategy	Incentive strategy	Linking strategy	Social capital strategy
Contract research strategy	Informal engagement strategy	Mapping strategy amongst institutions	Social interaction model strategy
Cooperation research strategy	Information strategy	Marketing strategy	Social network strategy
Cooperation strategy	Information technology strategy	Mediated strategy	Social networks strategy
Copyright strategy	Informed teaching strategy	Multi-disciplinary & multi-faceted strategy	Story-telling strategy
Creative economy strategy	Innovation research	Networking strategy	Structural and substantive support strategy
Creative partnership strategy	Innovation strategy	Open innovation strategy	Student engagement strategy
Cultural change strategy	Innovation strategy for renewal and growth	Open New work structure strategy	Sustainable strategy
Dissemination strategy	Institutional coherence strategy	Open source strategy	Substitution strategy
Economic & business development strategy	Institutionalisation strategy	Organizational socialisation strategy	Support channels strategy
Economic and community development strategy	Intellectual property strategy	Participatory strategy	Technology transfer strategy
Economic engagement strategy	Interaction Strategy	Partnership cum leadership strategy	Toolkit strategy
Educational materials strategy	Interdisciplinary strategy	Partnership strategy	Training KT agents strategy
Educational meetings and materials strategy	IT strategy	Passive KT strategy	Training strategy
Effective communication strategy	Joined-up knowledge management strategy	Patent strategy	Triple Helix system approach
Elements of Knowledge-based partnerships strategy	Knowledge carrier strategy	Practice-oriented strategy	
Enabling environment strategy	Knowledge economy strategy	Problem-solving model strategy	
Encourage strategy	Knowledge exchange or transfer itself is a strategy of research	Professionalisation strategy	

Table 4.10

Examples of Auto-Coded Term Segments and Coded Segments with Thematic Sub-Categories of the Preliminary Codebook

Comment	Document Group	Document Name	Begin	End	Segment	Code	Area
Title only	Auto-coding thru KT related theoretical models	2013 Triple Helix Systems Analytical Framework for Innovation P	1: 91	1: 99	Knowledge	Codes for auto-coding\Knowledge - auto coding	9
	Auto-coding thru KT related theoretical models	2013 Triple Helix Systems Analytical Framework for Innovation P	1: 687	1: 1076	The relationships between components are synthesised into five main types: technology transfer; collaboration and conflict moderation; collaborative leadership; substitution; and networking. The overall function of Triple Helix systems – knowledge and innovation generation, diffusion and use – is realised through a set of activities in the knowledge, innovation and consensus spaces	Creating codes with literature references\ Networking strategy	390

4.7.2 Develop main thematic categories as the first coding process for the identification of coded segments facilitating for thematic summary and second thematic sub-category coding – deductive coding. Upon the derivation of 133 KTS related thematic sub-categories inductively from the literature review, references for the creation of a preliminary codebook, relevant definitions and examples derived from the content of coded segments were developed in a non-exhaustive principle (Table 4.11) from which, subsequent coding of the collected empirical data could be thoroughly conducted.

Table 4.11

Cited Definitions and Examples of KTS Related Thematic Sub-Categories

Sub-Category	Definition	Examples From The Literature Review References
Accessibility strategy	Accessibility implies physical availability of research knowledge and its intellectual accessibility	Make syntheses of pertinent research results with simplicity in application.
Capacity building strategy	Capacity here refers to "the practitioners' competencies in research", professional experience, cognitive abilities, social capital as well as some personal attributes, or basic absorptive capacities during the involvement process of knowledge transfer that they may be lacking of and needed to build up the required capacity.	Research capacity training; training for the application of new knowledge, and collaboration.
Collaboration Strategy	Collaboration strategy in knowledge transfer is realising through working collaboratively amongst the consortiums aims at sharing of knowledge and co-creating innovative knowledge, in which the enhancement of individual and team competency through collaboration and development of sharing culture are essential.	Development of the Triple Helix culture.

Sources: Becheikh, Ziam, Idrissi, Castonguay, and Landry (2010); Hemsley-Brown (2004); Kumaraswamy and Chitale (2012); OECD (2007); Powell (2012); Schiller and Brimble (2009).

In parallel, the main thematic categories were deductively developed with reference to the research questions and semi-structured questions for the case interview. Simultaneously, the empirical data collected from interviews were transcribed and then coded according to the main thematic categories before all excerpts were compiled under each of the main categories. After the process of compilations, thematic summaries were created under each of the main thematic categories by reading and interpreting the compiled passages of the coded transcripts so as to facilitate a second coding process with regard to the empirical data set for developing a more elaborate and relevant coding schema. This new coding schema of the KTS thematic sub-categories were derived deductively by making reference from the preliminary codebook for the coding of thematic summaries in relation to the first research question, i.e., planned and adopted knowledge transfer strategies, and of the other collected evidences in relation to KTS (e.g., KT annual reports).

Finally, fifteen main thematic categories (Table 4.5) were constructed for coding of a total of seven Chinese verbatim transcripts collected from the three HEIs. Certain numbers of coded segments were then identified for consolidating the thematic summaries facilitating the second coding of the KTS

thematic sub-categories, specifically, in relation to the first research question. Besides the aforementioned, other main thematic summaries of the seven interviewees were manifested in the case report in Chapters 4 to 6 respectively, while thematic matrix amongst the cases were derived for cross-case comparison and analysis at the chapter of analysis. Nevertheless, a codebook of the main thematic category was derived at an early stage while a new codebook of KTS was created through the process of second coding of the empirical data with reference from the preliminary codebook. A total of 911 coded segments with 61 KTS related thematic sub-categories (i.e., a full list of sub-categories of the new codebook in Table 4.12) from 25 documents (e.g., seven summaries of coded segments under the main thematic category and 18 KT Annual Reports from the three HEIs) were identified and created, inclusive of the emergent ones. Examples of coded segments with thematic sub-categories of the new codebook are tabulated in Table 4.13 as supplementary information to Figure 4.3.

Table 4.12

*A New Codebook of 61 KTS Related Thematic Sub-Categories (N-KTSTSC)***61 KTS Related Thematic Sub-Categories**

Themes of Letter A to E (No. 1 to 16)	Themes of Letter E to K (No. 17 to 32)	Themes of Letter K to P (No. 33 to 48)	Themes of Letter P to T (No. 49 to 61)
Academic & professional capacity building KT strategy	External engagement KT strategy	KT Engagement strategy	Professionalisation KT strategy
Accessibility KT strategy	Fiscal or resources KT strategy	KT impact strategy	Progressive development KT strategy
Applied research strategy	Formulation strategy	KT model building strategy	Progressive promotion and cultivation strategy
Bottom up KT strategy	Impact assessment strategy	Leadership engagement strategy	Protecting strategy
Capacity building KT strategy	Implementation strategy	Long-term commitment strategy	Recognition strategy
Collaboration Strategy	Incentive KT strategy	Marketing strategy	Service-learning KT strategy
Commercialization KT strategy	Information technology KT strategy	Mission-vision driven KT strategy	Student engagement strategy
Communication KT Strategy	Innovation strategy	Networking strategy	Sustainable KT strategy
Community education KT strategy	Institutionalisation KT strategy	Non-technology KT strategy	Technology transfer strategy
Cultural change KT strategy	Intellectual property right strategy	Organisation Structure Establishment	Thematic KT strategy
Culture Establishment	Interaction KT Strategy	Participatory KT strategy	Theoretical-based KT strategy
Dissemination KT strategy	Interdisciplinary KT strategy	Partnership KT strategy	Train-the-trainer KT strategy
Enabling environment KT strategy	Knowledge carrier KT strategy	Patent KT strategy	Transformation KT strategy
Encourage KT strategy	Knowledge-based regional & international development strategy	Performance Indicator Guided KT Strategy	
Entrepreneurial KT strategy	KT activity-based strategy	Proactive approach in promoting KT	
Expertise KT strategy	KT Engagement in local community	Professional customer-oriented strategy	

Table 4.13

Examples of Coded Segments with Thematic Sub-Categories of the New Codebook

Document	Code	Begin	End	Segment	Area
2014-15 HKBU Annual Report on KT Recurrent Funding	Enabling environment KT strategy	5: 68	5: 239	The reporting year of 2014-15 has been a fruitful year for Knowledge Transfer Office (KTO) in broadening its support and services at Hong Kong Baptist University	170
2014-15 EdUHK Annual Report on KT Recurrent Funding	Enabling environment KT strategy	10: 1178	10: 1638	The Institute supports and encourages its staff members...to organize and conduct KT activities or projects according to their own capacity and strengths in a creative way. We believe that the ownership, creativity and integration of KT activities into the corresponding R&D agenda of academic units and research centres are crucial to the sustainable development of KT	461
2014-15 LU Annual Report on KT Recurrent Funding	Enabling environment KT strategy	4: 27	4: 215	The purposes of creating new internal platforms for KT are to enhance the awareness of KT opportunities in academic work, providing the actual support and giving the recognition needed	186

Source: EdUHK (2015), HKBU (2015), LU (2015).

4.7.3 Deductive-inductive coding. A deductive coding process was implemented with reference to the pre-defined KTS related thematic sub-categories contained in the preliminary codebook. Consequently, a new codebook of KTS thematic sub-categories was gradually created through the process of coding the empirical data collected from the interviews and other documents in relation to KTS. The coding process was based upon the preliminary codebook developed at an early stage wherein any emergent KTS thematic sub-categories, such as theoretical-based KT strategy and service-learning KT strategy, were inductively derived. Henceforth, a deductive-inductive coding process was applied interchangeably with reference to the nature of the collected data versus strategic needs. Out of the total of 911 coded segments with 61 KTS related thematic sub-categories, a total of 144 coded segments with 18 emergent KTS thematic sub-categories (i.e., a list of emergent sub-categories of the new codebook in Table 4.14) were inductively generated during the second coding process. Examples of coded segments with emergent thematic sub-categories of the new codebook are tabulated in Table 4.15 as supplementary information to Figure 4.3.

Table 4.14

*A New Codebook of Emergent KTS Related Thematic Sub-Categories***18 Emergent KTS Related Thematic Sub-Categories**

Themes of Letter C to L (No. 1 to 6)	Themes of Letter M to P (No. 7 to 12)	Themes of Letter P to T (No. 13 to 18)
Community education KT strategy	Mission-vision driven KT strategy	Progressive promotion and cultivation strategy
Expertise KT strategy	Non-technology KT strategy	Service-learning KT strategy
Formulation strategy	Performance Indicator Guided KT Strategy	Thematic KT strategy
Impact assessment strategy	Proactive approach in promoting KT	Theoretical-based KT strategy
KT model building strategy	Professional customer-oriented strategy	Train-the-trainer KT strategy
Long-term commitment strategy	Progressive development KT strategy	Transformation KT strategy

Table 4.15

Examples of Coded Segments with Emergent Thematic Sub-Categories of the New Codebook

Document	Code	Begin	End	Segment	Area
2010-11 EdUHK Annual Report on KT Recurrent Funding	Proactive approach in promoting KT	2: 1026	2: 1179	Through the Institute's pro-active and extensive KT activities, our advanced scholarship has had a far-reaching impact on the development of education	152
2012-13 HKBU Annual Report on KT Recurrent Funding	Non- technology KT strategy	4: 1011	4: 1255	KT partnership projects are flagship activities and four selected projects of different disciplines, including arts, Chinese medicine and social sciences will be showcased to demonstrate the wide spectrum of KT collaborations	240
2013-14 LU Annual Report on KT Recurrent Funding	Service- learning KT strategy	4: 3604	4: 3919	A good example is the Business Faculty taking professional knowledge of management to help NGOs - as both a Service Learning program for students..., and contributions...to NGOs who otherwise will not be able to afford the consultancy fees for organisational improvement.	313

Source: EdUHK (2011), HKBU (2013), LU (2014).

With the progressive development of the new codebook, a total of 90 KTS related thematic sub-categories, of which, 65 were created deductively with reference from the preliminary codebook and 25 derived inductively from the collected empirical data as emergent sub-categories, initially established during the second coding of sub-categories with regard to the main thematic category of “the planned and adopted knowledge transfer strategies”.

Subsequently, I screened and reviewed the content and context of all coded sub-categories with similar terminology and/or interpretative meaning during the coding-recoding process. Typical examples, such as collaboration strategy, collaborative knowledge sharing strategy and sharing strategy had similar meanings with emphasis on collaborative relationships and sharing culture in knowledge creation and innovation during the process of knowledge transfer. They were combined into one sub-category as collaboration strategy and research partnership strategy and partnership strategy would be combined under one sub-category as partnership strategy since the embedded purposes and definition are similar, were quoted for specific illustration. Figure 4.4 illustrates examples of what KTS thematic sub-categories emerged during the consolidation procedure. Essentially, the purposes were to re-examine and reconsider whether there were overlapping, similarities or differences embedded across those sub-categories whereby consolidation or collapsing procedure was applied for the sake of simplicity and enabling the subsequent stage of extending with hierarchies.



Figure 4.4. Illustration Examples of the Consolidation of KTS Thematic Sub-Categories.

Accordingly, a total of 61 consolidated sub-categories were collapsed, extended and synchronised into seven dimensions within the broad hierarchy structure, namely as “capacity building KT strategy”, “dissemination KT strategy”, “enabling environment KT strategy”, “formulation strategy”, “implementation strategy⁹”, “KT engagement strategy”, and “protecting strategy”. Within the broad structure, the sub-categories were assigned and grouped under the seven hierarchies (Figure 4.5), resulting in a finalised new code book of KTS, facilitating for category-based analysis, dimension identification and categorisation from different perspectives.

⁹ Among seven dimensions, the implementation strategy has a total of 23 thematic sub-categories of KTS of which only 8 with higher intensity have been shown at Figure 4.5 whereas the other 15 are as follows: Non-technology KT strategy, Interdisciplinary KT strategy, Service-learning KT strategy, Interaction KT Strategy, Technology transfer strategy, Performance Indicator Guided KT Strategy, Community education KT strategy, Expertise KT strategy, Participatory KT strategy, Sustainable KT strategy, Knowledge carrier KT strategy, Knowledge-based regional & international development strategy, KT activity-based strategy, Innovation strategy, and Transformation KT strategy.



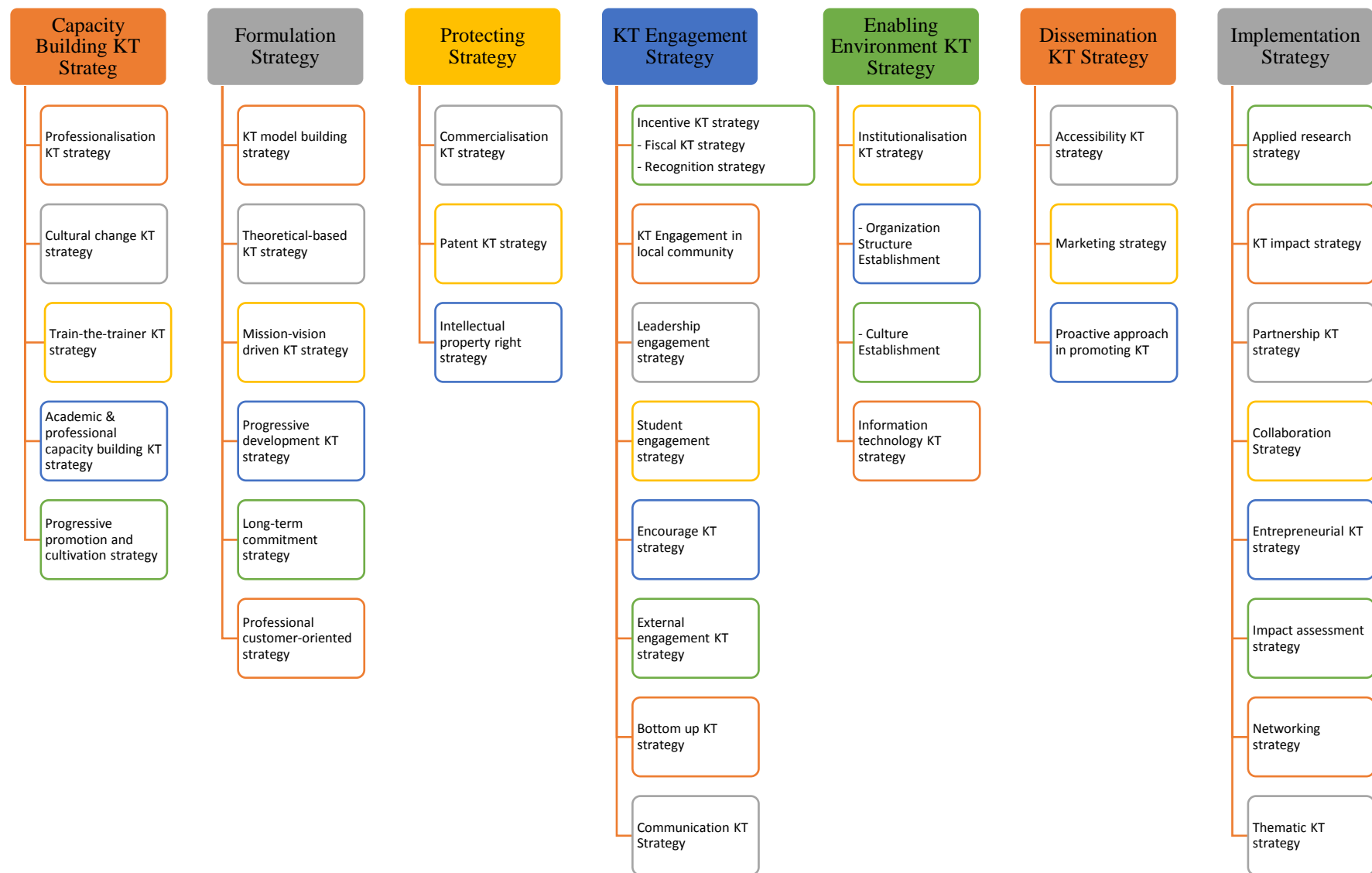


Figure 4.5. Seven Dimensions of the Broad Hierarchy Structure with Grouped Sub-Categories.



In respect of the 911 segments coded under a total of 61 consolidated and collapsed sub-category of KTS, only those coded segments under each of the sub-categories denoted with higher degree of code frequency (e.g., sub-categories with above average of 15¹⁰ in code frequency denoted as higher degree in general), were selected. They constituted a total of 19 coded items and were applied unanimously to the three cases while each case had its own average of code frequency facilitating for individual case report were compiled and summarised through a process of data convergence for the establishment of the thematic category-based summaries. The higher degree of code frequency implied an aggregate of coded segments manifesting by frequency of which these were demonstrated through the code matrix of sub-categories under the system of MAXQDA12. Examples of the compiled and converged coded segments under respective thematic sub-categories of the new codebook are tabulated in Table 4.16 as supplementary information to Figure 4.3.

Table 4.16

Examples of the compiled and converged coded segments under respective thematic sub-category of the new codebook - Enabling environment KT strategy (EdUHK)

2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	M2	A2
The Institute supports and encourages (...) are crucial to the sustainable development of KT 10: 1178 - 10: 1638 (0)	At the Institute level (...) further enhanced research capacity and expanded KT activities 13: 1085 - 13: 1416 (0)	The earmarked funding of (...) committed school leaders to simultaneously learn to lead and lead to learn 17: 630 - 17: 757 (0)	A user-friendly on-line system (...) workshops to solicit their feedback for self-reflection and improvement purposes 9: 277 - 9: 666 (0)	In line with the Institute's Initial Statement on KT (...) research and service within our academic staff's workload. 16: 2557 - 17: 48 (0)	KT Database: The existing KT data (...) standard form was provided for the completion of the Faculties / Centres/ Units 13: 1770 - 13: 2269 (0)	Externally, it becomes a contact and coordination point for society needs (...) coordination and understanding between and amongst key stakeholders. 14 - 14 (0)	Once participate in KT, the subsequent strategy is (...) especially staff from the departments and research centres of the three faculties in EdUHK. 12 - 12 (0)
The strategy of enabling environment for knowledge transfer in EdUHK is to create a conducive environment through different strategies both at the institute and academic unit level (...) These examples are indeed typical and essential in helping to create the KT conducive environment for enabling KT in action, culture and progressive development.							

¹⁰ A total of 911 segments were coded under a total of 61 consolidated and collapsed sub-category of KTS in which the average code frequency was 15 (i.e., 911 divided by 61).

4.8 Unexpected Difficulties and Influence on Data Collection/Processing

The principal target of this multiple-case study research were the HEIs in Hong Kong whereby management and administrative staff of the institution concerned were the key or relevant informants, apart from the essential information retrieved from the websites of the institutions as well as other available and retrievable sources of information. It was expected that as the researcher, I could convince all informants to undertake an agreement to reveal their identities so that the readability and tracked value of the case study research could be enhanced. Consequently, the actual situation was not as expected. Three out of seven informants' consents to reveal their identities, including rank, position and name, in the research report were not obtained, therefore, I decided to apply an anonymity strategy to all so as to safeguard a consistent pattern in dealing with the collected data. However, I needed to strike a balance between maximising the research value of the case study while preserving the research ethics of confidentiality and the right of participants when dealing with unexpected difficulties. Although the applied anonymity strategy might have had some effects on data processing, such as one needing to spend more time screening any wording that might reveal the identities of the interviewees, there seemed to not be much influence on the data collection process. Nevertheless, I needed to reframe some wording and context of the Chinese verbatim transcripts, especially if I needed to place these documents as enclosures of the Case Study Data Base for audit trail, otherwise there may have been possibilities of revealing their identities.

In addition, I attempted to request seeking institutions' KT Initial Plans submitted to the UGC for funding applications in the past two triennium periods. Nevertheless, it was in vain that I originally attempted to use these kinds of data with KTS policy planning for comparing with what have been actually implemented so as to observe any notable differences between policy formulation, dissemination and implementation with a relatively objective perspective. In this regard, I analysed the notable differences by alternate methods, such as comparison between management and administration

perspectives on KTS and the pattern of KTS development across 6-years of KT implementation amongst three cases.

Lastly, it would be uncontentious that a second or multiple coders would have been helpful in minimising subjectivity while enhancing reliability during the coding process. However, EdD candidates are normally playing a sole researcher role with very limited time and resources. To tackle the reality situation, I derived and follow-through an Inductive-deductive Swapping Approach of Coding Strategy (Figure 4.3) for minimising subjectivity and enhancing reliability as far as possible. In addition, methods of triangulation and audit trail, such as the Case Study Database, were applied and established for dealing with the possible subjectivity derived from interpretative analysis.

4.9 Analysis Methods

4.9.1 Heuristic Framework for data presentation and comparative analysis. Regarding the application of the heuristic framework, it is proposed by Lavis et al. (2003) that it adopts a heuristic approach for the formulation of knowledge mobilisation strategies by considering a number of W-elements (e.g., 5W-elements), i.e., “what to be mobilized, in what way, to whom, by whom and with what effect”. “Heuristic means method of learning involves discovery and problem-solving, using reasoning and past experience” (Collins Cobuild, 2012, p. 743). Heuristic, indeed, implies experiential, empirical and exploratory process whereby knowledge itself cannot be mobilised without a bridge to facilitate and enable its transfer. The bridge, then, can be a strategy or rule-based on evidence and past experience to solve problems (e.g., strategy to engage academia or community stakeholders in KT). In respect of the nature and structure of the heuristic approach complementary to the descriptive framework, it was adopted to reinforce the rule-based and systematic way of data presentation and analysis.

I applied this heuristic framework for immersing in the chapters (i.e., Chapters 4-6) for reporting data collected from multiple-cases breaking down into sections within each case to describe

case study related issues, especially with reference to the protocol questions and related sections of the pre-established case study protocol. Guided by the protocol not only served to deriving procedures and general rules to follow for executing the data collection from various sources of evidences, but also related sections of the protocol questions, such as the section of brief background and KT strategy formulation of the study case, and forming the foundation for individual cases and cross-case analysis in a systematic procedure (Yin, 2014). Essentially, the protocol questions were created to prompt me as the interviewer/researcher for the collection of data from the interviewees and the case-institutions, from which, the collected data were directed to the research questions for finding presentation and analysis.

Specifically, my attempt was to apply this heuristic approach of knowledge mobilisation strategy, with some sort of adaptation, as a conceptual framework and systematic way of coding/retrieving data for deconstructing what kinds of knowledge mobilisation strategies have been formulated and implemented by the case-institution at both the institution-based (i.e., policy) and academia-based (i.e., implementation) level. This is somewhat a strategy of "reverse thinking" for investigating and analysing the formulated and implemented KT strategies embedded in the textual evidences of an institution-case in this research. The adaptations included the replacement of knowledge mobilisation strategy with knowledge transfer strategy to commensurate with the local KT context and an extra W-element of "why knowledge transfer" which implied the aims and rationale behind the knowledge transfer. Henceforth, it became 6W instead of 5W-element of the heuristic approach. The chapter-sections immersed with the elements are elaborated in Table 4.17 while retrieved examples of the 6W-elements of the study cases are tabulated in Table 4.18 to demonstrate how I illustrated and analysed the findings to the research questions, particularly, RQ3 and RQ4, in the chapters of data presentation and analysis under the descriptive framework.

Table 4.17

6W-elements of Heuristic Approach Immersed in the Data Presentation and Analysis Chapters under the Descriptive Framework

Section Title	6W-Elements	Level of Analysis
Background of knowledge transfer in Hong Kong and within the institution-case's context	Why KT	Policy / institution-based
Formulation of knowledge transfer strategy	What to be transferred	
Dissemination of knowledge transfer strategy	In what ways	
Implementation of knowledge transfer strategy	To whom & by whom	
Evaluation of knowledge transfer strategy	With what effect	

Table 4.18

Retrieved Examples of the 6W-elements of the Study Cases

Why	By Whom	To / With Whom	What to be Transferred	In What Way(s)	With What Effect(s)	Example of KT Project(s)	
KT Aims	KT Key Stakeholders		Knowledge Transfer Strategy – its Scope, Mechanism, Results and Manifestation				
Rationale	Internal ¹¹	External / Internal	KT Areas	Core KT Strategies	Foreseeable KT Impacts	KT Showcases / Typical Examples	
Hong Kong Baptist University (HKBU)							
To cultivate literary creativity & enhance cultural atmosphere	Faculty of Arts	Community	Non-technology areas e.g., literary creativity	Partnership KT strategy e.g., partner with writing scholars Interaction strategy e.g., Writer-in-Residence	- enhance cultural dimension - cultivate literary creativity	The International Writers Workshop	
The Education University of Hong Kong (EdUHK)							
To empower curriculum leaders with enhanced knowledge and skills in curriculum development	The Centre for Childhood Research and Innovation (CCRI)	Curriculum leaders in the pre-primary institutions	Non-technology areas e.g., effective curriculum development and implementation	Partnership KT strategy e.g., partner with pre-primary institutions in school-based curriculum development	Empower preschool staff in effective curriculum development and implementation	Empowering Early Childhood Institutions in Implementing Effective School-based Curriculum	
					Help to create a collaborative school network amongst 60 preschools		
					Derive a deliverable in the form of a book “Exemplary Practice on Effective School-Based Curriculum”		
Lingnan University (LU)							
To promote arts inclusion	Faculty of Arts	- Artists - Public - Community members	Non-technology areas e.g., arts inclusion	Partnership KT strategy e.g., partner with NGO to promote art inclusion and showcase different abilities of disabled artists	promote arts inclusion and draw people with different abilities together to showcase different abilities of disabled artists	“Come in please!” exhibition	

Sources: HKBU (2010); EdUHK (2010); LU (2010)

¹¹ Internal here is implied as within the institutional context where the key stakeholders are affiliated with the institution.

4.9.2 Adamson and Morris's Framework for focusing comparison and interpretative

analysis. In this section, I only focus on how Adamson and Morris' framework was used.

Interpretations of the overall policies and purposes of knowledge transfer as well as the process dimension of KT strategy formulation, dissemination and implementation by the established facts and views were collected from the typical manifestations of the aspect of KT strategy for comparing and analysing horizontally. These identified notable differences between strategy formulation, dissemination and implementation amongst the three HEIs (i.e., RQ4) are detailed. This framework helped to focus the investigation on how KT strategies have been formulated, disseminated and implemented in the three study cases and comparison through three typical manifestations of the aspect of KT strategy – policy documents, KT reports/webpages, and interview transcripts. A Linear-to-Cyclic (LTC) Model Perspective (Chung, 2013) as one of the conceptual frameworks, which emphasises the developmental stages of knowledge transfer in HEIs, was adopted for the analysis of the data collected. An example of a framed table (Table 4.19) was constructed with reference from Table 3.1 to demonstrate how the identified aspects of KT strategy were compared and interpreted in the chapter of data analysis.

Table 4.19

Example of a Framed Table for Comparative and Interpretative Analysis of the Aspects of KT Strategy

Manifestation	Aspect of KT Strategy	Locational Level (i.e. HEIs)		
		HKBU	EdUHK	LU
		Conceptual understanding and interpretation of KT		
Policy documents				
KT reports				
Interview transcripts				
Management perspective				
Administration perspective				
		KT strategy formulation		
Policy documents				
KT reports				
Interview transcripts				
Management perspective				
Administration perspective				

4.9.3 Thematic qualitative text analysis for thematic matrix interpretation and “cross-case synthesis”. Thematic qualitative text analysis was adopted as one of the analytical methods of which the analysis process was embedded with the needs to construct thematic categories through an inductive and/or deductive method of data coding leading to the progressive step of thematic or category-based analysis (Kuckartz, 2014). In view of the coding strategy for processing data and facilitating analysis illustrated in the previous section, I emphasise and describe more on the adapted TQTAP, particularly with reference to Figure 4.6. Besides, two associated analytical techniques of the thematic-based analysis through thematic matrix interpretations and cross-case synthesis through findings aggregations (Yin, 2014) employed in the chapters of data presentation and analysis are described here. The intention, to illustrate how the analysis methods could address the research questions, of which, the thematic-based analysis concerned RQ1, RQ2 and RQ3 while cross-case synthesis inclined to answer RQ3 and RQ4.

The interrelated details of the employed analytical methods produced in Figure 4.6 supported the step-by-step illustration of the basic process of thematic qualitative text analysis with specification on the thematic-based analysis and cross-case synthesis, from which, the research questions should be addressed. Nevertheless, it was necessary to make note that the process of inductive-deductive swapping approach of the coding strategy (Figure 4.3) was intertwined with the adapted TQTAP in some aspects whereby, the ‘analysis methods’ would be the emphasis.

Additionally, some explanation about the symbols inserted into Figure 4.6 for pre-conceptualization on the types of relationship between research questions and progressive steps of TQTAP or amongst steps are provided. RQs could be regarded as ‘inquirer’ while data/coded segments as ‘informant’. The trunk in grey blue implies a one-way direction of the process of TQTA, which RQs are the origin source of beginning the process while temporary ends with the findings presentation within the scope of this research but can go further with the arrow’s direction. The ‘black-solid-single

arrow' denotes one-way direction of which elements (e.g., thematic categories) derive from the 'RQs' to 'data' or vice-versa while the 'blue-dash-single arrow' implies 'data' informing the 'RQs' the elements or vice versa. The black-solid represents 'derivative' relationship while the blue-dash represents 'informative' relationship, in which solid denotes 'direct and strong' relationship and dash denotes 'indirect and weak' relationship; while solid-dash implies an 'indirect but stronger' relationship. A key is inserted in Figure 4.6 for simple explanation.



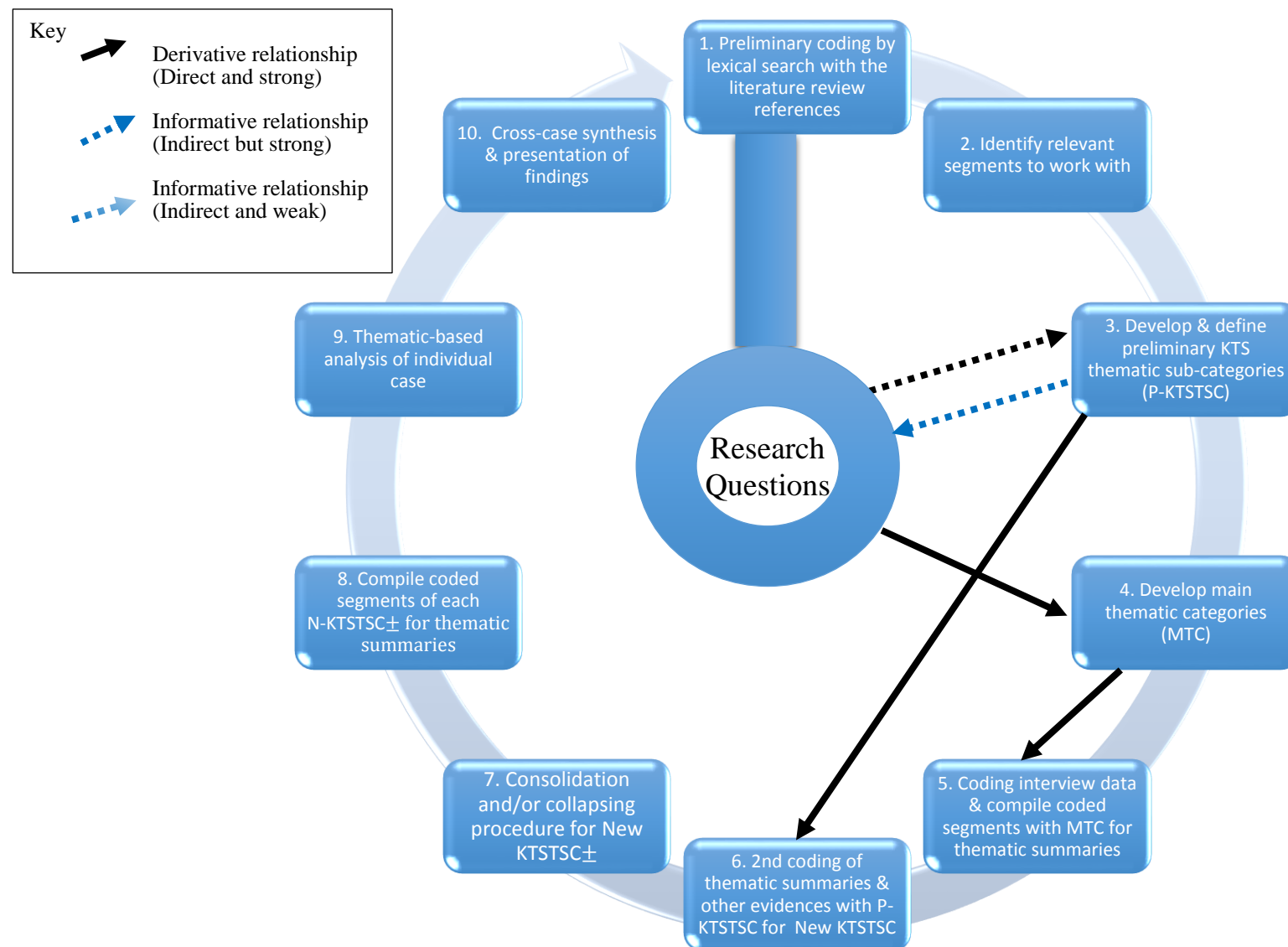


Figure 4.6. Adapted Thematic Qualitative Text Analysis Process. (Source: Kuckartz, 2014).

Steps 1 to 3 were consecutively linked as essential steps of preliminary coding through the relatively systematic-objective procedures in coding text passages and to develop sub-categories at the initial stage of TQTAP. These served two aims: one was to minimise coding through a loose and intuitive way of interpretation from a single coder by the systematic rules and process; the other, to facilitate the derivation of a bundle of definitions of the P-KTSTSC supporting thematic-based analysis, apart from coding against the empirical data for a new set of relevant thematic sub-categories.

The underneath procedure of the development of MTC (i.e., Steps 4 thru 5) was to identify coded segments/text passages within the Chinese verbatim transcriptions facilitating for the thematic summary in English under each MTC. These summaries (i.e., related to RQ1) partly served for second coding the New KTSTSC as most were the ingredients of proofs for the analysis process in the chapters of data presentation and analysis. In regard of the main thematic summaries under 15 MTC derived from the seven interview transcripts, those transcripts were passed through a systematic and rigorous process of audio-record transcription, MTC coding, relevant coded segment compilation, thematic summary translation, and interviewee verification. Of them, seven thematic summaries derived under the first MTC, i.e., related to RQ1, were second coded with P-KTSTSC for New KTSTSC (i.e., Step 6); while these summaries derived from respective interviewees were tabulated together with the N-KTSTSC for thematic-based comparison and analysis at the corresponding chapter of individual case. This comparative analysis attempted to address RQ1, particularly from the management and administration perspectives. A sample of a comparative table (i.e., Table 4.20) was constructed and demonstrated as an illustration of the format and approach of the thematic-based analysis of the thematic summaries under the first MTC. Besides, the remaining 14 thematic summaries of each interviewee, if and whenever relevant, were applied for data presentation and analysis in the chapter for individual

institution aligned with the sections under the “descriptive framework” of the study case. The format and approach of the thematic-based analysis applied for one of the cases was also replicated for others so that consistency in the analytical process could be established for reliability.

Table 4.20

Sample of a Comparative Table for Illustrating the Format and Approach of Thematic-based Analysis of the Thematic Summaries under the First MTC

LU	First MTC: Main thematic category of the planned and adopted knowledge transfer strategies	
Interviewee	Thematic Summary	N-KTSTSC
M3	Lingnan University has also adopted an institutional strategy by assigning an existing unit responsible for the KT- related work.	Institutionalisation KT strategy
A3	Apart from that, it is importance to build up relationship with the community in a cohesion status.	Networking strategy
A4	Having the correct understanding of the concept and/or process of knowledge transfer is first and foremost strategy for the promotion and implementation of KT in the context of institution and society....	Capacity building KT strategy

Under Step 8, it emphasised compiling coded segments of each N-KTSTSC \pm facilitating for the thematic summaries. A total of 911 segments were embedded within 61 consolidated and collapsed sub-categories of KTS (i.e., N-KTSTSC \pm) coded from the above mentioned thematic summaries (i.e., first MTC) and collected empirical data (e.g., 6-year KT reports commencing from 2009/10 to 2014/15) of the respective cases. In respect of the bulky 911 segments coded under a total of 61 consolidated and collapsed sub-categories of KTS, a priority principle in the selection of the N-KTSTSC \pm for thematic summaries and category-based analysis were derived at the sub-section of coding strategy. To reinstate, only those coded segments under each of the sub-categories denoted with a higher degree of code frequency were compiled and summarised through a process of data convergence for the establishment of thematic category-based summaries (for examples, please refer to Table 4.16). The prioritised sub-categories with a higher degree of code frequency were tabulated in

Table 4.21. Those relevant to the research questions were applied unanimously to the study cases in conformity with the replication design of category-based analysis within individual case, despite the fact that uniformity in frequency between cases might not have existed.

Table 4.21

The Prioritised KT Strategy Sub-Categories with Higher Degree of Code Frequency

	Prioritised N-KTSTSC± (KT strategy)	Frequency of coded segments under sub-category with higher degree of code frequency			
Dimension of KT Strategy	Sub-category of KT Strategy	HKBU	EdUHK	LU	Total
Enabling environment strategy	Enabling environment	26	34	3	63
Engagement strategy	Incentive	18	31	3	52
Implementation strategy	Applied research	8	30	9	47
Implementation strategy	KT Impact	9	20	18	47
Capacity building strategy	Capacity building	10	27	8	45
Enabling environment strategy	Institutionalisation	22	14	8	44
Engagement strategy	Engagement	1	23	13	37
Dissemination strategy	Accessibility	9	22	5	36
Engagement strategy	Incentive - Fiscal or resources	9	20	5	34
Implementation strategy	Partnership	16	10	6	32
Implementation strategy	Collaboration	8	10	13	31
Dissemination strategy	Marketing	7	22	0	29
Formulation strategy	KT model building	0	5	22	27
Engagement strategy	Engagement in local community	8	6	8	22
Implementation strategy	Entrepreneurial	20	0	0	20
Engagement strategy	Leadership engagement	7	9	3	19
Enabling environment strategy	Institutionalisation - Organisation Structure Establishment	10	4	4	18
Implementation strategy	Impact assessment	14	2	1	17
Implementation strategy	Networking	4	10	2	16
		171	274	121	636

Colour Key for the Dimension of KT Strategy	
Dimension of KT Strategy	Colour Key (Universally apply for the Dimension and its sub-categories)
Enabling environment strategy	Green
KT Engagement strategy	Yellow
Implementation strategy	Gold
Capacity building KT strategy	Orange
Dissemination KT strategy	Light blue
Formulation strategy	Blue
Protecting strategy	Light green

Step 8 was regarded as one of the essential processes for the systematic summary while facilitating data presentation and analysis at Steps 9 and 10 of the adapted TQTAP. The coded segment compilation procedure further enabled the construction of two types of thematic matrix in sequence order, especially under the systematic coding and segment-retrieving through the support of CAQDAS. These specific summaries of respective cases were then tabulated as another thematic matrix for establishing “case-related thematic summaries” of individual cases and thematic category-based “overviews” (hereafter as thematic overviews) (Kuckartz, 2014, p. 81 & p.83), a crucial step for cross-case synthesis and comparative analysis. To differentiate the two types of thematic matrix, one was named as ‘thematic matrix for individual case category-based summaries’ and the other as ‘thematic matrix for case-related thematic summaries and category-based overviews’. Two tables were constructed in Tables 4.22 and 4.23 to show the format and approach for developing different types of summaries, of which, prototypical examples are displayed in data presentation and analysis chapters.

Table 4.22

Format and Approach of Thematic Matrix for Individual Case Category-based Summaries

Thematic sub-category (e.g.)	2014-15	2013-14	2012-13	2011-12	2010-11	2009-10	M1	A1	Thematic Category-based
A	Coded segments of each thematic sub-category created from the empirical data of respective years of KT reports and first MTC summaries of respective interviewees at respective cells between the rows and columns								Summary created under each prioritised sub-category
B									
C									

Table 4.23

Thematic Matrix for Case-related Thematic Summaries and Category-based Overviews

Thematic sub-category (e.g.)	A	B	C	Summary
Case	Insert respective thematic category-based summary of the case concerned at respective cells between the rows and columns			Case-related thematic summaries derived from individual cases
HKBU				
EdUHK				
LU				
Overview	Thematic category-based overviews derived from respective thematic category-based summary across cases			Using summaries for cross-case synthesis

4.9.4 Complementary step – identification and application of CAQDAS. I applied CAQDAS, in particular, MAXQDA12, into the research for supporting systematic coding and segment-retrieving process as well as for data management, searching, coding, constructing codebooks, deriving matrices and maps, retrieving coded segments, facilitating the process of creating thematic summary, and preparing for thematic-based analysis. The application of CAQDAS was a complementary step to TQTAP from which different types of summaries specified in previous sub-sections were interpreted and summarised from the original empirical data. Correspondingly, the derived coded segments of the MTC and thematic sub-categories could be retrieved individually or simultaneously for interpreting repeatedly and citing evidences whenever necessary. The CAQDAS could further facilitate a progressive establishment of the case study database for easy cross-referencing and audit trail to enable review and quality enhancement.

Apart from justifying the application of CAQDAS, I also need to justify why the MAXQDA12 was identified and used. Amongst the packages of CAQDAS, there are quite a number of free or purchase-type software providing support in qualitative research. To name a few available on the Internet are QDA Miner Lite, Coding Analysis Toolkit, Aquad and Compendium (Predictive Analytics Today, 2017) while the purchase-types include ATLAS.ti, MAXQDA, NVivo and QDA Miner cited from the webpage of Qualitative Innovations in CAQDAS (QUIC) on the website of The University of Surrey (n.d.). Despite the fact that

relevant information about CAQDAS was non-exhaustive, a Google search helped to retrieve the most frequent websites/webpages/information related to the term CAQDAS on one hand. On the other hand, I deliberately based the information provided by QUIC and made reference to a few related studies (e.g., Hughes & Silver, 2011; Pettigrew, n.d.; Schmieder, 2014; Schönfelder, 2011) to compare the selected packages with reference to a few relevant, experience-based and trustworthy sources of information. Essentially, QUIC is a webpage managed by The University of Surrey in the UK whereby they have been funded by several streams of ESRC between 1994 and 2011 in research related to research methods and training (University of Surrey, n.d.). Of them, the funded CAQDAS Networking Project, the subsequent project of QUIC and the collaboration project of the Online QDA website were established with the “remit in providing information, advice, training and ongoing support in the use of a range of CAQDAS applications” without “any commercial ties” and “provide unbiased comparisons” of CAQDAS’s tools and applications (University of Surrey, n.d.).

Based on a review of the aforementioned information and comparison studies, I intentionally experienced weakness and application reflection of the mainstream packages of CAQDAS, namely ATLAS.ti, MAXQDA, NVivo and/or QDA Miner. As compared for its functionality and application, MAXQDA has certain advantages. These include more flexibility, efficient use of space – project seen on one screen, easiest to learn, excellent documentation, online support – textual and video, coding with visible document source, support a simple view of thematic matrix for case-oriented or topic-oriented perspective and analysis (Hughes & Silver, 2011; Schmieder, 2014; Pettigrew, n.d.). In addition, as being more economical to use the most updated student license education version of MAXQDA12. I viewed the demo of MAXQDA on the official website and decided to become familiar with it through application of a 30-day trial version in July 2015 to obtain actual experience on the reviewed advantages. Finally, I chose and applied MAXQDA to assist the TQTAP.

Chapter 5

Case Study of Hong Kong Baptist University's

Knowledge Transfer Strategies

5.1 Knowledge transfer in Hong Kong Baptist University (Why KT)

5.1.1 Historical background, vision and mission. Hong Kong Baptist College (HKBC), as a post-secondary college in 1956, was founded by the Baptist Convention of Hong Kong committed to the provision of whole person education. HKBC was fully-funded as public tertiary institution in 1983 (Hong Kong Baptist University [HKBU], 2016c). In 1994, it was entitled university status and renamed as Hong Kong Baptist University (hereafter HKBU) (HKBU, 2016c). HKBU is dedicated to academic excellence in teaching, research and service, and to whole person education holistically for inducing creativity, equipping knowledge, nurturing globalised attributes and widening horizontal perspectives (HKBU, 2016a). Over the years, HKBU has encouraged service to society among its staff and students and has gained a reputation as one of Asia's finest institutions of higher learning (HKBU, 2016c).

5.1.2 Academic profile and university's population. As of the 2015/16 academic year, HKBU comprises 3 faculties with 12 departments and 1 centre, 1 graduate school, 3 schools and 1 academy with 5 departments (Appendix 5.1). Of the populations within the University, there were 7,174 enrolled students (UGC, 2015b), 940 employed staff, of which 348 were categorised as academic staff and 592 as academic support and administrative staff (UGC, 2015a), and 5,295 graduates (HKBU, 2016f) in 2014/15. HKBU was ranked as 281st out of the annual league table of the top 800 universities in the world in the 2015/16 Quacquarelli Symonds (QS) World University Rankings. For the QS Rankings by subject and faculty, HKBU's Communication and Media Studies, and Arts and Humanities were ranked as 51 - 100 and 181 respectively while it was ranked 51st in Asia in the 2016 QS World

University Rankings by Region (QS Quacquarelli Symonds [QS], 2015a).

5.1.3 Research infrastructure and development of knowledge transfer. The research infrastructure in HKBU comprises internally 11 research institutes. One of the institutes (i.e., the Institute of Computational and Theoretical Studies (ICTS) includes 9 research centres serving as an interdisciplinary research platform), and 25 research centres in addition to the institutes, while there are three offshore research institutes located in the Mainland. Besides, a state key laboratory partnering with the Chinese Academy of Sciences was established with approval from the Ministry of Science and Technology of China in 2013 serving as an interdisciplinary research platform mainly for environmental, biological and material science (HKBU, 2016g - details in Appendix 5.2). The research institutes and research centres were constructed under the existing research infrastructure in HKBU. By a brief review of the introduction and/or research areas of the designated websites of the research units, they were categorised with the classification of disciplinary knowledge (Biglan, 1973) in terms of “soft-pure”, “hard-pure”, “soft-applied”, and “hard-applied”, and a mixture of “soft-pure-applied” or “hard-pure-applied” in general. Besides, their key KT areas were identified generally with two broad categories of non-technology and technology area of knowledge. (The classification process would also be applied to the other two cases in the following chapters). These research infrastructure, apart from individual academic staff, indeed, has become the sources of knowledge creation and fundamental basis for the development of knowledge transfer in both technology and non-technology areas in HKBU.

Commencing from the 2009-10 financial year, HKBU was allocated with “recurrent KT funding from UGC for new KT initiatives while it has many years of participating experiences in existing on-going KT activities, particularly in the areas of technology transfer (KTO/HKBU, 2010). Interviewee A1 from HKBU mentioned that ‘prior to the establishment of Knowledge Transfer Office, there were only around twenty patent applications while more

than hundred applications have been filed at the moment of interview' (i.e., August 2015) [outcomes]. In the past, there was an office under the purview of the Vice President (Research and Development), responsible for matters in relation to (technology) knowledge transfer. In fact, knowledge transfer was implemented before 2009. For instance, HKBU staff provided consultancy services to external parties like "train-the-trainers", i.e., teachers of social work and social sciences are responsible to train social workers and school teachers respectively on "how to guide or teach their students".

With the founding of the Knowledge Transfer Office (KTO) in 2009, both the KT areas of technology and non-technology transfer, in particular, through research and innovations, are institutionalised by university policy emphasising engaging academia to "relate research efforts to the community", patent scientific inventions, encourage collaboration through KT partnership, and nurture student entrepreneurship (KTO/HKBU, 2010). KTO aims to play the enabling and linking role between HKBU and the broader community as well as "to enrich research and inform teaching (KTO/HKBU, 2016b)".

Under the strategic development endorsed by Vision 2020 of the University, it targets to enhance international competitiveness and support learning and teaching through the core development of innovative research in the 10-year development plan of HKBU, amid the existing broad-based research. Apart from releasing research for potential and significant impacts on the society, HKBU encourages collaboration through interdisciplinary research and thematic base research for aggregating and extending the impacts of research, particularly in the four focus areas of – health, environment, Chinese and China studies, and cross-cultural studies (HKBU, 2016g).

5.2 Knowledge Transfer Strategy – The Study Case

With reference from the 6W-elements of the heuristic approach and the case study protocol, I divided the case study data presentation and analyses into six more sections

whereby some were further divided into a few sub-sections. The six sections included ‘what to be transferred’, ‘in what ways’, ‘to and by whom’, ‘with what effect’, ‘management and administration perspective’, and ‘case conclusion - the HKBU model’. Among the following sections, I address RQ1 and 2 to the HKBU case through data presentation and analyses of the KT strategy formulation, dissemination, implementation, and evaluation in the KT strategy process. Then, I summarise the observed KT model and the case conclusion of HKBU. Data presented in the following sections were mainly derived from HKBU’s 6-year KT reports, strategic plan, annual reports, designated website, interview transcripts from the management and administration perspectives, and some other sources relevant to KT and HKBU.

5.2.1 Planned KT--The objectives, strategies and management structure

5.2.1.1 Formulation of knowledge transfer strategy (what to be transferred)

5.2.1.1.1 KT organisation and objectives. In order to “match the needs of the community at large with the strengths of HKBU, to work in partnership with members of HKBU to proactively contribute to the community, and enable knowledge transfer as the third pillar of HKBU (KTO/HKBU, 2016b)”, the Intellectual Property Committee (IPC) was dissolved and restructured. It became the Knowledge Transfer Committee (KTC) in 2008 so as to adapt to the development and balance needs of knowledge transfer in the technology and non-technology areas (HKBU, 2012a). KTC was formed by a group of senior management and senior academic members, which is designated for the strategic management of intellectual property rights (IPRs) related matters, and strategic development of technology and non-technology areas of KT. With the subsequent establishment of the KTO in 2009, a team of KT management and administration experts were formed to support the promotion and education of KT as well as the implementation of KT services and strategies within the university community (HKBU, 2012a). It aims at “providing professional customer-oriented knowledge transfer services” to those they serve so that their aspirations as “an enabling

catalyst, a supportive bridge, a facilitator in research and teaching, and a driving force in realizing the best regional provider of whole person education (KTO/HKBU, 2016b)” could be achieved.

5.2.1.1.2 Strategic plan for the decade. In Vision 2020, HKBU attempts to strategically integrate ‘Quality Teaching and Learning’, ‘Innovative Research and Community Engagement’ through knowledge transfer effectively so as to achieve the Vision of becoming “the regional leader in whole person education that delivers academic excellence and innovation (HKBU, 2014)”. Apart from bringing university experts from all over the world through pioneering programmes, such as the Pulitzer Prize Winners Workshop, the International Writers Workshop, the Consul-General-in-Residence Programme and the European Union Academic Programme (QS, 2015), “HKBU aspires to be a premier institution of higher learning providing broad-based, creativity-inspiring education with distinctive contribution to the advancement of knowledge through research and scholarship (HKBU, 2016d)”. Besides, “HKBU has established partnerships with institutions in Mainland China and runs a number of collaborative projects (HKBU, 2016d)” so that their regional and international competitiveness could be gradually enhanced. Indeed, HKBU has planned long-term commitments for KT development aligning with one of the strategic themes of “dedicated service to the community” of the Vision 2020 (HKBU, 2011, November). Therein, “identification of community needs for matching with HKBU strengths and proactive contribution to community through knowledge transfer” (KTO/HKBU 2011, p. 5) become the strategic direction for KT development in HKBU.

5.2.1.1.3 Knowledge transfer in the context of HKBU. Referring to the two interviewees of HKBU on the KT context, they briefly summarised the underpinning forces of and reasons for knowledge transfer. The interviewee from the management side (M1) specified,

What kind of (KT) activities could render the utmost value and return to the university, particularly when HKBU is neither a commercial company nor emphasised how to maximise its profits [anticipations]. Under this context, time, value and idea are the wealth for the university [processes]. Hence, "knowledge" or "idea" are derived in the institutional context from university teachers and students whose willingness to transfer or not is key to the implementation of KT in the university [anticipations]. Then, the work of KT itself needs much intensive time for the supportive team in HKBU to facilitate its progress within the context of university [processes]. Lastly, the value of KT is to contribute to the community through matching with the strengths of HKBU [anticipations]. These are in fact manifested clearly in the mission and vision of KT in HKBU [outcomes].

In addition, the interviewee from the administration side (A1) spelt out that, KTO established two major fund schemes which aim to encourage staff to provide KT services to the community with external partner through the Knowledge Transfer Partnership (KTP) Seed Fund and demonstrate the industrial potentials of their inventions and technologies through Matching Proof-of-Concept Fund (MPCF) [outcomes]. The KTP is mainly focused on KT in collaborating with Government or other major stakeholders [anticipations]. The MPCF focuses on technological areas that are of key economic benefits to the society and associated with the impact of patents [anticipations]. KTO is committed to match the needs of the community at large with the strengths of HKBU [anticipations], to work in partnership with members of HKBU to proactively contribute to the community [processes], and to enable knowledge transfer as the third pillar of HKBU [anticipations].

5.2.1.1.4 Organizational structure and management function in KT strategy

Formulation. Notwithstanding the fact that concept and practice of Technology Transfer (TT) has long been established at HKBU, the non-technology aspects of knowledge transfer, such as knowledge in arts and humanities, were conceptually new to the academic staff of HKBU and the local higher education sector (KTO/HKBU, 2010 and KTO/HKBU, 2012a). The unfamiliarity of KT terminology and its strategic practices (e.g., KT partnership model) were particularly observable before and at the beginning of KT promotion and

cultivation within HKBU commencing with the new initiative of UGC KT recurrent funding in 2009/10 (KTO/HKBU, 2010). In order to encourage, facilitate and engage faculties to participate in KT by linking their research knowledge to impact the community, a priori strategy was to institutionalise KT of HKBU by assurance of KT as the university policy (i.e., the third pillar of university apart from teaching and research) in the University Strategic Plan 2009 – 2015 (KTO/HKBU, 2010). In fact, strategy planning for KT development in the University was first aligned with the restructuring of governance and establishment of KTO as early as 2008 and August 2009 (i.e., one month after the launch of KT funding in July) respectively (KTO/HKBU, 2012a).

The restructured KTC, responsible for a full scope of KT related policies and its strategic development, is an 11-member committee. Currently, it comprises of senior management and senior academic members, whereas, in its formation in 2008, it was only a 6-member committee of which only the chairman, VP (R&D), Head of KTO and Dean of Arts is still in the member list (KTO/HKBU, 2012a and KTO/HKBU, 2015). Figure 5.1 represents the current management and organisational structure of KTC whom are taking in-charge of strategic planning and development of KT in the University.

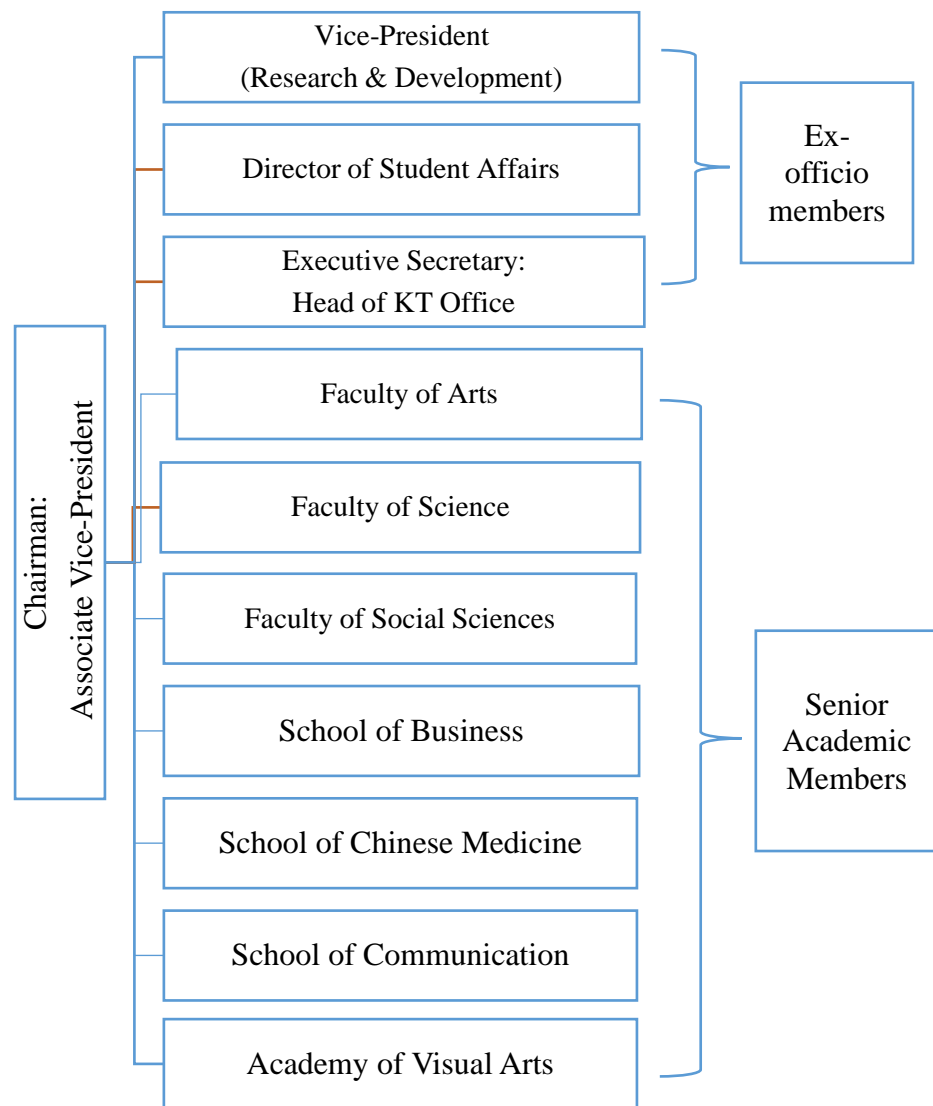


Figure 5.1. Management and Organisational Structures of Knowledge Transfer Committee (Source: Website of KTO, HKBU. Quoted as at 8 May 2016).

5.2.1.1.5 Knowledge transfer funding sources – driving for initiatives. The major funding sources for delivering and operationalizing institution's overall knowledge transfer strategies through different mechanisms, such as KT Partnership Projects and KT Award, are mainly derived from the University Grants Committee Knowledge Transfer recurrent funding. This commenced from the financial year of 2009-10 while additional funding support from the Technology Commission's (ITC's) Promotion of Innovation and Technology (PIT) is other source particularly for strategy implementation for the development of technology transfer (HKBU, 2010 to 2015). Besides, KT through TT in HKBU is also supported by some scheme- and institution-based funding. This includes the Technology Start-up Support Scheme for Universities (TSSSU) supported by the Innovation and Technology Fund (ITF) of the Innovation and Technology Commission and funding from the University via the HKBU R&D Licensing Limited (KTO/HKBU, 2014). Among different sources of KT funding, the allocations were partly dispersed through different KT mechanisms designated with similar or various knowledge transfer strategies for the purpose of knowledge transfer in technology or non-technology areas and of linking academia's research knowledge to impact the community at large. Specifically, some of the strategies aim to facilitate KT from academia to industry and 'participation amongst staff and faculties through the process of information and data facilitation' (Interviewee M1) [anticipations] as well as 'broaden their [local students of HKBU] perspectives and [to] think about how their knowledge or business ventures can contribute to Hong Kong' (Interviewee A1) [anticipations]. Table 5.2 lists out different types of schemes or awards initiated by HKBU, of which they are directly or indirectly related to the funding sources for KT, illustrated with resource implications and broad areas of KT in technology (KTTA), non-technology (KTNTA) and entrepreneurial aspects (KTEA).

Table 5.1

Different Types of Schemes/ Awards Initiated by HKBU from 2009/10 to 2014/15

Types of Schemes or Awards	Kick Start in	Major Source of Funding	What to be Transferred
KT Partnership Projects (KTP)		UGC	KTTA/KTNTA
KT Award (KTA)	2014	UGC	KTTA/KTNTA
Innovationem Award (IA)	2013-14	PIT	KTTA
Technology Start-up Support Scheme for Universities (TSSSU)	2014-15	ITF	KTTA
Matching Proof-of-Concept Fund (MPCF)		UGC	KTTA
Entrepreneurship Challenge (E-Challenge)	2012	SDF ¹²	KTEA
Entrepreneurship Space (E-Space)		SDF	KTEA
Entrepreneurship Sharing and Networking (ESAN)		SDF	KTEA

Source: HKBU Annual Reports on KT Recurrent Funding – 2009/10 to 2014/15.

Regarding the proportion of UGC KT recurrent funding allocated to HKBU amongst the eight UGC-funded institutions was relatively small (ranked 6th) with an annual funding of 2.8 to 3 million Hong Kong dollars from 2009/10 to 2014/15, inclusive of the KT Award which was launched in 2014 and sponsored by UGC KT funding (KTO/HKBU, 2014 and UGC, 2010-2015). It aims at rendering recognition to HKBU colleagues/teams for KT projects with utmost value for community engagement and encouraging contributions and impacts for the community at the society and HKBU (KTO/HKBU, 2014). Apart from the designated grant for KT initiatives, sources of academic/applicable knowledge and innovations were mostly derived from academia's research. These were either supported by different types of research grants from the Research Grants Committee (RGC)/UGC or external sources of funding from the community/industry. These are, indeed, important sources of research-based knowledge fundamental for the KT initiatives and strategies to be implemented by HKBU. Table 5.2 lists out different types of research grants and designated type of KT grants for HKBU retrieved from the UGC-funded institutions' statistics between the financial years of 2009/10 to 2014/15.

¹² The HKBU Business Entrepreneurship Support and Training (BEST) was launched in 2012 and supported by HKBU's Strategic Development Fund (SDF) (HKBU, 2013). [KT Annual Report, 2012-13]

Table 5.2

Different Types of Research Grants and Designated Type of KT Grants for HKBU from 2009/10 to 2014/15

Type of Grants	Financial Year	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
		Hong Kong Dollars in Millions (\$m)					
RGC Earmarked Research Grants		28.0	45	34.6	39.2	37.7	50.6
Areas of Excellence Scheme		-	-	-	-	1.5	1.5
Grants for Knowledge Transfer Activities		3.0	3.0	2.8	2.8	3.0	2.9
Theme-based Research Scheme		-	-	-	0.8	1.2	1.2
Total		<u>31</u>	<u>48</u>	<u>37.4</u>	<u>42.8</u>	<u>43.4</u>	<u>56.2</u>

Sources: Grants for UGC-funded institutions from 2009/10 to 2014/15 (2010-2015) and KTO/HKBU (2015).

5.2.1.1.6 *What to be transferred under the formulated KT strategies.* As early as 2008/09, HKBU appointed two new Associate Vice-Presidents preparing to meet the challenges deriving from development in the Mainland and knowledge transfer, in particular of KT has becoming an essential development area amongst the UGC-funded institutions (HKBU, 2009). In addition to policy support (e.g., inclusive of KT in the University Strategic Plans) and management strategy (e.g., deployment of senior management for KT development) in KT development, was the adoption of an institutionalisation strategy. This was the result of restructuring IPR into KTC and the establishment of KTO for providing full scope support in strategic planning, development, dissemination and implementation of KT in HKBU. Apart from the implicit message of readiness for and emphasis on KT development through the institutionalisation strategy in governance and organisation structure, other KT strategies have been formulated and implemented at both institution-based (i.e., policy) and academia-based (i.e., implementation) levels.

In order to substantiate what kinds of KT strategies have been formulated by the institution as well as what were transferred under the formulated KT strategies, I have

employed the adapted TQTAP and the 6W-elements of the heuristic approach to search for KTS in HKBU. Details of both applications were described and explained in Chapter 4 while specified data in relation to and crucial for the formulated KT strategies and the aspects of the 6W-elements of HKBU were consolidated in the following section ‘KT strategies illustrated with examples’ and Appendix 5.3 respectively. Only specified data with relevancy are selectively presented in this and the following sections/sub-sections of this chapter.

5.2.1.1.7 Formulated KT strategies in HKBU. A finalised total of 911 coded segments with 61 KTS related thematic sub-categories were generated from the empirical data into seven dimensions (please see Figure 4.5 in Chapter 4), of which six were applied to the three cases with the exception of ‘protecting strategy’ (i.e., it is only applied to HKBU and HKIEd). Out of 911 coded segments, HKBU has constituted around 34% (i.e., 309) of the total, whereas, 49 KT strategies were coded and generated within the 61 consolidated KTS related thematic sub-categories.

Referring to Table 5.3, the code frequency against the seven dimensions of KT strategies across six academic years and two interviewees’ perspectives were horizontally generated for the case of HKBU with the ‘implementation strategy’ denoting the highest code frequency (i.e., 108) while the ‘formulation strategy’ denoted the lowest (i.e., 6). In contrast, the code frequency over each academic year were vertically generated with ‘2009/10’ denoting the highest code frequency (i.e., 55) while ‘2014/15’ denoted the lowest (i.e., 37), in which interviewees’ perspectives were excluded from this time series comparison.

In tandem with the broad dimension of the formulated KT strategies in HKBU, the frequency order from the highest to the lowest code frequency over the academic years and against each academic year were indicated by the sequence order of “1” denoting the highest while “7” denoted the lowest. Table 5.3 was constructed for an overview of KT strategy formulation and development in each academic year and over the years while the frequency

order did not necessarily imply a sequence of importance for the KT strategies formulated in HKBU. It would be more likely a matter of stages of KT development in HKBU, whereas, the dimensions of KT strategies with higher code frequency manifesting the prime foci and strategic directions of the KTC and the KTO as well, particularly for a specific point of development. For the aggregated code frequency of each dimension derived from the management and administrative side of interviewees, it can be interpreted as general perspectives from the interviewees whereby the level of code frequency amongst the seven dimensions may reflect personal experiences and understandings of KT and its process of implementation.

Table 5.3

Overview of KT Strategy Formulation and Development in Each Academic Year and over the Years in Frequency Ranking in HKBU

	Academic Year	6- years	09/10	10/11	13/14	11/12	12/13	14/15
Dimensions of KT Strategy	Sum for Each Year*	<u>283</u>	55	54	53	45	39	37
	Sum over the Years**	Frequency Ranking (Code Frequency)						
Implementation	108	1	1 (24)	1 (23)	1 (21)	2 (14)	1 (12)	1 (10)
Enabling Environment	65	2	2 (12)	2 (14)	6 (3)	1 (15)	2 (9)	2 (6)
Engagement	58	3	4 (5)	3 (6)	2 (10)	4 (5)	1 (12)	1 (10)
Capacity Building	26	4	3 (9)	4 (5)	4 (6)	6 (0)	4 (1)	3 (4)
Dissemination	23	5	6 (2)	5 (3)	3 (8)	5 (4)	4 (1)	3 (4)
Protecting	23	6	5 (3)	6 (2)	5 (5)	3 (7)	3 (3)	4 (3)
Formulation	6	7	7 (0)	7 (1)	7 (0)	6 (0)	4 (1)	5 (0)
	<u>309</u>							

The single * represents an exclusive sum of interviewees' perspectives while the double ** represents an inclusive of interviewees' perspectives.

To complement the descriptive and qualitative manifestations of Table 5.3, I have summarised the strategic foci of KT development in HKBU from the KTO's Annual KT Reports from 2009-10 to 2014-15 to demonstrate the formulated KT strategies in HKBU for a given period of the case study. Nevertheless, the list of KT strategic focus are arranged from the highest code frequency order to the lowest as in terms of the dimensional KT strategies

(1st tier of KTS) embedded with the strategic directions of HKBU. Typical examples of the embedded thematic sub-category of KT strategies (e.g., 2nd tier of KTS) of which those with a code frequency of 5 and above (cross reference to Appendix 8.1 and 8.2 of Chapter 8 for details) were included with illustrations (HKBU, 2010 to 2015).

The dimensional and thematic KT strategies illustrated with examples included:

1. Implementation

- a. Entrepreneurial strategy
e.g., promote student entrepreneurship through training, spin-out activity and intellectual property seminar etc.
- b. Partnership strategy
e.g., support KT initiatives through KTP, particularly in arts and humanities.
- c. Impact assessment strategy
e.g., develop KT impact assessment framework to streamline both qualitative and quantitative impact analysis applying to both technology and non-technology areas of KT.
- d. Impact strategy
e.g., encourage KT initiatives with substantial, constructive impact with sustainability and/or fundamental transformation with long term benefit(s) to the community.
- e. Engagement in local community strategy
e.g., KTP as a flagship initiative for encouraging community engagement.
- f. Applied research strategy
e.g., provision of resources and assistance to academics for the purposes of encouraging and facilitating applied research to enhance innovation and inform teaching.
- g. Collaboration strategy
e.g., create synergy through collaboration in KT initiatives and facilitate the exchange of innovative ideas.
- h. Technology transfer strategy
e.g., systemise patent application and contracting procedures to reinforce the extent and effects of technology transfer.
- i. Non-technology KT strategy
e.g., through financial support from KTP Seed Fund pursuing KT in arts and humanities to make significant social and cultural impacts.

2. Enabling Environment

- a. Institutionalisation strategy
e.g., institutionalising KT as a standard practice, along with teaching and research.
 - b. Organisation structure establishment strategy
e.g., institutionalised KT through the establishment of KT Committee for policy and strategy direction while the KTO as policy executive.
 - c. Culture establishment strategy
e.g., incorporated KT elements into staff's performance review policy to raise awareness of KT and motivate for initiating KT activities.
3. Engagement
- a. Incentive strategy
e.g., establish, update and systemise guidelines and procedures to reinforce participation in KT through backing, incentive and recognition mechanisms.
 - b. Fiscal or resources strategy
e.g., set aside funding to support KT initiatives for encouraging and engaging faculties to collaborate with community partners for mutual benefits.
 - c. Leadership engagement strategy
e.g., engage academic staff to serve in the KTC by term for the provision of full-spectrum advice on all academic disciplines and KT matters.
 - d. Student engagement strategy
e.g., launched the Business Entrepreneurship Support and Training (BEST) programme in order to engage students to transfer knowledge through the startup ventures and become entrepreneurs.
4. Capacity Building
- a. Capacity building strategy
e.g., organise visits outside Hong Kong such as Beijing and London visit in 2010, for capacity building through policy and experience sharing in arts and humanities.
 - b. Professionalisation strategy
e.g., offering professional development and continuing education courses to respective industries for meeting their Continuous Professional Development needs.
 - c. Cultural change strategy
e.g., promote through real case KT experience sharing, campus-wide promotion and education activities to enhance the awareness of, cultivate a culture, and change the mindset amongst staff of HKBU.
5. Dissemination
- a. Accessibility strategy
e.g., making research knowledge into simple language and format through video production and disseminating through website and the HKBUtube to the public.

- b. Marketing strategy
 - e.g., to showcase impact case KTP projects through different channels have induced marketing effects to promote KT within and outside HKBU.
 - c. Proactive approach in promoting KT
 - e.g., internally and externally reaching out for catering different needs and exploring further collaboration opportunities.
- 6. Protecting
 - a. Commercialisation strategy
 - e.g., established Matching Proof-of-Concept Fund facilitating for prototype development of possible commercialisation.
 - b. Patent strategy
 - e.g., protecting intellectual property and inventions through support in patenting and licensing, and standardization of T/T procedures.
 - c. Intellectual property right strategy
 - e.g., advocate proper management and protection of IPRs to nurture KT initiatives.
- 7. Formulation
 - a. Professional customer-oriented strategy
 - e.g., put emphasis on people by providing professional customer-oriented KT services to promote, enable and facilitate KT amongst staff and students.

Since formulation strategy was the lowest code frequency order amongst the seven dimensional KT strategies, it is included in this section for comprehensive illustration. Nevertheless, this formulation strategy was not emphasised much in HKBU's strategic focus that the sum of frequency only denoted six over the years. With its established experience in technology transfer prior to the development of KT and its progressive KT development, there seems to be no necessity for HKBU to formulate intentionally a specific KT model through a trial and error approach or to develop and establish KT. However, HKBU has adopted a professional customer-oriented strategy, formulated through their interactive experiences and established value, in providing KT services to all they serve.

To sum up, an overall progressive trend of HKBU's KT development was observed and established in association with the formulated, adopted and implemented KT strategies over the years. Apart from the relatively intensive implementation strategy in different kinds of KT initiatives/activities, the build-up of the KT environment in HKBU through institutional

policy and institutionalisation process commencing from the groundbreaking year of 2009/10 became essential for the creation of an enabling environment facilitating for KT development. Aligning with a gradual establishment of the enabling environment, the need to engage academic staff and university students participating in KT projects and activities is deemed crucial for the development of KT as well as the engagement of the community in collaboration for KT endeavours. In addition to the progressive engagement strategy, capacity building mechanisms have been formulated and launched by KTO whenever necessary over the years. Despite the code frequency of the formulated dissemination, protecting and formulation strategy was on the low side, they still come into position via certain strategies. These included publications, patenting and long-term commitment, so as to complement the progressive and balancing development of technology and non-technology areas of KT in HKBU.

In addition to Table 5.3, an extended format of the dimensions of the formulated KT strategies of HKBU by sub-category and code frequency was created and set out in Appendix 8.2 as cross reference. A total of 49 KT strategies were coded and generated within the 61 consolidated KTS related thematic sub-categories while 12 KTS had any relevant coded segments derived from the collected data. Out of a sum of 309 coded segments, the sum of code frequency against the 49 formulated KT strategies across six academic years and two interviewees' perspectives were horizontally generated for the case of HKBU. The 'institutionalisation strategy' of the enabling environment denotes the second highest code frequency (i.e., 22) while a total of nine KT strategies, such as 'information technology strategy, train-the-trainer strategy, knowledge carrier and innovation strategy', denoted the lowest (i.e., 1). Nevertheless, the frequency ranking did not necessarily imply a sequence of importance for the KT strategies formulated in HKBU. It, indeed, reflects a need-to-practical basis of KTS development in HKBU.

5.2.1.1.8 What to be transferred in HKBU. Under the Descriptive Framework, data immersed in the 6W-elements of ‘formulation of KT strategy’ refers to ‘what to be transferred’ in HKBU both at the policy/institutional and implementation level. In general, the ‘what-element’ referring to the KT areas, such as technology (e.g., scientific innovation) and non-technology area (e.g., arts and humanities), to be transferred while literary creativity, social concern issues in education, best practices and latest development in the media industry, and inter-disciplinary science (KTO/HKBU, 2010) are specific areas of explicit and/or tacit knowledge. Those knowledges were more likely transferred during the process of project operation, interaction and/or collaboration at the implementation level. In contrast, some of the ‘what-element’ referring to the KT areas, such as proposition (e.g., award offering criteria) or procedure (e.g., patent application flowchart) areas, to be transferred while criterion-based assessment of KTP Seed Fund applications, patent application and audit procedures (KTO/HKBU, 2012b) are specific areas of policy-based and/or technical-based knowledge. Those knowledges were more likely transferred during the process of policy or procedural introduction and implementation at the policy/institutional level. By reviewing and scrutinising the consolidated details in Appendix 5.3, I have drawn Figure 5.2 with a few typical examples for conceptualising and summarising ‘what to be transferred’ in HKBU over the KT reporting years of KT strategy formulation and implementation.

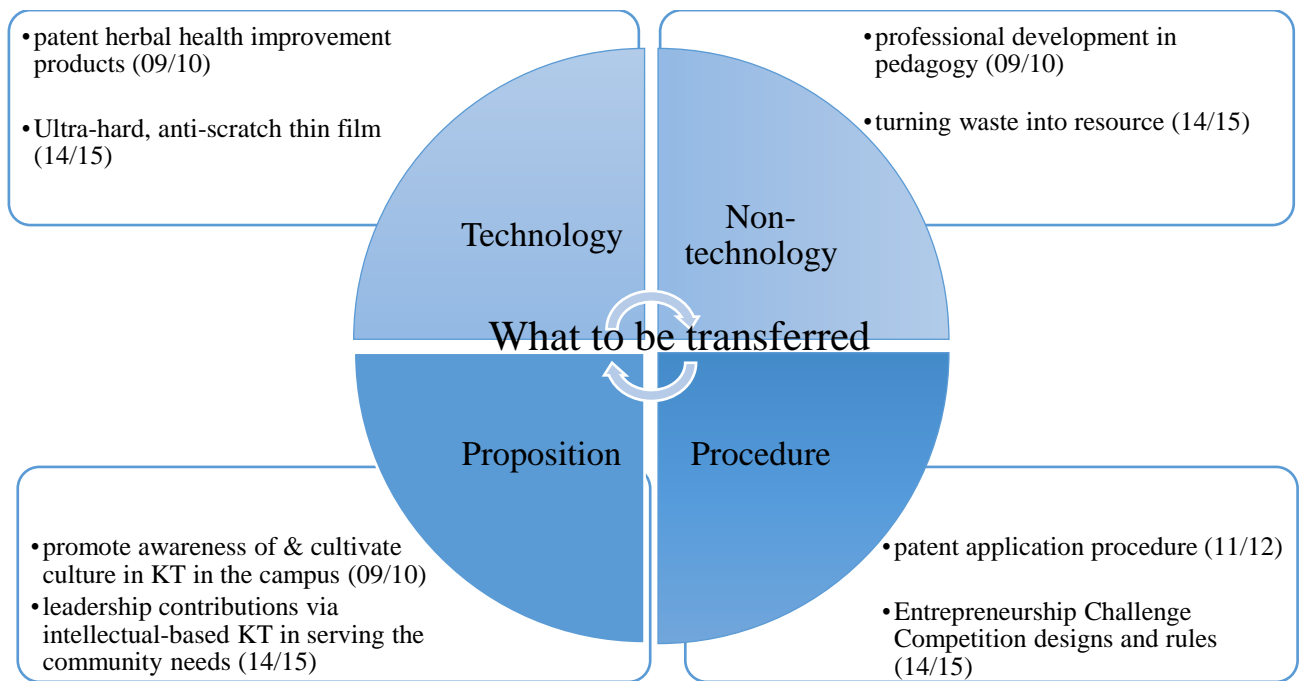


Figure 5.2. Conceptualised Examples of ‘What to be Transferred’ in HKBU (HKBU, KT Reports 2010 - 2015).

5.2.2 Implemented KT--what HKBU did, how, and outcomes.

5.2.2.1 Dissemination of knowledge transfer strategy (in what ways). By revisiting Q2 of “how have the institutions disseminated and implemented the KT strategies?”, this could be with regard to the ways adopted by the Institution to disseminate the formulated KT strategies. For example, professional customer-oriented strategy and entrepreneurial strategy and the key stakeholders (i.e., to/with whom and by whom) involved during the implementation process, which the later will be presented in following section. Under the Descriptive Framework, data immersed in this 6W-elements section of ‘dissemination of KT strategy’ referring to ‘in what ways’ the strategies in HKBU were disseminated.

In addition, the roles and functions of the established KT Office, who are under the organisational and management structure of KTC in HKBU, could facilitate their reaching out to academic departments, faculties, students and even the community for disseminating and implementing the formulated strategies accordingly. The establishment of the KTO in 2009 was emanated from the institutionalised strategy of HKBU. Its physical formation with a team of three staff in the initial founding year was designated with the responsibilities in assisting the KTC to fulfill its mission was, indeed, a formal dissemination of the institutionalised strategy by making KT a routinised practice within the campus, not to mention, KTO’s progressive and institutionalising development over the years.

As of 2016, KTO has developed into a formal management function with a comprehensive development of five designated teams, namely Knowledge Transfer Partnership (KTP) Team, Technology Transfer (TT) Team, Business Entrepreneurship Support and Training (BEST) Team, Administration Team, and Supporting Team, comprising a total of 14 KT officers/supporting staff (Figure 5.3) (KTO/HKBU, 2016e). In March 2014, HKBU R&D Licensing Limited was founded as a registered subsidiary company by HKBU “responsible for the commercialization of intellectual properties (IPs) for HKBU

(KTO/HKBU, 2016g). In addition to overall management and advisory functions of the KT Committee, an Advisory Committee was established by comprising “business and entrepreneurial experts within and outside HKBU” for a 3-year term in giving advice to the “development and operations of the HKBU BEST Programme, which was launched in 2012” (KTO/HKBU, 2016d). Actually, the KT management and implementation teams of KTO itself, its roles and functions in campus, and the vision, mission and values of KT have already embedded obvious and relevant messages of KT strategies in HKBU. These were disseminated through various channels, such as the KT staff/ambassadors, website, annual reports, HKBUtube, and the process of KT strategy implementation as well. To illustrate ‘in what ways’ adopted by HKBU for disseminating the formulated KT strategies, I have consolidated some specific message examples of the disseminated KT strategies associated with possible channels of dissemination, whereby details are set out in Appendix 5.4.

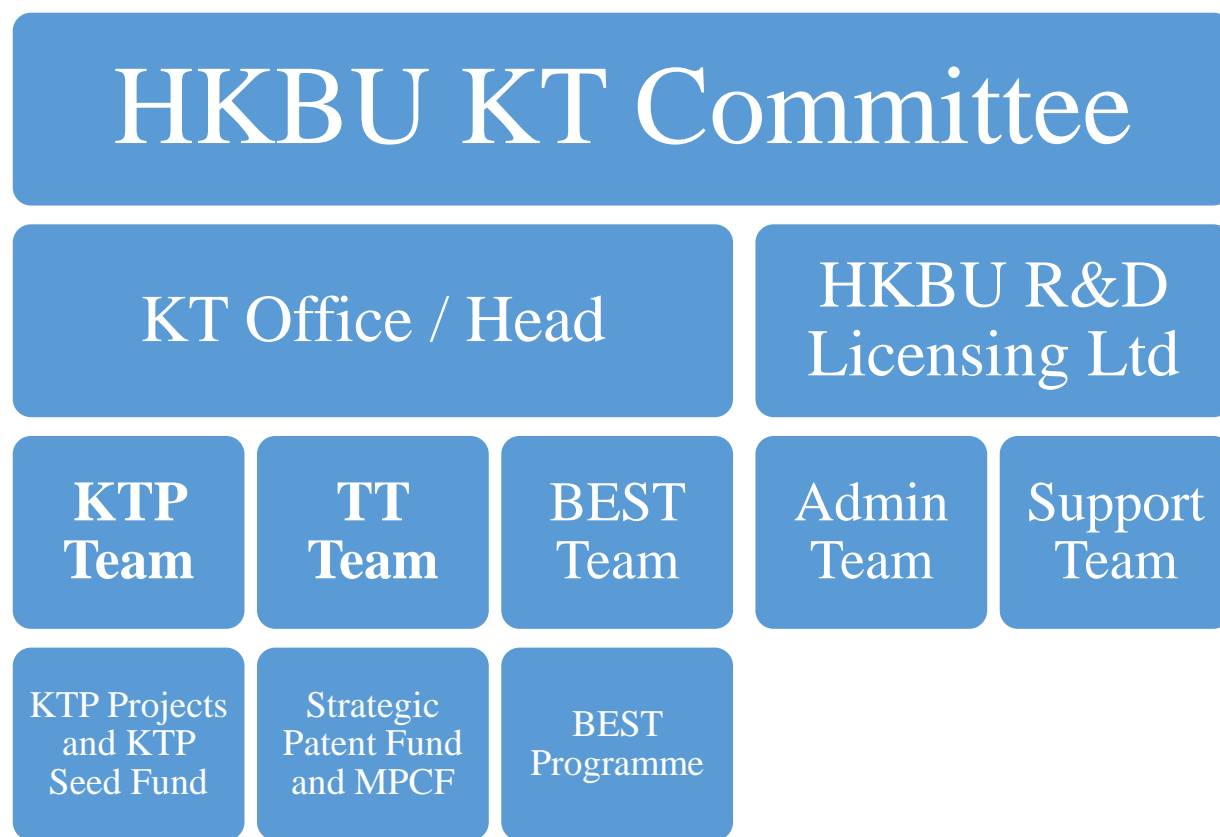


Figure 5.3. Management and Implementation Function of KTO in KT Strategy Dissemination
 Source: KTO/HKBU, 2016e.

Key: MPCF: Matching Proof-of-Concept Fund.

Prior to the present disseminated message of KT strategies, I need to emphasise that the name and functions of the KT teams have already explicitly disseminated the KT emphases on KT partnership, technology transfer and business entrepreneurship of which those were at least regarded as the major part of the KT strategies that KTC/KTO intended to promote and develop in HKBU. For example, the KT Partnership Projects implemented through the KTP model was a typical strategy for engaging both academia and community as well as enhancing KT effectiveness in the community (HKBU, 2011). This KT partnership strategy was disseminated through the proactive approach of KT associates/ambassadors (KTAs) (e.g., KT Project officers/graduates) by lining up potential collaborations between academics and industry (HKBU, 2011) on one hand. On the other hand, the KTAs have also been responsible to promote KT concept amongst HKBU's academia/students and bring up possible KT elements into KTP projects wherein embedded with the KT culture establishment strategy (HKBU, 2011). For technology transfer itself, it has long been regarded as an overall strategy in HKBU for transferring knowledge as in terms of innovations and inventions, whereby KTO served for promotion of intellectual property protection awareness and professional assistance in "patent applications and commercialization" of the IPs of HKBU (KTO/HKBU, 2016c). Hence, their emphases denoted the strategic needs of protecting IPs through awareness promotion of IP rights, patenting, licensing and commercialisation process and procedures accordingly. A specialised team was also setup within KTO entrusted with the responsibility to apply the entrepreneurial strategy for the promotion and implementation of the campus-wide BEST Programme. This was inclusive of entrepreneurial related seminars, workshops, trainings, services, competitions and provision of resources and equipment, for the nurturing of entrepreneurship on campus (KTO/HKBU, 2016a). In Appendix 5.4, the quoted examples of disseminated message of KT strategy are not exhaustive while the same message could disseminate more than one strategy. Normally, I would cite one example only

for simplicity. A brief introduction of ‘how’/in what ways HKBU disseminated the planned KT strategies is appended below while more details can be referred to in Appendix 5.4.

Ways of disseminating with KT strategy examples included:

1. KT staff
 - a. e.g., “community engagement...aims to encourage... staff and/or students...serving the community needs...by participating...through KTP Seed Fund and MPCF” (M1, August 2016) [processes] had disseminated engagement in local community through incentive strategy.
2. KT Website
 - a. e.g., “...a supportive bridge between the broader community and HKBU...” (KTO/ HKBU, 2016b) had disseminated a networking strategy.
3. KT Publications
 - a. e.g., Expert Talk at HKBU Horizons has an interview with Dr. Lui talking about inclusive education and the importance of “playful parenting” (HKBU, 2015d) had disseminated expertise strategy.
4. Multi-media
 - a. e.g., production of HKBUtube with Dr. Hu of HKBU talking about the invention of a cloud-computing middleware (Hu, 2012) had disseminated technology transfer strategy.
5. 6W-element of ‘in what ways’ of the ‘dissemination of KT strategy’
 - a. e.g., with assistance from KT ambassadors, they have proactively promoted the concept of KT within HKBU (KTO/HKBU, 2014) had disseminated proactive strategy.

5.2.2.2 Implementation of knowledge transfer strategy (to/with whom and by

whom). The former part has revisited the ways adopted by the institution to disseminate the formulated KT strategies while this section attempts to present the key stakeholders (i.e., to/with whom and by whom) involved during the implementation process of KT strategies. Of the same principle under the Descriptive Framework, relevant data were immersed in this 6W-elements section of ‘implementation of KT strategy’ referring as ‘to/with whom and by whom’ the strategies in HKBU were implemented. **Certainly, designated roles and functions**

of the KT Office, the specialised funding scheme and strategic projects manifested as

management and implementation function in KT strategy dissemination in Figure 5.3 were

presented with an overall KT strategy-to-be disseminated through the KT teams and the specialised KT mechanisms. These were more of management- and promotion-oriented. In contrast, the key stakeholder function in KT strategy implementation were inclined to be operation-oriented. For example, the implementation of partnership strategy under the International Writers Workshop has the operational needs to involve both internal and/or external KT key stakeholders, i.e., academic staff (internal) collaborated with external writing scholars for benefiting the community (external). For the implementation of the fiscal/resource strategy under the KT Award, it involved the KT Office and academic staff of HKBU (internal) for processing a list of exemplar KT projects implemented by the academia to finalise the awardee(s) according to the criteria of the KT Award. Figure 5.4 was created to visualise an overview of the key stakeholder function in KT strategy implementation while specific examples of internal (by whom) and external/internal (to/with whom) KT key stakeholders are illustrated in Appendix 5.5 as supplementary information to the schematic diagram in Figure 5.4.

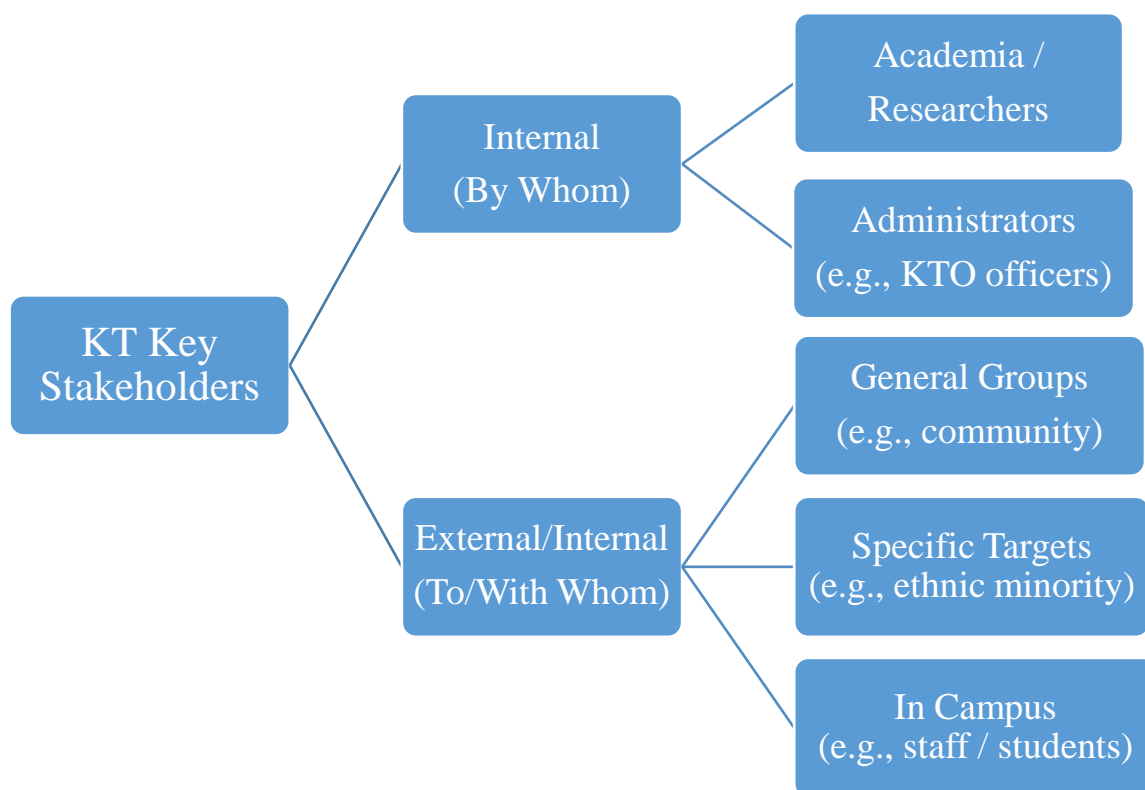


Figure 5.4. Key Stakeholder Function in KT Strategy Implementation.

To answer one of the research questions of “how has HKBU implemented the KT strategies?”, the schematic diagram in Figure 5.4 and specific examples in Appendix 5.5 for KT strategy implementation have already illustrated with whom at different levels (e.g., academia at operation/community and administrators at the management/institutional level) would be responsible for strategy implementation. Essentially, HKBU has implemented relevant KT strategies with different stages of emphasis through KTO officers and academia from different faculties/departments accordingly as in terms of KT development and community needs over the years. Major milestones of KT development in HKBU were constructed in Figure 5.5 to facilitate interpretation of those relevant KT strategies formulated and implemented over at least 6-years of KT development in the chapter of analysis.

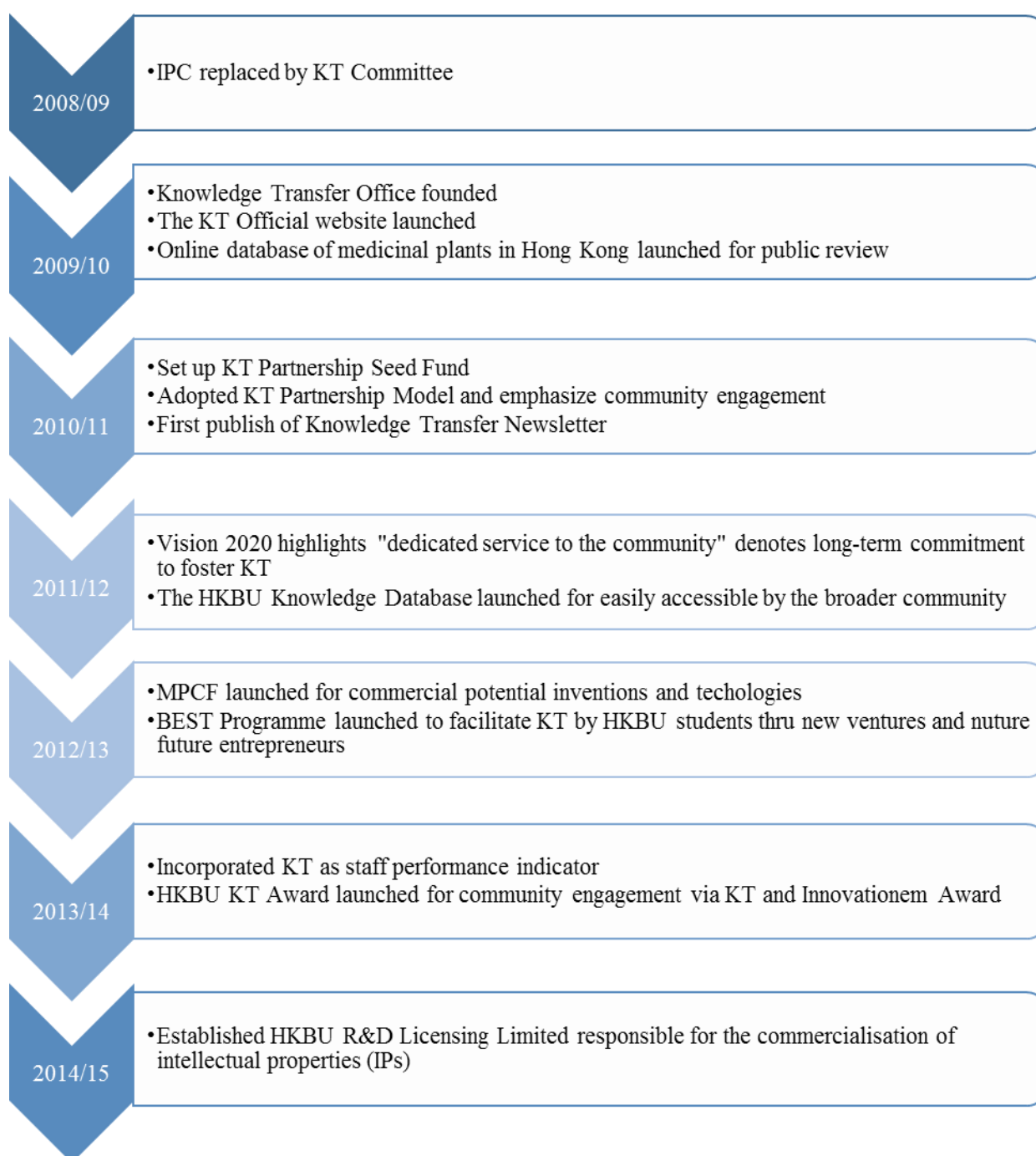


Figure 5.5. Major Milestones of KT Development from 2008/09 to 2014/15 in HKBU
(Source: KT Annual Reports 2009/10 to 2014/15).

5.2.2.3 Evaluation of knowledge transfer strategy (with what effect). Lastly, the 6W-elements of ‘with what effect’ of which it involved an overall evaluation of KT strategies formulated, disseminated and implemented by HKBU, particularly over 6-years of KT development. Evaluation questions of ‘how the adopted KT strategies would be commented?’, ‘what were the strengths and weaknesses of the adopted KT strategies?’, ‘how the adopted KT strategies could be improved?’, and ‘what kinds of foreseeable effects’ were associated with the impacts of knowledge transfer as in terms of the last ‘W’ of the 6W-elements. To answer those questions, I retrieved data evidences from respective thematic summaries of the interview transcripts, supplementary with data from the case-institution’s relevant documents. Moreover, I further assembled from the collected data some exemplars of ‘what kinds of foreseeable effects’ derived from the formulated and implemented KT strategies and their associated KT projects/activities into Figure 5.6 so as to create a visualising effect of KT impacts in HKBU.

Key of KT Strategy

PS: Partnership

KTAB: KT activity-based

PFS: Professionalisation

PAS: Proactive

FRS: Fiscal/resources

IS: Interaction

TTS: Train-the-trainer

TS: Thematic

CS: Collaboration

ARS: Applied research

Colour Key for the Dimension of KT Strategy

Green: Enabling environment

Yellow: KT engagement

Gold: Implementation

Orange: Capacity building

Light blue: Dissemination

Blue: Formulation

Light green: Protecting

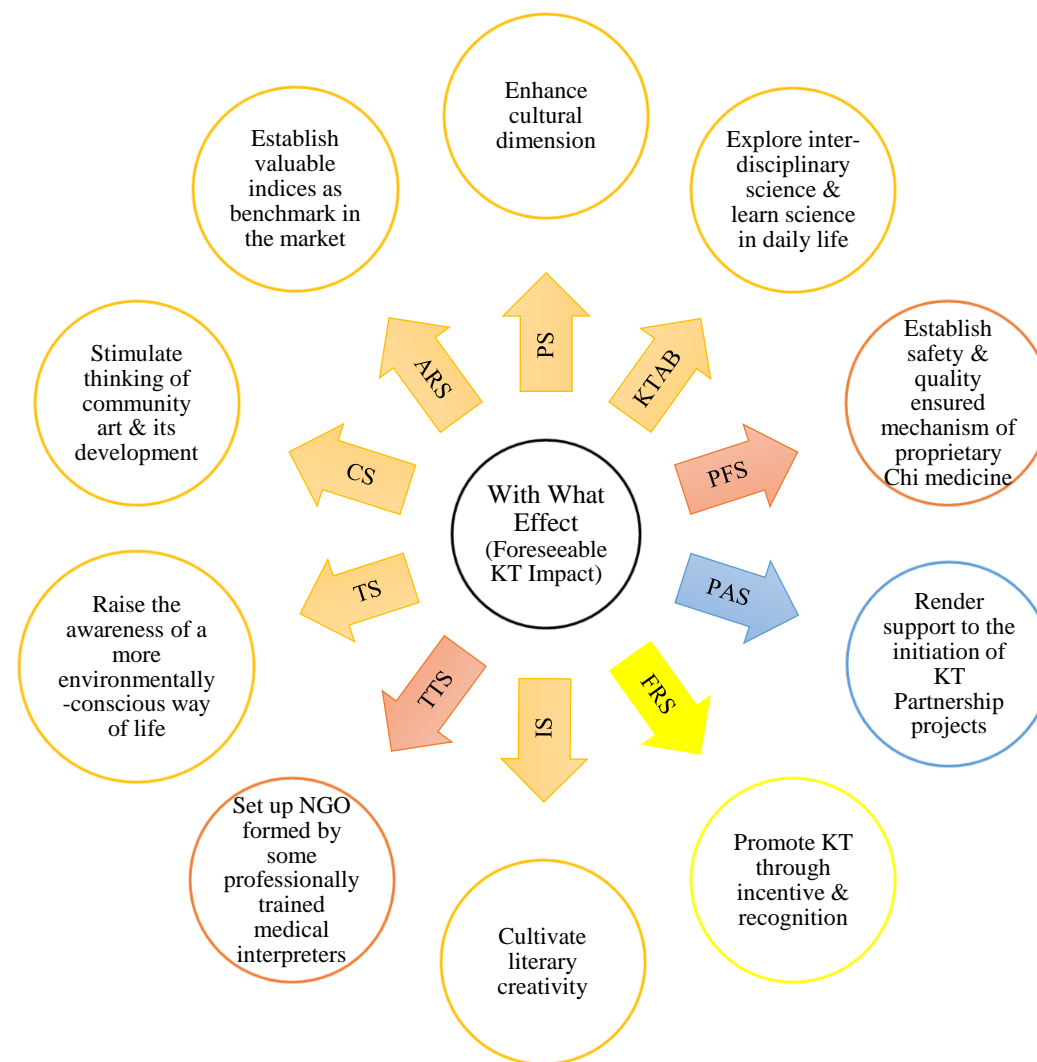


Figure 5.6. Exemplars of ‘What Kinds of Foreseeable Effects’ Derived from the Formulated and Implemented KT Strategies in HKBU (HKBU KT Reports 2009/10 to 2014/15).



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5.2.3 Management and administration perspective on knowledge transfer

strategies. In addition to the 6W-elements, the thematic summaries under the first MTC were derived from the two HKBU's interview transcripts. The interviewees' perspectives, who represented the management and administration sides, were consolidated with specific examples of the KTS dimensions and thematic sub-categories for thematic-based presentation and comparison within HKBU's context (Table 5.4). Table 5.5 was tabulated for visualising the comparison of the management and administration perspectives on KT strategy.

Table 5.4

Comparative Table for Thematic-based Analysis of the Thematic Summaries under the First MTC of HKBU's Interviewees

HKBU		
First MTC: Main thematic category of the planned and adopted knowledge transfer strategies		
Inter-viewee	Thematic Summary	KTS Dimension (Thematic sub-category)
M1	Promotes thorough understanding of KT amongst staff	Capacity building KT strategy (Cultural change)
	KT is facilitated by a supporting team	Enabling environment KT strategy
	Strategies for the purposes of enabling and facilitating KT	
	Building rapport between KTO staff, teachers and students	
	Provision of professional and supportive services	
A1	Provide assistance and resources to academics	
M1	Formulated KTS guiding by mission and vision of KTO	Formulation strategy (Mission-vision driven)
	Put emphasis on "people-oriented" strategy	Formulation strategy (Professional customer-oriented)
	Intensive relationship and trust building	
A1	Provide a one-stop KT services to staff and students	
M1	KT experience sharing by real cases	Implementation strategy (Collaboration)
A1	Collaboration amongst universities create synergies	
M1	Networking could realise KT within the community	Implementation strategy (Networking)
	Building rapport	KT Engagement strategy (Communication)
	Intensive relationship and trust building	KT Engagement strategy (Incentive)
	Incorporated KT as staff performance indicators	
	Extra marks for students involved in KT to attract and facilitate participation	
A1	KT in curricula could be easily accepted by students	KT Engagement strategy (in local community)
	Encourage academics in community engagement projects	
A1	Mobilise student participation and commitment in KT through the leadership from teaching staff	KT Engagement strategy (Leadership and student engagement)
A1	KT in curricula could be easily accepted by students	KT Engagement strategy (Student engagement)

Source: Interview Transcripts of HKBU, August 2015.

Table 5.5

Visualising Comparison of the Management and Administration Perspective on Dimensional KT Strategy

Dimensions of KT Strategy	Sum of Interviewees	Management Perspective (M1)	Administration Perspective (A1)
Engagement	10	5	5
Enabling Environment	6	5	1
Formulation	4	3	1
Implementation	4	2	2
Capacity Building	1	1	0
Dissemination	1	0	1
Protecting	0	0	0
	26	16	10

Regarding the aggregated code frequency of each dimension derived from the management (M1) and administrative (A1) sides of interviewees (Table 5.1), M1 placed more emphasis on KT strategies of ‘enabling environment’, ‘engagement’ and ‘formulation’. In contrast, A1 put ‘KT engagement’ onto the focus, which may reflect personal experience and understanding of KT and its process of implementation. In the same emphasis of ‘engagement’ between M1 and A1, M1 inclined to engage teachers and students through enhancing communication, such as building rapport, trust and intensive relationship, and rendering incentive by means of recognition through KT Award and staff performance indicators¹³. In contrast, A1 considered staff and student engagement through incentives by giving ‘carrots’ without sticks, such as incorporating KT into curricula, mobilising student participation and commitment in KT through the leadership from teaching staff, and encouraging academics’ involvement in community engagement projects or events in different ways. Besides ‘engagement’ with different perspectives, M1 also stressed the essential aspects of KT strategies of ‘enabling environment’ and ‘formulation’. Repeatedly, M1 considered that a support team, building rapport, and provision of professional and supportive services are core elements of enabling environment KT strategy in enabling and facilitating KT and

¹³ Note for analysis part – M1 emphasised on social psychology and non-material reward aspects, involved human resource management technique and perspective while A1 focused on practical benefit and operative aspect of KT strategies.

participation¹⁴. Similarly, M1 mentioned that ‘mission-vision driven’ and ‘professional customer-oriented’ strategy were the foundation of formulation KT strategy whereby the guiding principles embedded in the mission and vision of and professional customer-oriented value of KTO. Comparatively, A1’s view on enabling the environment was related to the provision of assistance and resources to academics while the ‘formulation strategy’ was in relation to one-stop professional customer-oriented KT services. Among similar / same strategy, there appears to be different emphases and perspectives between M1 and A1 in the context of HKBU.

The thematic summary of M1 was that ‘the formulation and adoption of knowledge transfer strategies in HKBU are under the guiding principles embedded in the mission and vision of KTO’ [outcomes]. In brief, knowledge from University teachers and students is the priority of transfer in voluntary basis of which KT is facilitated by a supporting team within the University context so as to contribute to the community through matching with the strengths of HKBU. Under this conception, strategies are formulated and implemented to achieve the purposes of enabling and facilitating KT.

Networking is one of the strategies in realising KT within the community from which KTO would work in partnership with members of HKBU to proactively help them to network with community partners so that they can serve the community and facilitate community participation through knowledge transfer. An observable situation is that the reciprocal effect of KT in the community could inform research and teaching.

In respect of the voluntary nature of KT participation and the internal focus on teachers and students as target participants in KT, HKBU put emphasis on the "people-oriented" or "teacher-oriented" strategy to promote, enable and facilitate knowledge transfer within the context of the University. The key element of "people-oriented" strategy is building

¹⁴ Note for analysis part – here the enabling environment seems to be more of non-material and software oriented.

rapport between KTO staff, teachers and students, in particular, of those participants of KT and KT partnership projects as well as those who are entrusted with KT services. Besides, the provision of professional and supportive services in relation to KT are core elements of KTO to response to the needs of teachers and students whom have been or will be participated in KT.

Apart from the aims of enabling and facilitating KT, transformation strategy in attitudinal change towards KT is adopted through incentive and experience sharing strategy so as to enhance motivation in and understanding of knowledge transfer. For example, HKBU has incorporated KT as one of the staff performance indicators in 2013 and introduced "the HKBU Knowledge Transfer Award" covering the whole university in 2014, of which, recognition from the university is essential with positive effect and to induce motivation in participation. Strategically, HKBU also promotes thorough understanding of KT amongst staff through KT experience sharing by real cases so as to change the mindset in a more effective and easy way. With increasing staff initiatives in research and KT, the total numbers of patents are also gradually increased from 2011 onwards. This is an obvious and typical example of transformation in motivation and mindset. Without the strategy of "people-oriented" with intensive relationship and trust building, it is hard to change the attitude and mindset of human beings in any context.

Last but not least, incentive strategy as in terms of extra marks for students who were involved in KT is a realistic way to attract and facilitate participation.

5.3 Case Conclusion

5.3.1 Institutionalization process. In the case of HKBU, it has many years of participating experiences in existing on-going KT activities prior to the UGC recurrent KT funding for new KT initiatives in 2009-10, particularly in the areas of technology transfer (KTO/HKBU, 2010), notwithstanding the categorisation as small to medium size of HEIs in

Hong Kong. Before 2009, the IPC was formed, with administrative support provided by an office under the purview of Vice President (R&D), for policy directives and matters in relation to technology transfer (KTO/HKBU, 2010). After the reorganisation of IPC into KTC in 2008, it was entrusted with extended responsibilities in overseeing KT development through its functions of strategic management and development of technology and non-technology areas of KT in HKBU (KTO/HKBU, 2012a). In tandem with the administrative and implementation needs of the endorsed and/or developing KT strategies, a designated KT Office was formed in 2009 to support the promotion and education of KT as well as the implementation of KT services and strategies within the University community (KTO/HKBU, 2012a). These briefly recapitulate the institutionalised process and strategy for KT development in HKBU at an early stage implying its emphasis on the fundamental and essential roles and functions in policy/strategy formulation and implementation.

5.3.2 Institutionalized Policy-Driven Model. After a thorough investigation and analysis of the planned and implemented KT strategies in HKBU guided by the systematic descriptive framework, 6W-elements of the heuristic approach and the TQTAP, I observed that HKBU's KT development was under relatively solid guidance through an institutionalised policy-driven model of development. The institutionalised restructuring of KTC and establishment of KTO before/at the beginning of KT recurrent funding was first and foremost the fundamental element of facilitating KT related policy and strategy formulation and implementation. This institutionalised policy-driven model of KT development was also evidenced by HKBU's relevant policy objectives and institutionalised action plans over the years of KT development. For instance, the institutionalised KTO's mission is "committed to match the needs of the community at large with the strengths of HKBU, to work in partnership with members of HKBU to proactively contribute to the community, and to enable knowledge transfer as the third pillar of HKBU (KTO/HKBU, 2016b)". This KT mission was,

indeed, driven to certain extent by the vision, mission and the decade strategic plan (i.e., Vision 2020 formulated in 2010 and updated in 2014) of HKBU (2014). This accordingly responded to “HKBU aspires contribution to the advancement of knowledge through research and scholarship”, “HKBU’s commitment to academic excellence in teaching, research and service (HKBU, 2016d)”, and to the long-term commitments for KT development aligning with one of the strategic themes of “dedicated service to the community” of the Vision 2020 (HKBU, 2011, November). Other evidences in supporting the observed model include:

1. Institutionalising KT as a standard practice, along with teaching and research, enshrined in the University Strategic Plan 2009 – 2015 (KTO/HKBU, 2010).
2. Adopt a balance KT policy with equal importance in the development of technology and non-technology areas of KT (KTO/HKBU, 2010).
3. Apply KT Partnership (KTP) Model as a strategic focus for KT development (KTO/HKBU, 2010).
4. Further institutionalise KT through the development of policy documents for establishing a reasonable academic time and funding allocation mechanism (KTO/HKBU, 2011).
5. Establish, update and systemise guidelines and procedures to reinforce participation in KT through backing, incentive and recognition mechanisms (KTO/HKBU, 2011).
6. Reinforce KTP projects, especially for arts, humanities and social sciences, through enhancing the role of KTO and hiring KT Associates from the pool of university students and graduates (KTO/ HKBU, 2011).
7. Develop KT impact assessment framework to streamline both qualitative and quantitative impact analysis applying to both technology and non-technology areas of KT (KTO/ HKBU, 2011).
8. Streamlining the management of a broad range of KT activities (KTO/ HKBU, 2011).

Relevant and an overall key KT strategies at different stages of KT development over the past 6-years in HKBU are summarised in Figure 5.7 for a brief and sequential illustration.

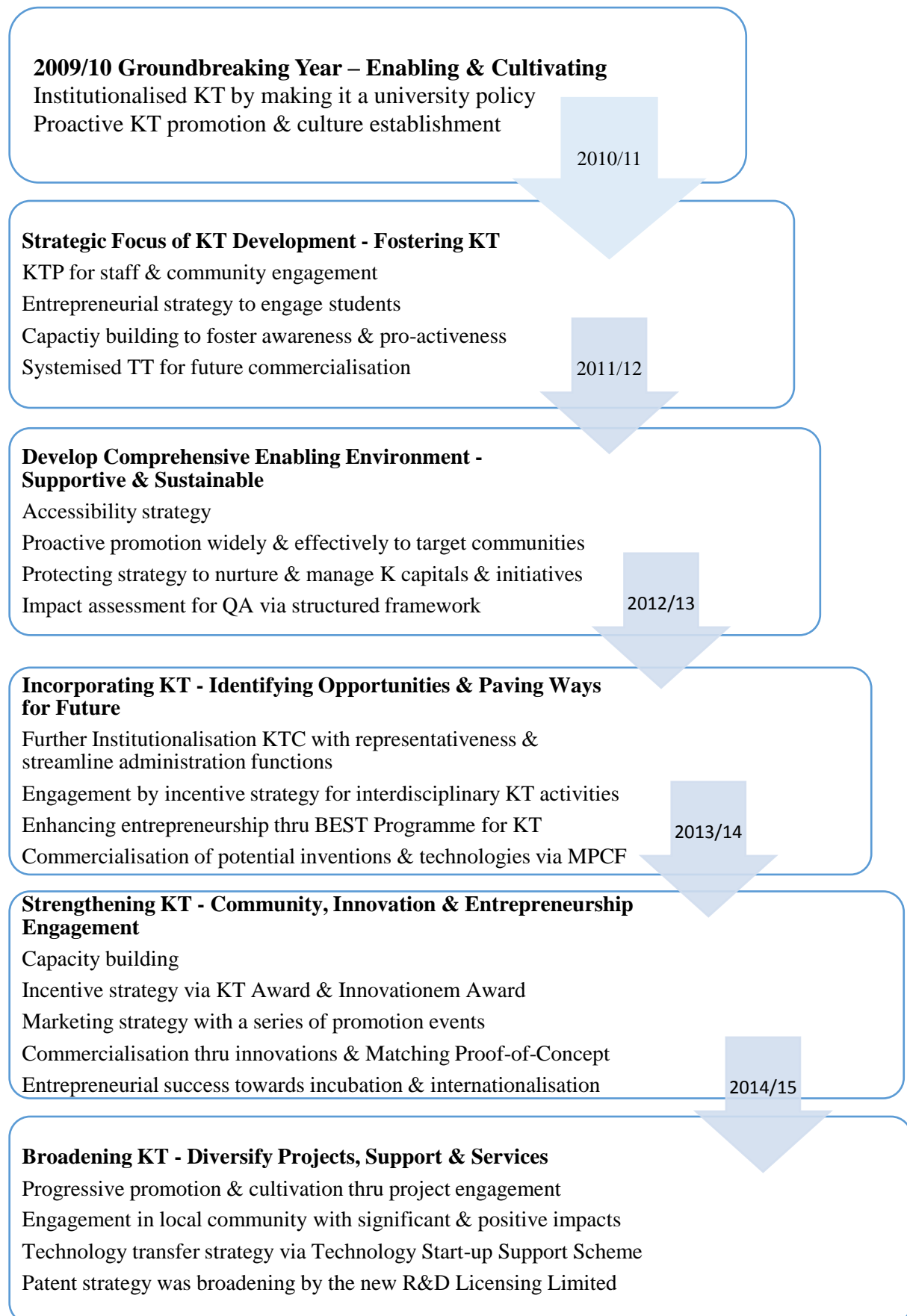


Figure 5.7. Relevant and Key KT Strategies at Different Stages of KT Development (Sources: HKBU KT Annual Report – 2009/10 to 2014/15).

Although the frequency sum of the KT strategy formulation and development over the years in HKBU were emphasised more on the dimension of KT implementation strategy (i.e., 108), its sub-category of KT strategies, such as entrepreneurial, partnership, impact assessment, applied research and collaboration strategy, were simultaneously embedded in the spectrum of institutionalised policies and strategies. The KT strategy formulation, dissemination and implementation were indeed driven by the relevant policy and underlining KT policy institutionalised at the University level. The well-established and progressive development of KT in HKBU over the years were clearly manifested by the reporting milestones embedded in the 6-year KT Annual Reports with relevant and key KT strategies at different stages of KT development (Figure 5.7).

Chapter 6

Case Study of The Education University of Hong Kong's

Knowledge Transfer Strategies

6.1 Knowledge transfer (KT) in the Education University of Hong Kong (Why KT)

6.1.1 Historical background, vision, and mission. The Hong Kong Institute of Education (HKIEd), as an institute was established by statute by amalgamating the former four Colleges of Education¹⁵ and the Institute of Language in Education in 1994¹⁶. It was historically rooted in 1853 when the first formalised programme of in-service teacher training was introduced in St Paul's College and in 1881 when the first Government Normal School was established by the then Governor of Hong Kong, John Pope-Hennessy, in Wan Chai (The Education University of Hong Kong [EdUHK], 2015a). HKIEd is a publicly-funded tertiary institution and under the aegis of the University Grants Committee (UGC) in 1996 (EdUHK, n.d.c). In 2016, it was entitled with university status and renamed as The Education University of Hong Kong (hereafter as EdUHK instead of HKIEd) (EdUHK, 2016b)¹⁷. EdUHK commits to the strategic development of Hong Kong teacher education and dedicates to quality teaching, learning and creating knowledge advancement through the provision of education and complementary disciplines as well as multidisciplinary research beyond education (EdUHK, n.d.b). EdUHK emphasises much on research capability contributing to scholarship, knowledge advancement, and innovation with transforming and sustainable

¹⁵ The former four Colleges of Education included the Northcote College of Education (1939), Grantham College of Education (1951), Sir Robert Black College of Education (1960), and the Hong Kong Technical Teachers' College (1974).

¹⁶ The former four Colleges of Education and the Institute of Languages in Education (1982) were founded respectively to provide formal teacher education in Hong Kong in response to the increasing interest in and demand for teacher education from the government and the public. With a view to upgrading teacher education and professional development, the five teacher training institutions were amalgamated as HKIEd under the recommendation made by the Education Commission Report No 5 (ECR 5) in 1994.

¹⁷ According to the updated news and status of HKIEd on 19 May 2016, the Legislative Council of the HKSAR passed the HKIEd (Amendment) Bill 2016 representing the legislative approval for the retitling of The Hong Kong Institute of Education (HKIEd) into The Education University of Hong Kong

impact on the advancement of human and society (EdUHK, n.d.b). Over the years, EdUHK's vision of "Education-plus" has guided its development in "a distinctive role in leading education and policy discourse" for the progress in education and society at the regional and international level (EdUHK, n.d.a).

6.1.2 Academic profile and university's population. As of the 2015/16 academic year, EdUHK (n.d.e) comprises of 3 faculties with 16 departments cum 1 centre, and a graduate school (details in Appendix 6.1). Of the populations within the University, there were 8,661 enrolled students (The University Grants Committee [UGC], 2015b), 818 employed staff, of which 341 were categorised as academic staff and 477 as academic support and administrative staff (UGC, 2015a), and 3,221 graduates (EdUHK, 2015c) in 2014/15. EdUHK was ranked out of the annual league table of the top 800 universities in the world in the 2015/16 Quacquarelli Symonds (QS) World University Rankings (QS, 2015c). For QS Rankings by subject, EdUHK's Education was ranked and emerged as 12th in the world and 2nd in Asia in 2015/16 respectively (QS, 2016).

6.1.3 Research infrastructure and development of knowledge transfer. Apart from research development and contribution in non-technology and/or technology areas by the academic staff of individual faculties and departments, the research centres in the University also play a key role towards research capacity building, knowledge creation and application, and professional development. Notwithstanding the existing research infrastructure in EdUHK erected since 2006 and blooming especially after 2006, it comprises internally a Graduate School with research and taught postgraduate programmes, four university-level research centres, twelve faculty-level research centres and a Research and Development Office (RDO) serving academic support and services (EdUHK, n.d.e) (details in Appendix 6.2). These Research Centres, Professional Development Centres, and research-related postgraduate programmes were constructed under the existing research infrastructure in

EdUHK with reference to the classification process mentioned in Chapter 5. This research infrastructure, apart from individual academic staff, indeed, are the sources of knowledge creation and fundamental basis for the development of KT in the education profession and beyond education in EdUHK. As stipulated in the R&D philosophy of EdUHK, it emphasises contribution to education excellence and innovation through applied research with social and professional relevance, academic rigour, and conceptual originality so as to create “inspiring and innovative knowledge with strong academic, professional, social, and policy impacts on education and the wider community” (EdUHK, n.d.g). The achievement of excellence in research is to combine “scholarship, professionalism, and service through knowledge transfer and application” (EdUHK, n.d.g).

Commencing from the 2009-10 financial year, EdUHK was allocated with “recurrent KT funding from UGC for new KT initiatives while it has over 150 years historical roots of providing in-service teacher and formal teacher education in Hong Kong (EdUHK, n.d.c).

After over hundred years’ journey of education professional training and transfer of education-related knowledge, the merged HKIEd in 1994, its status came under the aegis of UGC in 1996. The launching of postgraduate programmes in 2005 onwards, the endorsement of stand-alone development into an “*Education-focused, research strong and multidisciplinary institution*” in 2009 by the UGC, and the gazetted title of EdUHK in 2016 were its critical milestones in shaping the progressive development of teaching, research and KT with excellence and long-lasting impact (EdUHK, n.d.c).

An interviewee of the management side (i.e., M2) from EdUHK mentioned that ‘research and/or KT were not emphasised in EdUHK before the year 2000 while they were taken seriously and promoted systematically for its development commencing from 2006 onwards. It was obvious that EdUHK needs to enhance strength in research and KT, particularly when the institution was assessed inadequacy in research during the research assessment exercise in 2006 as well as

the application for transforming into a university in 2008/09. In order to pursue the development as an independent university, an education-focused, multidisciplinary, and enhancing research strength direction was adopted, includes putting emphases on the development of applied research and KT in the multidisciplinary areas of education, arts and humanities, social sciences, and creative arts and culture’ (i.e., M1, June 2015).

In fact, the research infrastructure in EdUHK consists of physical and non-physical aspects, which are represented by the RDO, university- and faculty-level research centres, KT Task Force (KTTF), and KT Unit (KTU) as a physical infrastructure. The academia of different faculties/departments, experts with specialised research areas, various kinds of research and development projects, collaboration and KT initiatives/activities are the non-physical aspects (EdUHK, 2016b). The engine of research resides in the non-physical aspects whereby, the physical infrastructure becomes the oil of the engine of which, the creation of knowledge and development of research are driven by EdUHK’s R & D philosophy. The strategic development of research is, indeed, aligned with the R & D philosophy commensurate with the advancement of KT contributing to the education sector, professions and communities through KT initiatives embedded with “University-owned and research-based knowledge” (EdUHK, 2015d). Hence, it is not surprising that the development of KT and its strategies in EdUHK were aligned with and interrelating to the historical and progressive development of research and its embedded philosophy. Therefore, apart from the importance of developing KT through different kinds of implementation strategies, the strategies of engagement, enabling environment, dissemination, and capacity building became essential and prioritised in the University.

6.2 Knowledge Transfer Strategy – The Study Case

With reference from the 6W-elements of the heuristic approach and the case study protocol, I divided the case study data presentation and analyses into six more sections

whereby some have been further divided into a few sub-sections. The six sections included ‘what to be transferred’, ‘in what ways’, ‘to and by whom’, ‘with what effect’, ‘management and administration perspective’, and “case conclusion - the EdUHK model”. Among the following sections, I attempted to address RQ1 and RQ2 to the EdUHK case through data presentation and analyses of the KT strategy formulation, dissemination, implementation, and evaluation in the KT strategy process. Then, I summarised the observed KT model and the case conclusion of EdUHK. Data presented in the following sections were mainly derived from EdUHK’s 6-year KT reports, strategic plan, annual reports, designated website, interview transcripts from the management and administration perspectives, and some other sources relevant to KT and EdUHK.

6.2.1 Planned KT--the objectives, strategies and management structure.

6.2.1.1 Formulation of knowledge transfer strategy (what to be transferred).

6.2.1.1.1 KT organisation and objectives. Prior to the launching of KT funding initiatives, neither the KT leadership and management roles of the Committee on Research and Development (CRD) at the university level were clearly specified, nor were there executive staff or unit dedicated to implementing institutional KT policies and strategies at the academic level (EdUHK, 2010a). In order to strengthen the institutional infrastructure facilitating for KT capacity building, implementation, and culture development, the terms of reference of the CRD have changed from 2009/10 onwards so as to enhance its leadership, policy and management functions in KT (EdUHK, 2010a). Commencing with the establishment of the KT Team within the RDO with the role of providing administrative and executive support to CRD in 2009/10 (EdUHK, 2010a), the then KT Task Force cum KT Unit was formed by representatives from faculties and dedicated staff. This unit was led by a KT Director in 2014, to strategically provide administrative and KT-related promotion support as well as to enhance the institutional policies and initiatives on KT (EdUHK, 2015b). To pursue

the KT objectives, the transformation of management organisation structure and the formulation of and dynamic changing in KT strategies were, indeed, essential for the sustainable development of KT in accordance with staff members' capacity, strengths, creativity and the academic units' own R&D agendas (EdUHK, 2010a).

Practically, one of the characteristics of KT at EdUHK is its ties in with education and related areas whereby, KT at the University aims to proactively “contribute to education development through its applied research and KT services to the community and the profession” (EdUHK, 2016a). Regarded as the third pillar to research and teaching in the overall development of the University, KT is underpinned by some key goals guiding the formulation of KT strategies as well as the development and organisation of KT activities in the University (EdUHK, 2016a). The key aims closely linking research and teaching to KT while contributing to the development of the University and the wider community through intellectual capacity and capital development, from which, the ultimate goal is to serve the local and regional developmental needs in education and its related areas (EdUHK, 2016a).

6.2.1.1.2 Strategic plan for the triennium cycles. Under the endorsed strategic development plans of 2009-12 and 2013-16, one of the strategic areas is transforming its capacity in terms of strengthening staff capacity, “nurturing and sustaining proactive researchers and policy advocates” (EdUHK, 2009, 2013b). The aim, to enhance “the academic capacity and leadership”, and establish a sustainable and enriched research infrastructure and culture in the University for the development of an ‘Education-plus’ “applied research that facilitates KT and application to teaching and learning, and professional practice, and which has academic, curriculum, policy and wider social impact” (EdUHK, 2009, 2013b). In the Research and Knowledge Transfer Strategy 2015-18 of EdUHK, it continues to encourage and engage academic staff members to actively participate in research and KT through various strategies. These include advocating strategic areas of

multidisciplinary research emphasising with collaboration, quality, “integration of research with teaching and KT”, and high impact (EdUHK, 2015d). The focused areas of research, learning and KT (EdUHK, 2015d) are:

- i) Educational Development, Policy, and Leadership;
- ii) Special Education and Applied Psychology;
- iii) Early Childhood and Well-being Studies;
- iv) Social and Policy Studies;
- v) Science Education and Environmental Studies;
- vi) Humanities, Creative Arts and Culture; and
- vii) Literature and Historical Studies.

Under the triennium plan in the R&KT Strategy, EdUHK’s KT vision is to “contribute to the advancement of knowledge, scholarship and innovation, with a sustainable impact on social progress and human betterment via educational change” (EdUHK, 2015d, p. 8). In addition to “consider KT as a form of service to the community and as a profession” (p. 8), the University will continue to engage faculties and research units taking a lead in research, formulating diversified KT-related projects, initiating venture collaborations, strengthening connections between research and KT, “developing intellectual capacity and capital” (p. 9), increasing student KT engagement, and generating revenue from a diversity of KT activities (EdUHK, 2015d).

6.2.1.1.3 Knowledge Transfer in the context of EdUHK. Referring to the two interviewees of EdUHK on the KT context, they briefly summarised the underpinning forces of and reasons for KT. The interviewee from the management side (M2) specified that

As an institution who is dominant in the context of education, arts and humanities, HKIEd (EdUHK)’s core positioning of KT strategy is totally different from traditional research universities and mainly focused on educational related research [outcomes] from which it assumes to be a leading role so as to create impacts on teaching and learning, education advance development as well as local education

reform, amid the existence of occasional patent research [anticipations]. In respect of EdUHK's unique institutional context, the emphases would be placed on applied research and their results, particularly in having transformation impacts as well as leading changes in the community, policy advocacies, and discussion in human issues, instead of being confined to an ivory tower and research for publications only [processes]. KT is aligned with institutional positioning, especially in line with its vision, mission and broad definition of KT [outcomes]. M2 further raised a self-reflection question that 'would the existing situation of KT under the context of education still be the "core melody" if the subjects will be increased in future [anticipations]?' The answer from M2 was that 'with the establishment of subjects in social sciences, creative arts and culture, and science and environmental studies as well as a few achievements in patent licensing and innovation fund [outcomes], the positioning under the institutional context would be changed [anticipations].

In addition, the interviewee from the administration side (A2) mentioned that

A KT unit was established in July 2014 under the purview of Vice President (R&D) in HKIED (EdUHK), which is similar to the usual management structure of other institutions [outcomes]. At its initial stage, only seven staff members from faculties and delegated representatives were invited to form the KT unit, and Associate Vice President (R&KT) is one of the members [outcomes]. As the unit is at the very beginning stage to assist in formulating KT strategies, implementation and promotion plans, its formation and structure is quite different when compare with the KT offices amongst other institutions [outcomes]. KT unit in EdUHK is not the same as others whereas it is not operated independently with its own staff, such as KT manager, officers and project staff, and the delegated KT manager and members have several roles other than KT [outcomes]. Its administration is supported by the RDO of EdUHK [outcomes].

6.2.1.1.4 Organizational structure and management function in KT strategy

Formulation. Despite EdUHK having a historical root of 'knowledge transfer' in education through formal and professional teacher training for over 150 years, it was not until '2006 onwards that research and/or KT were becoming emphasised in EdUHK' (M2, August 2015). In 2009/10, the University even altered the terms and reference of the CRD so that the enhanced role and responsibilities on KT were obviously specified facilitating for the

progressive development of KT through their leadership, management, and policy/strategy initiatives (EdUHK, 2015d). Apart from the senior management and leadership of the Vice-president (Research and Development) and the CRD in research and KT, the Associate Vice-president (Research and Knowledge Transfer (R&KT)) are dedicated to oversee the development of R&KT. Supported by the KT Director, KT Task Force and KT Unit were in position in 2014 to take up the designated roles in reviewing KT strategies, enhancing institutional KT policies and initiatives, promoting KT, and engaging academic units and staff participation in KT so as to benefit the community through their applied research and extend the visibility of the impacts through various channels (EdUHK, 2010a).

Notwithstanding that the University did not set up a separate KT Office similar to HKBU or another medium to larger universities in Hong Kong, it initially established a 3-member KT Team within the RDO for providing “administrative and executive support to the CRD” for the KT strategies and initiatives implementation during the KT funding year of 2009-10 (EdUHK, 2010a, p. 3). In 2014-15, the University further strengthened the KT management structure by adhering to strong leadership commitment by the dedicated appointment of a KT Director amongst one of the academic staff. The appointed KT Director has background experience in conducting research projects in innovation and technology areas, of whom was dedicated to lead a 7-member KT Task Force comprising with representatives from the three Faculties and delegates selected amongst staff members of the University (EdUHK, 2015b). The Task Force formed to review and initiate KT strategies for pursuing the KT objectives and facilitating KT priorities, of which, administrative and KT-related support were provided by a KT Unit set up under the RDO (EdUHK, 2015b). Figure 6.1 represents the current KT management and organisational structure of EdUHK who are in-charge of strategic planning and development of KT in the University.

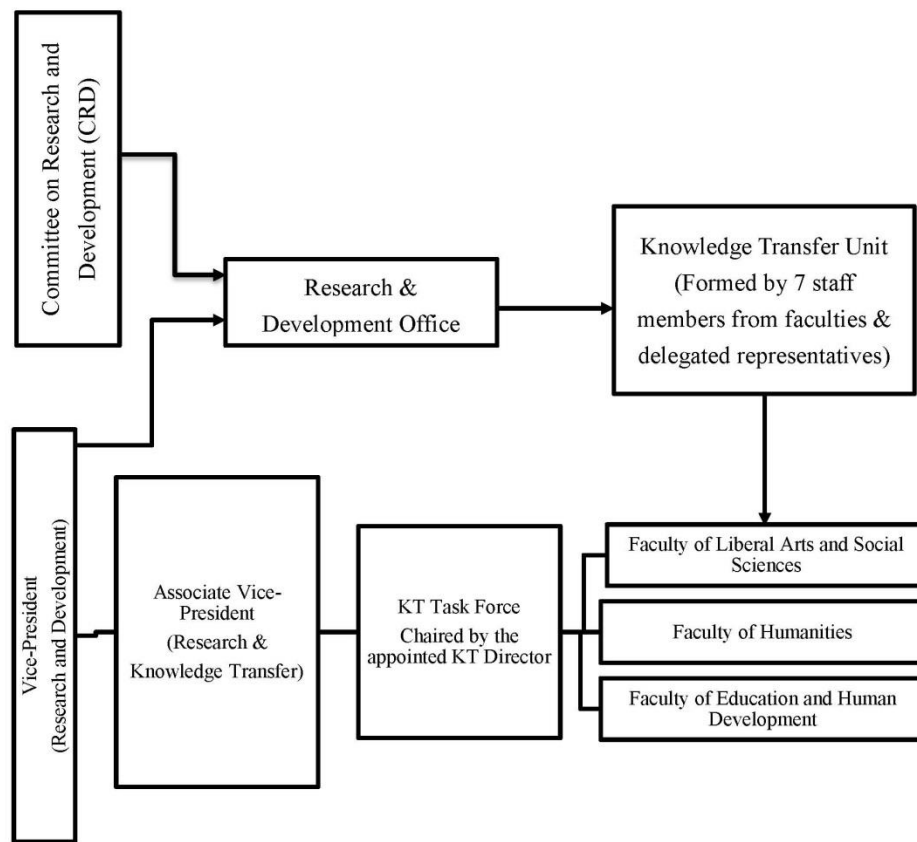


Figure 6.1. Management and Organisational Structures of Knowledge Transfer in EdUHK.
Sources: EdUHK (2011c and 2015b).

6.2.1.1.5 *Knowledge transfer funding sources – driving for initiatives and university-owned knowledge.* The major funding sources for delivering and operationalising the institution's overall KT strategies through different mechanisms, such as the KT Matching Grant Scheme (KTMGS) and KT Award Scheme (KTAS), are mainly derived from the UGC Knowledge Transfer recurrent funding commencing from the financial year of 2009-10 (EdUHK, 2010a - 2015b). There has been additional funding support from the University's own earmarked funding for KT (EdUHK, 2010a - 2015b). Besides, KT related projects were supported by various external funding schemes, such as the Quality Education Fund, the Hong Kong Arts Development Council, and the Croucher Foundation, while the best KT initiatives were selected with additional rewards (e.g., KT Award) (EdUHK, 2014, 2015b). Among different sources of KT funding, the allocations were partly dispersed through different KT mechanisms designated with similar or various KT strategies for the purpose of KT in education and related areas with long-lasting impacts on the profession and community at large (EdUHK, 2010a). Table 6.1 lists out different types of schemes or awards initiated by EdUHK. They are directly or indirectly related to the funding sources for KT, illustrated with resource implications such as year of commencement, total number of projects, total awarded amount, sources of funding, and broad areas of KT in technology (KTTA), non-technology (KTNTA) and entrepreneurial aspects (KTEA).

Table 6.1

Different Types of Schemes or Awards Initiated by EdUHK from 2009/10 to 2014/15

Types of Schemes or Awards	Kick Start in	Major Source of Funding	What to be Transferred
KT Awards Scheme (KTAS)	2009	UGC	KTTA/KTNTA
KT Matching Grant Scheme (KTMGS)	2009	UGC	KTTA/KTNTA

Source: EdUHK Annual Reports on KT Recurrent Funding – 2009/10 to 2014/15.

Regarding the proportion of UGC KT recurrent funding allocated to EdUHK amongst the eight UGC-funded institutions was relatively small (ranked 7th). There was an annual funding of 1.4 to 1.5 million Hong Kong dollars from 2009/10 to 2014/15, inclusive of the

KTA and KTMG Schemes which were launched in 2009 and sponsored by UGC KT funding

(EdUHK, 2010a & UGC, 2010-2015). Specifically, the KTA Scheme aims to encourage and facilitate capacity building for KT initiatives with funding incentives to those KT projects with matched criteria of the KTA, such as innovation and creativity, usability and accessibility (EdUHK, 2010a). Besides, the KTMG Scheme intends to support the organisation, implementation, and development of KT activities in relation to staff engagement, public policy advocacy, community partnerships and services (EdUHK, 2010a). Apart from the designated grant for KT initiatives, sources of academic/applicable knowledge and/or innovations were mostly derived from academia's research, of which, they were either supported by different types of research grants from the Research Grants Committee (RGC)/UGC or external sources of funding from the community/industry. These are, indeed, the important sources of research-based knowledge which are fundamental for the KT initiatives and strategies to be implemented by EdUHK. Table 6.2 lists out the different types of research grants and designated types of KT grants for EdUHK retrieved from the UGC-funded institutions' statistics between the financial years of 2009/10 to 2014/15.

Table 6.2

Different Types of Research Grants and Designated Type of KT Grants for EdUHK from 2009/10 to 2014/15

Type of Grants	Financial Year	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
		Hong Kong Dollars in Million (\$m)					
RGC Earmarked Research Grants		11.2	10.1	16.4	13.1	16.1	19.1
Areas of Excellence Scheme		-	-	-	-	-	-
Grants for Knowledge Transfer Activities		1.4	1.5	1.4	1.5	1.5	1.5
Theme-based Research Scheme		-	-	-	-	-	-
Total		12.6	11.6	17.8	14.6	17.6	20.6

Source: Grants for UGC-funded institutions from 2009/10 to 2014/15 (UGC, 2010-2015)

6.2.1.1.6 *What to be transferred under the formulated KT strategies.* The priority of encouraging community partnerships between university staff and key stakeholders, building research capacity amongst academic staff and generating research impacts, especially through applied research, on the education profession and the wider community was first and foremost the objective of KT development in EdUHK (2010a). These strategic objectives were, in fact, formulated under the traditional and primary mission of the University in supporting and facilitating strategic and professional development of teacher education in Hong Kong (EdUHK, 2010a). Besides, aligning with the pathways of becoming a University of Education embarked on the Development Blueprint released in 2007, the concept of ‘Education-plus’ and prioritised strategic areas of development, such as transforming capacity, schools and the community, were embraced in the Strategic Plan 2009-12 and Beyond (EdUHK, 2009). Both the primary mission and the University’s strategic plans for future development have directed the development of research and KT as well as the formulation of related strategies.

Enhancements of the leadership and monitoring roles of the CRD as well as the executive and administrative functions of the KT Team in 2009, and the subsequent KT Task Force and KT Unit in 2014 were, indeed, one of the KT strategies at the University’s policy level facilitating for the development of “*institutional strategies and priorities in KT and aligning its implementation at different levels of the University*” (EdUHK, 2009, p. 3). Over the years of KT development, the “facilitating and capacity building approaches” become the core principles and prioritised strategies of the University guiding for the implementation of KT at the institute and academic unit level (EdUHK, 2009, p. 3) through a combination of specific KT strategies.

In order to substantiate what kinds of KT strategies have been formulated by the institution as well as what needed to be transferred under the formulated KT strategies, I employed the adapted TQTAP and the 6W-elements of the heuristic approach to search for

KTS in EdUHK. Details of both applications were described and explained in the methodology chapter while specified data in relation to and crucial for the formulated KT strategies and the aspects of the 6W-elements of EdUHK are consolidated in the following section of ‘KT strategies illustrated with examples’ and Appendix 6.3 respectively. Only specified data with relevancy are selectively presented in this and the following sections/sub-sections of this chapter.

6.2.1.1.7 Formulated KT strategies in EdUHK. Out of 911 coded segments, EdUHK has constituted around 42% (i.e., 381) of the total whereas 38 KT strategies were coded and generated within the 61 consolidated KTS related thematic sub-categories. Referring to Table 6.3, the code frequency against the seven dimensions of KT strategies across six academic years and two interviewees’ perspectives were horizontally generated for the case of EdUHK with the ‘engagement strategy’ denoting the highest code frequency (i.e., 111) while the ‘protecting strategy’ denoted the lowest (i.e., 4). In contrast, the code frequency over each academic year were vertically generated with ‘2009/10’ denoting the highest code frequency (i.e., 74) while ‘2011/12’ denoted the lowest (i.e., 42), in which interviewees’ perspectives were excluded from this time series comparison.

In tandem with the broad dimension of the formulated KT strategies in EdUHK, the frequency order from the highest to the lowest code frequency over the academic years and against each academic year were indicated by the sequence order of “1” denoting the highest while “7” denoted the lowest. Table 6.3 was constructed for an overview of KT strategy formulation and development in each academic year and over the years while the frequency ranking did not necessarily imply a sequence of importance for the KT strategies formulated in EdUHK. It would be more likely that a matter of stages of KT development in EdUHK, whereas, the dimensions of KT strategies with higher code frequency manifesting the prime foci and strategic directions of the CRD and the KT Task Force as well, particularly for a

specific point of development. For the aggregated code frequency of each dimension derived from the management and administrative side of interviewees, they can be interpreted as general perspectives from the interviewees whereby the level of code frequency amongst the seven dimensions may reflect personal experiences and understandings of KT and its process of implementation.

Table 6.3

Overview of KT Strategy Formulation and Development in Each Academic Year and over the Years in Frequency Ranking in EdUHK

Academic Year		6-year	09/10	14/15	10/11	13/14	12/13	11/12
Dimensions of KT Strategy	Sum for Each Year*	<u>338</u>	74	60	60	53	49	42
	Sum over the Years**	Frequency Ranking (Code Frequency)						
Engagement	111	1	1 (26)	1 (17)	2 (14)	2 (13)	1 (13)	1 (15)
Implementation	101	2	2 (20)	3 (12)	1 (21)	1 (16)	2 (12)	3 (8)
Enabling Environment	63	3	3 (13)	5 (4)	3 (11)	4 (5)	2 (12)	2 (10)
Dissemination	51	4	5 (3)	2 (16)	5 (4)	3 (12)	3 (7)	5 (4)
Capacity Building	46	5	4 (11)	4 (7)	4 (10)	4 (5)	4 (5)	4 (5)
Formulation	5	6	7 (0)	6 (3)	6 (0)	5 (2)	5 (0)	6 (0)
Protecting	4	7	6 (1)	7 (1)	6 (0)	6 (0)	5 (0)	6 (0)
	<u>381</u>							

The single * represents an exclusive sum of interviewees' perspectives while the double ** represents an inclusive of interviewees' perspectives.

To complement descriptive and qualitative manifestations of Table 6.3, I attempted to summarise the strategic foci of KT development in EdUHK from the University's Annual KT Reports from 2009-10 to 2014-15 in order to demonstrate the formulated KT strategies in EdUHK for a given period of the case study. Nevertheless, the list of KT strategic focus were arranged from the highest code frequency ranking to the lowest as in terms of the dimensional KT strategies (1st tier of KTS) embedded with the strategic directions of EdUHK. Typical examples of the embedded thematic sub-category of KT strategies (e.g., 2nd tier of KTS) of which those with code frequency of 5 and above (cross reference to Appendix 8.1 and 8.2 of Chapter 8 for details) were included with illustrations (EdUHK, 2010a; 2011a; 2012; 2013a; 2014; and 2015b).

The dimensional and thematic KT strategies illustrated with examples included:

8. Engagement

e. Incentive strategy

e.g., incorporated KT element as one of the essential and impact assessment criteria in the President's Award for Outstanding Performance in Research (President's Award) serving as recognition and reinforcement of outstanding research with community significance.

f. Engagement strategy

e.g., both internal and external incentive strategy, such as those monetary rewards derived from patents or KT and non-material rewards associated with performance evaluation and promotion, are essential to facilitate more participation and qualitative projects in KT.

g. Fiscal or resources strategy

e.g., launched the KT Awards, President's Award, KT Matching Grant Scheme, and provided resources in reinforcing and supporting KT initiatives planning and implementation with university-owned knowledge, technology, and research findings.

h. Leadership engagement strategy

e.g., appointed a KT Director, engaged senior staff, and representatives from each faculty committing to lead and assist the development of KT as well as reviewing, formulating, and monitoring the KT strategies.

i. Recognition strategy

e.g., M2 emphasised that recognition of staff achievement in research and participation in KT is of paramount importance since people need incentives to become involved and perform.

j. Engagement in local community strategy

e.g., staff members and students are encouraged to engage in various KT activities, such as school partnerships and collaborative research with the local community so as to transfer university-owned knowledge and technology.

k. Student engagement strategy

e.g., students' participation in KT was promoted and engaged through the learning programmes and extra-curricular activities, such as participation in social, community and cultural engagement activities, including performances and exhibitions of creative works.

9. Implementation

j. Applied research strategy

e.g., the positioning in applied research for KT is to create inspired and innovative knowledge for having impacts on education and the wider community in the academic, professional, social, and policy areas.

k. Impact strategy

e.g., prioritises KT activities with long-lasting impacts and research capacity

building on education and related areas.

- l. Partnership strategy
e.g., the development of KT needs to build up strong partnerships with key stakeholders and the community as well as across regional and international levels.
- m. Collaboration strategy
e.g., collaborates with faculty members, community stakeholders, individual and organisations which could provide experience sharing opportunities and create synergies.
- n. Networking strategy
e.g., networking with different internal and external stakeholders facilitating for interactions and interchange of ideas on KT.
- o. Performance indicator guided KT strategy
e.g., attempts to apply performance indicators as assessment on the outcomes of KT activities conducted by different units in the University.

10. Enabling Environment

- d. Enabling environment strategy
e.g., creates an enabling environment for KT through support and encouragement in organising KT activities as in terms of academic staff's own capacity and strengths.
- e. Institutionalisation strategy
e.g., a senior, strong leadership and expertise team in research and KT development was formed as the CRD at the university-level to oversee and formulate strategies in relation to research and KT while supporting the KT Team/Task Force as an executive arm of the CRD.
- f. Information technology strategy
e.g., a centralised and user-friendly online system was created for annual submission of KT related research and activities by the KT participating units while the KT Database was established for internal and external searching of KT and related information through an on-line information system.

11. Dissemination

- d. Accessibility strategy
e.g., to allow the university community and the public be more easily accessible to KT activities and related information, the KT website, electronic newsletters, R&KT Newsletter, EdUHK Research Repository, were established offering breadth and depth of research and KT activities through one-stop online portal.
- e. Marketing strategy
e.g., to promote KT and related activities, the University has put efforts to publicise through multi-media such as EdUHK's YouTube, press conferences, media interviews, the Internet, and the e-magazine.

12. Capacity Building

d. Capacity building strategy

e.g., the strategy of capacity building in EdUHK is to strengthen staff understanding about KT and its significance in education and related areas through the sharing of good practices and practical experiences as well as professional seminars and workshops on KT and research. It aims at enabling the concerned staff to manage their KT initiatives and collaborate with external stakeholders.

e. Professionalisation strategy

e.g., the University attempts to transfer professional and new knowledge based on research to the profession and targeting participants through Continuing Professional Development Courses (CPD), seminars and workshops.

f. Cultural change strategy

e.g., to strengthen an institutional KT culture in learning, research and services, it is necessary to have continuous efforts in transforming the cultural via KT related training, sharing, funding and supporting incentives, and institutionalised practices in the submission of annual KT planning.

g. Academic & professional capacity building strategy

e.g., As A2 mentioned ‘once participate in KT, the subsequent strategy is to facilitate staff for increasing outputs of qualitative knowledge with core elements of applicability, innovation, legitimacy and creativity’ [\[anticipations\]](#).

13. Formulation

b. KT model building strategy

e.g., since the formulation strategy was the second lowest code frequency ranking amongst the seven dimensional KT strategies, it was included in this section for comprehensive illustration. The sum of frequency denoted less than six (i.e., five only) over the years, specifically in the KT model building strategy. The University attempts to benchmark the current KT development by modeling with the Research, Consultancy and Knowledge Transfer Strategy of the Institute of Education, University College London. It intends to change the KT community service model to income generating model embedded with KT services.

14. Protecting

d. Protecting Strategy

e.g., the sum of frequency denoted less than six (i.e., four only) over the years for this protecting strategy but it was included in this section for a comprehensive illustration as well as to highlight its commencing development. In order to protect the University’s progressive development in research-based intellectual capitals of its own in recent years, the patent and product licensing policy and application procedures were developed to enhance the protection of intellectual properties and products of the University.

To sum up, the underlining goals of KT at EdUHK, in fact, have set priorities to the adoption of KT strategies and the related activities. To cater for the local and regional developmental needs in education and related areas, KT strategy in applied research,

partnership and with impacts were regarded as the core areas of KT development in the University. Priority was given to those KT activities with “long-lasting impacts on the profession and the community in education and related areas” and “strong partnerships and collaborative networks with key stakeholders” in the past six years of KT development (EdUHK, 2016a). In the 2014-15 KT Report, it stated that the University is “committed to applied research that creates inspiring and innovative knowledge with strong academic, professional, social and policy impacts on education and the wider community” (EdUHK, 2015b, p. 3). In addition to applied research and impact KT strategy, partnership strategy was also reinforced by the University’s policy in encouraging staff members to engage in different types of partnerships with key stakeholders of the school sector through the provision of workshops and short courses (EdUHK, 2010).

Besides, capacity building strategy was also prioritised whereby it was actualised through the implementation of regular systematic workshops and seminars, sharing of good practices and advanced knowledge, the promotion and facilitation of proactive research culture, and the consolidation of research groups and other areas of research strengths, particularly with more emphases in the first few years of KT funding initiatives (EdUHK, 2010a). Capacity building strategy in EdUHK emphasised the development of the University and its staff on KT as in terms of applied research capacity in intellectual capital development for contributing to knowledge advancement in educational programmes, practices and policies, etc, on one hand (EdUHK, 2010a). On the other hand, the University attempted to build up the staff’s capacity in organising and implementing KT as well as working with community partners by means of KT workshops and seminars (EdUHK, 2010a).

Lastly, the University tried to facilitate and engage academia’s participation in KT through the creation of an enabling environment and the introduction of various kinds of incentive strategies. Apart from the University’s encouragement policy for community

partnership and engagement, it has a number of institutional policies aimed at facilitating KT involvement amongst academic and teaching staff. Redefining clear roles and expectations on academic and teaching staff performance in teaching and curriculum development, research and scholarly activities, and services with policies and guidelines could enable their participation in KT through serving the community with their “research achievement and academic expertise” (EdUHK, 2010a, p. 8). Also, supportive policies on workload adjustment could be made by the Head of Department in response to the academic staff’s commitment in KT related commissioned or consultancy projects with discernable impacts (EdUHK, 2010a). Apart from the establishment of the enabling environment conducive to KT participation, those incentive strategies, such as the KT Awards Scheme and KT Matching Grant Scheme, have the effect of staff engagement in the “transfer of Institute-owned knowledge, technology” and research impacts to the community as in terms of recognition, encouragement and monetary reward (EdUHK, 2010a, p. 9).

In addition to Table 6.3, an extended format of the dimensions of the formulated KT strategies of EdUHK by sub-category and code frequency were created and set out in Appendix 8.2 as cross reference. A total of 38 KT strategies were coded and generated within the 61 consolidated KTS related thematic sub-categories while 23 KTS have any relevant coded segments derived from the collected data. Out of a sum of 381 coded segments, the sum of code frequency against the 38 formulated KT strategies across six academic years and two interviewees’ perspectives were horizontally generated for the case of EdUHK. The ‘enabling environment strategy’ denoting the highest code frequency (i.e., 34) while a total of three KT strategies, namely as ‘interaction strategy, sustainable strategy, and innovation strategy’, denoted the lowest (i.e., 1). Nevertheless, the frequency ranking did not necessarily imply a sequence of importance for the KT strategies formulated in EdUHK. It, indeed, reflects a priority-to-enhancement needs basis of KTS development in EdUHK.

6.2.1.1.8 What to be transferred in EdUHK. Under the Descriptive Framework, data immersed in the 6W-elements of ‘formulation of KT strategy’ referred to ‘what to be transferred’ in EdUHK both at the policy/institutional and implementation level. In general, the ‘what-element’ referring to the KT areas, such as technology (e.g., scientific innovation) and non-technology area (e.g., humanities, social sciences, and creative arts and culture), to be transferred while effective curriculum development and implementation, cultural heritage in Cantonese opera, knowledge in ‘Assessment of, for and as Learning’, and development of appropriate teaching strategies and materials for students with attention deficit/hyperactive disorder (EdUHK, 2010a and 2014) are specific areas of explicit and/or tacit knowledge. Such knowledge were more likely transferred during the process of project operation, interaction and/or collaboration at the implementation level. In contrast, some of the ‘what-element’ referring to the KT areas, such as proposition (e.g., award offering criteria) or procedure (e.g., application procedure in relation to KT engagement) areas, to be transferred while criterion-based assessment of the KT Awards Scheme, application for extra responsibility payment, and procedures for protecting university-owned intellectual properties (EdUHK, 2015b) are specific areas of policy-based and/or technical-based knowledge. Such knowledge were more likely transferred during the process of policy or procedural introduction and implementation at the policy/institutional level. By reviewing and scrutinising the consolidated details in Appendix 6.3, I have drawn Figure 6.2 with a few typical examples for conceptualising and summarising ‘what to be transferred’ in EdUHK over the KT reporting years of KT strategy formulation and implementation.

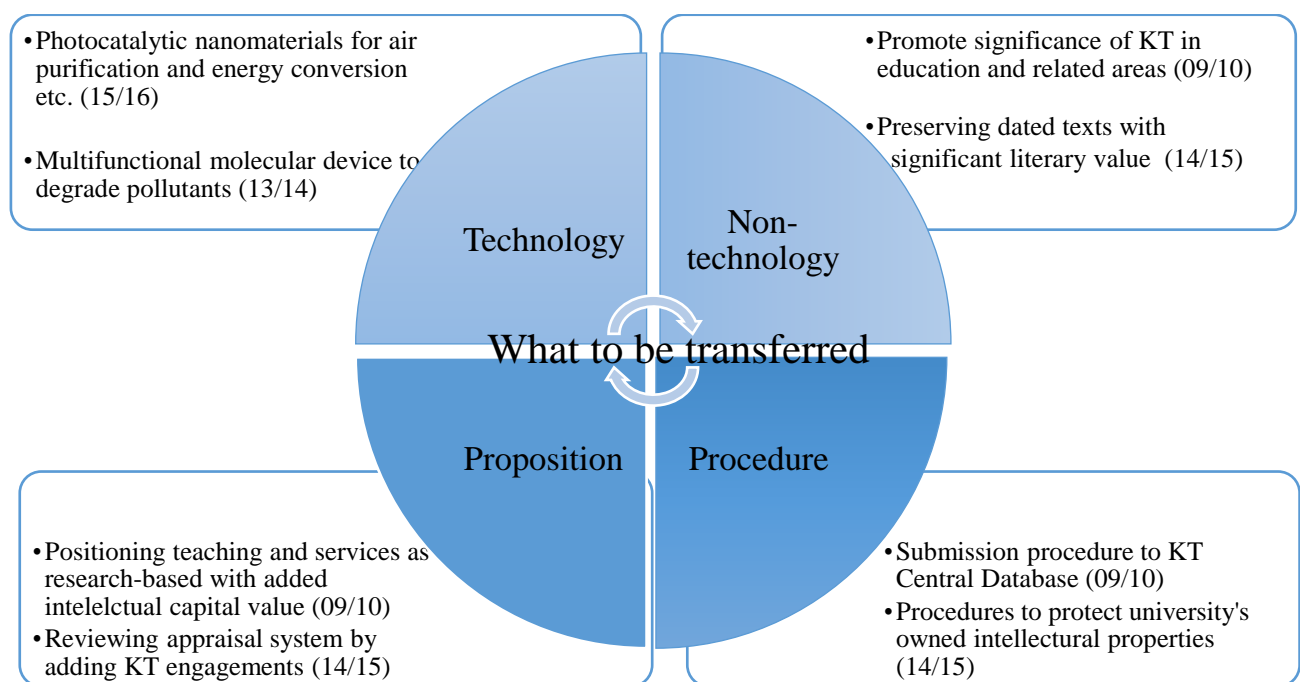


Figure 6.2. Conceptualised Examples of 'What to be Transferred' in EdUHK (2010a, 2014, 2015b, 2015, December).

6.2.2 Implemented KT--what EdUHK did, how, and outcomes.

6.2.2.1 Dissemination of knowledge transfer strategy (in what ways). Revisiting Q2 of “how have the institutions disseminated and implemented the KT strategies?”, this could be aligned with the ways adopted by the institution to disseminate the formulated KT strategies (e.g., applied research strategy and accessibility strategy) and the key stakeholders (i.e., to/with whom and by whom) involved during the implementation process, which will be presented in the following section. Under the Descriptive Framework, data immersed in this 6W-elements section of ‘dissemination of KT strategy’ referred to ‘in what ways’ the strategies in EdUHK were disseminated.

In fact, the roles and functions of the established KT Task Force and KT Team/Unit, who come under the organisational and management structure of CRD in EdUHK, could provide central coordination and help to establish platform, formulate initiatives and strategies facilitating for capacity building of and KT activity implementation by the academic units and their staff (EdUHK, 2010a). ‘The establishment of the KT Unit and Task Force internally functioned as disseminating the importance of KT within the University, particularly when they performed its assistance, coordination, dissemination and implementation functions in relation to KT [and its policies and strategies]’, M2 said during the case interview. In addition, M2 said ‘its setup and functions had reinforced the dissemination and implementation of institution’s KT policies while it becomes a contact and coordination point for society needs matching and facilitating partnership and collaboration, in particular of our research potential and impacts’ (Summary of M2’s transcript, 2015).

Hence, a 3-staff KT Team¹⁸ within the structure of RDO in 2009 and, the then KT Unit broadened with seven staff members from faculties and delegated representatives in

¹⁸ The KT Team, comprised the Head of RDO, an executive officer and a clerical officer, was established within the RDO in 2009 (EdUHK, 2010a).

2014 was established (EdUHK, 2010a, 2015b). Its formation aims to provide administrative and executive support initially to the CRD and then the KT Task Force, which has been chaired by an appointed KT Director from 2014 onwards, with extended functions in providing assistance for the development of KT at the University in all areas (EdUHK, 2010a, 2015b). A2 mentioned that “functions of the KT unit are to assist in formulating KT strategies, implementation and promotion plans [processes]. It provides a one-stop service (e.g., provide resources, assist in promotion and provide consultations) in supporting and facilitating staff participation in KT, especially staff from the departments and research centres of the three faculties in [EdUHK] (Summary of A2’s transcript, 2015)[processes].

Apart from the dissemination of the institutionalising strategy through the formation of a senior, strong leadership and expertise team in research and KT development, its works emphasised the professional development of academic staff and promotion of active research culture. Different incentives have been provided to encourage the transfer of university’s owned research knowledge with durable impacts to the education profession, related areas, and the wider community, for instances, have also disseminated through different KT strategies such as the KT Awards and KT in staff performance appraisals (EdUHK, 2010a).

The KT management and implementation teams of the KT Task Force and KT Unit were in a subsequent development process towards institutionalisation (e.g., designated KT role by the KT Task Force established in late 2014 instead of an expanded research development role with KT by the CRD in 2009. The KT Director and members of the KT Task Force were involved as part-time designated responsibilities in KT development apart from their full-time role in teaching, research, and/or university’s administration), its roles and functions in campus, and the vision, mission and values of KT already embedded with obvious, relevant and unique messages of KT strategies in EdUHK. These messages were disseminated through different channels, such as the KT staff, KT Task Force, designated

website, KT Annual Reports, KT sharing sessions, KT Newsletters, intranet, e-publications (e.g., magazine of Transforming Knowledge), and the process of KT strategy implementation as well. To illustrate ‘in what ways’ adopted by EdUHK for disseminating the formulated KT strategies, I have consolidated some specific message examples of the disseminated KT strategies associated with possible channels of dissemination, whereby details are set out in Appendix 6.4.

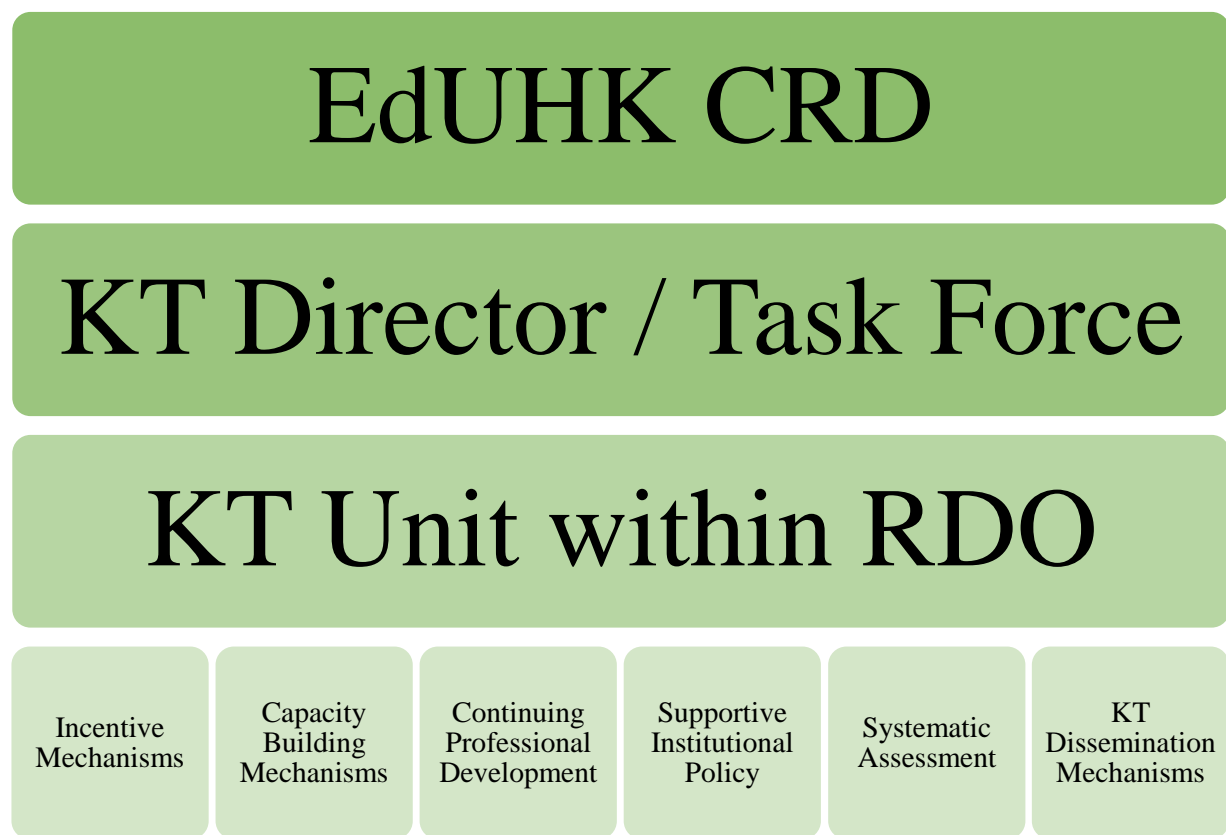


Figure 6.3. Management and Implementation Function of CRD cum KT Task Force in KT Strategy Dissemination.

Sources : EdUHK, 2010a and 2015b

Key : CRD - The Committee on Research and Development
RDO - Research Development Office

Prior to the present disseminated message of KT strategies, I need to emphasise that the underpinning aims of KT management and activity organisation as well as the prioritised KT activities at EdUHK, and the designated roles and functions of the KT Task Force / KT Unit have already explicitly disseminated the KT emphases at EdUHK. These emphases included research and KT capacity building, the transfer of the University's owned research knowledge to the education profession, related areas and the wider community, applied research for impacting teaching and KT, and building KT partnerships and collaborative networks, which were, at least, regarded as the major part of the KT strategies that the CRD/KT Task Force intended to promote and develop in EdUHK (2010a). For example, KT embedded key community services in staff performance appraisals and workload assignment, key positioning on research-based teaching and services, staff professional development policy, and regular systematic workshops, KT sharing sessions and seminars as long-term measures and typical strategies for capacity building on research and KT in EdUHK (2010a). These staff capacity building strategies were not only focused on strength- and ability-oriented enhancements but also put emphasis on creating research culture-oriented and time-oriented capacity for facilitating staff engagement in research and KT.

In regard of emphasising the transfer of the University's owned research knowledge that incentive strategies as in terms of funding and resources support, such as the KT Awards Scheme, KT Matching Grant Scheme, and workload rescheduling policy, were in place to encourage and transform cultural and behavioural changes in research, teaching and KT for creating long-lasting contributions to the community and education profession (EdUHK, 2010a).

The strategic expansion of the University's critical mass of expertise in priority knowledge and research areas through the development of Institute- and Faculty-level research centres, were fundamental to the development of building KT partnerships and

collaborative networks at the local and global levels (EdUHK, 2010a). In Appendix 6.4, the quoted examples of disseminated messages of KT strategy are not exhaustive while the same message could be disseminated more than one strategy. Normally, I would cite one example only for simplicity. As a brief introduction of ‘how’/in what ways EdUHK disseminated the planned KT strategies are appended below while more details can be referred to the aforementioned appendix.

Ways of disseminating with KT strategy examples included:

6. KT staff
e.g., “marketing strategy is important for proactively promoting our strengths, research potential and impacts, as well as brand building at regional and/or international level” (M2, June 2016) had disseminated the importance of marketing strategy in brand building for the University.
7. KT Task Force
e.g., one of the Task Force’s designated roles was to facilitate the development of KT through intellectual property management, technology licensing, and business incubation (EdUHK, 2015b) had disseminated the development needs of protecting strategy.
8. KT Website
e.g., “the University gives priority to those KT activities with long-lasting impacts...in education and related areas” (EdUHK, 2016a) has disseminated impact strategy to the education profession and the wider community.
9. KT Publications
e.g., the EdUHK R&KT KT Newsletters were launched in December 2014 to feature research and KT related stories, events and achievements to build up a communication bridge between the University and the community and highlight the moulding achievements of the well-rounded academia (EdUHK, 2014, December), disseminated marketing and recognition strategy.
10. Multi-media
 - b. e.g., production of You Tube of the EdUHK under the series of “Little Stories, Big Dreams in Education” sharing by distinguished individuals about their experiences and philosophies in education (EdUHK, 2013c) had disseminated academic & professional capacity building strategy.
 - b. 6W-elements of ‘in what ways’ of the ‘dissemination of KT strategy’
e.g., positioning EdUHK’s teaching and services as research-based with high added value in intellectual capital (EdUHK, 2010a) had a disseminated applied research strategy.

6.2.2.2 Implementation of knowledge transfer strategy (to/with whom and by whom). The former part has revisited the ways adopted by the institution to disseminate the formulated KT strategies while this section attempts to present the key stakeholders (i.e., to/with whom and by whom) involved during the implementation process of KT strategies. Of the same principle under the Descriptive Framework, relevant data were immersed in this 6W-elements section of the ‘implementation of KT strategy’ referring as ‘to/with whom and by whom’ the strategies in EdUHK were implemented. The concurrent and designated roles and functions of the KT Director and KT Task Force, the specialised KT funding schemes and human resources strategy on KT manifested at the University level as management and implementation function in KT strategy dissemination are presented in Figure 6.3. There was an overall KT strategy-to-be disseminated through the designated KT representative groups and specialised KT mechanisms, which were more of enabling-, engagement-, capacity building- and dissemination-oriented.

In contrast, the key stakeholder function in KT strategy implementation were inclined to be operation-oriented with emphases on impact through applied research and professional knowledge, partnership, collaboration, networking, and procedure establishment. For example, the implementation of applied research strategy emphasises the positioning of knowledge applicability by the education and related areas contributing with long-lasting impacts in the academic, professional, social, and policy areas. Taking the project of Innovation of Science and Environmental Studies (ISES) organised since 1998 as an example that science and environmental knowledge created from academic team’s (internal) research and development activities were transferred through inquiry projects. These projects were conducted by primary pupils and their teachers (external) in order to enhance curiosity and related knowledge, develop innovative thinking habits, and raise awareness of environmental issues (EdUHK, 2015b). For the implementation of fiscal/resource strategy under the KT

Matching Grant Scheme, it involved faculty representatives and the Director of KT Task Force of EdUHK (internal) for assessing KT initiatives submitted by academic and/or research units (internal) for the application of matching grants. A list of criteria were emphasised to encourage academia to plan and implement KT initiatives with their strengths and the development of creativity, innovative, and self-initiative knowledge (EdUHK, 2010a and 2015b). Figure 6.4 was created to visualise an overview of the key stakeholder function in KT strategy implementation while specific examples of internal (by whom) and external/internal (to/with whom) KT key stakeholders are illustrated in Appendix 6.5 as supplementary information to the schematic diagram in Figure 6.4.

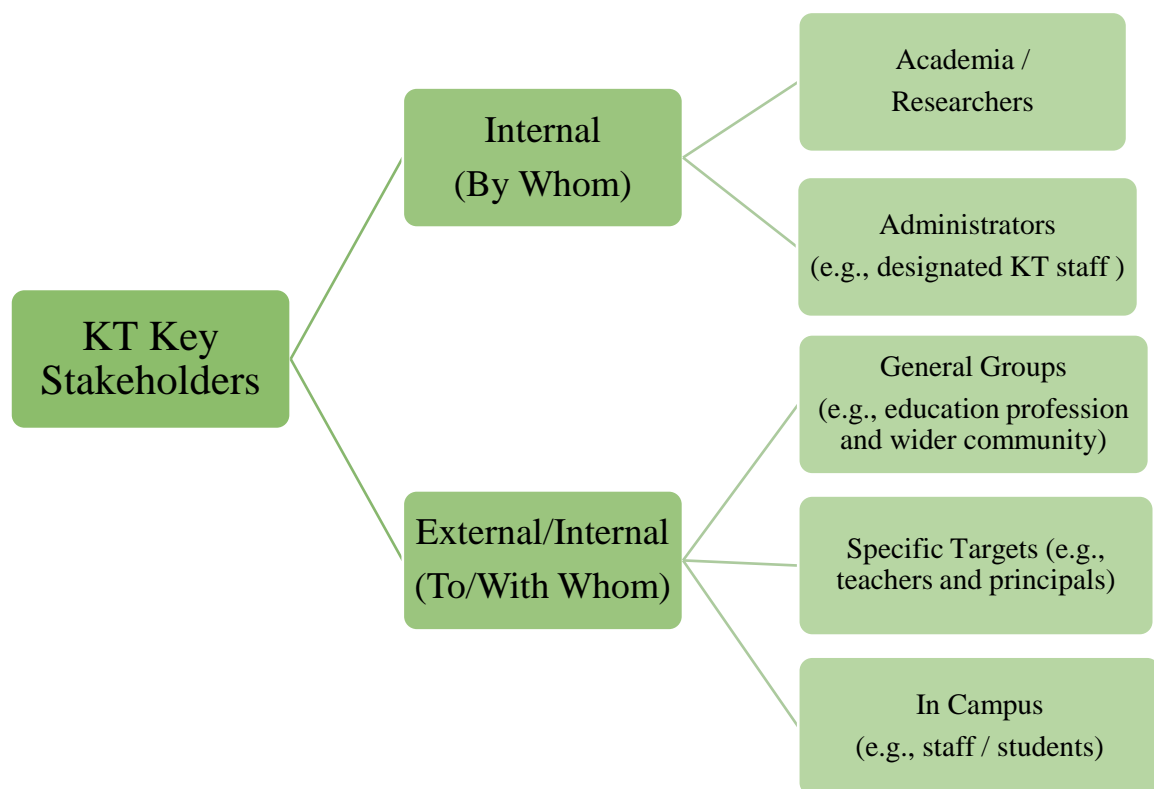


Figure 6.4. Key Stakeholders' Functions in KT Strategy Implementation.

To answer one of the research questions of “how has EdUHK implemented the KT strategies?” the schematic diagram in Figure 6.4 and specific examples in Appendix 6.5 for

KT strategy implementation have already illustrated with whom at different levels (e.g., academia at the operation/community level and administrators at the management/institutional level) would be responsible for strategy implementation. Essentially, EdUHK has implemented relevant KT strategies with cumulative stages of emphases and enhancements through designated KT staff and academia from different faculties/departments accordingly as in terms of KT development through capacity building, engagement, enabling environment, and creating impacts over the years. Major milestones of KT development in EDUHK are constructed in Figure 6.5 to facilitate interpretation of those relevant KT strategies formulated and implemented over, at least, 6-years of KT development in the chapter of analysis.

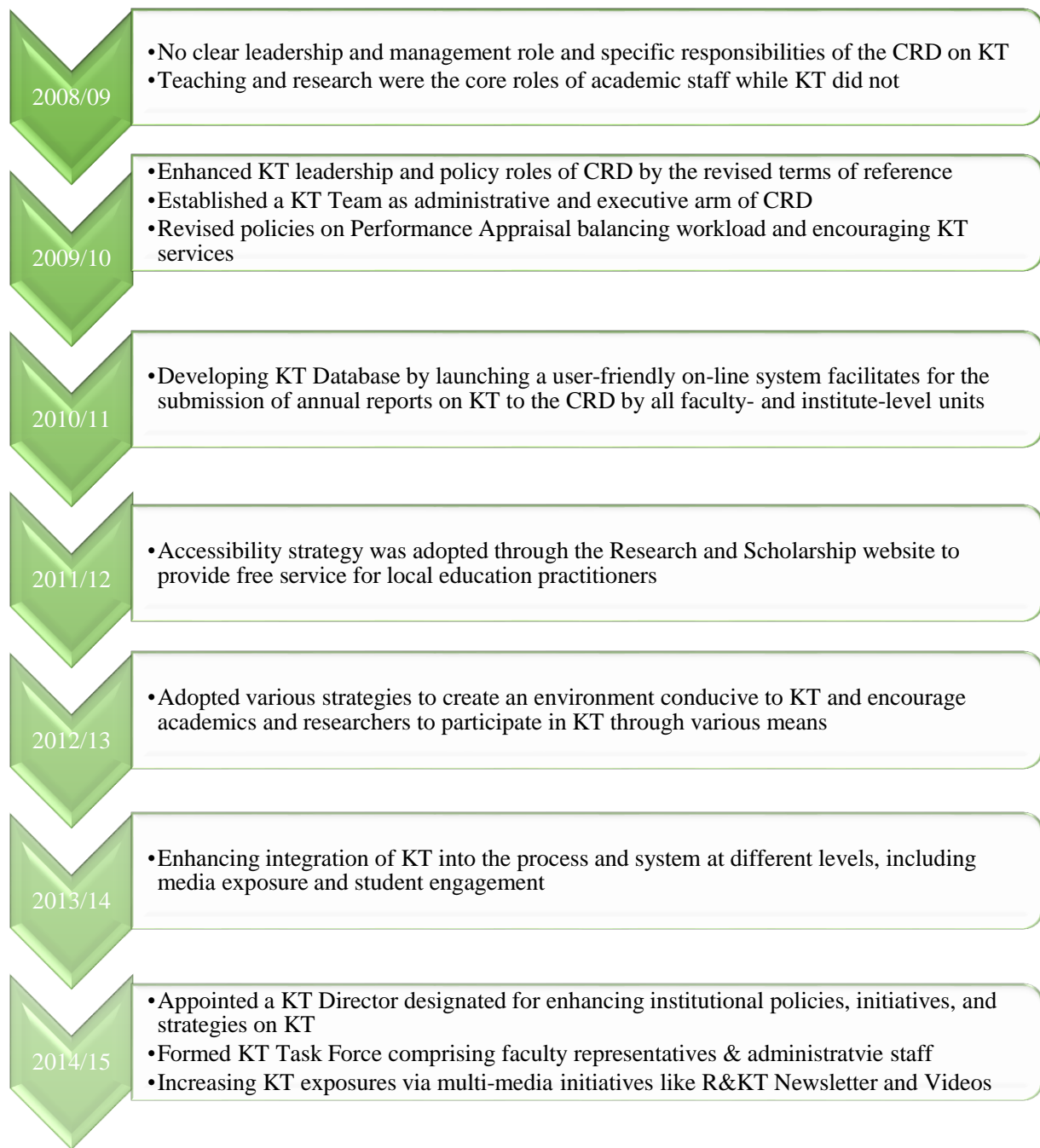


Figure 6.5. Major Milestones of KT Development from 2008/09 to 2014/15 in EdUHK.
(Sources: KT Annual Reports 2009/10 to 2014/15).

6.2.2.3 Evaluation of knowledge transfer strategy (with what effect). Lastly, the 6W-elements of ‘with what effect’ of which it involved an overall evaluation of KT strategies formulated, disseminated and implemented by EdUHK, particularly over 6-years of KT development. Evaluation questions of ‘how the adopted KT strategies would be commented?’, ‘what were the strengths and weaknesses of the adopted KT strategies?’, ‘how the adopted KT strategies could be improved?’, and ‘what kinds of foreseeable effects’ were associated with the impacts of KT as in terms of the last ‘W’ of the 6W-elements of the Heuristic Approach. To answer these questions, I attempted to retrieve data evidences from respective thematic summaries of the interview transcripts, supplementary with data from the case-institution’s relevant documents. Moreover, I further extracted some exemplars of ‘what kinds of foreseeable effects’ derived from the formulated and implemented KT strategies and their associated KT projects/activities from Appendix 6.3 into Figure 6.6 so as to create a visualising effect of KT impacts in EdUHK.

Key of KT Strategy

MS: Marketing
 AS: Accessibility
 ARS: Applied research
 KTIS: KT impact
 IS: Incentive
 FRS: Fiscal/resources
 ES: Engagement
 CBS: Capacity building
 EES: Enabling environment
 IS: Institutionalisation
 Colour Key for the Dimension of KT Strategy
 Green: Enabling environment
 Yellow: KT engagement
 Gold: Implementation
 Orange: Capacity building
 Light blue: Dissemination
 Blue: Formulation
 Light green: Protecting



Figure 6.6. Exemplars of 'What Kinds of Foreseeable Effects' Derived from the Formulated and Implemented KT Strategies in EDUHK (EDUHK KT Reports 2009/10 to 2014/15).



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6.2.3 Management and administration perspective on knowledge transfer

Strategies. In addition to the 6W-elements, the thematic summaries under the first MTC were derived from two EdUHK interview transcripts. The interviewees' perspectives, represented the management and administration side, and were consolidated with specific examples of the KTS dimensions and thematic sub-categories for thematic-based presentation and comparison within EdUHK's context (Table 6.4). Table 6.5 was tabulated for visualising a comparison of the management and administration perspectives on KT strategy.

Table 6.4

Comparative Table for Thematic-based Analysis of the Thematic Summaries under the First MTC of EDUHK's Interviewees

EDUHK		First MTC: Main thematic category of the planned and adopted knowledge transfer strategies
Inter-viewee	Thematic Summary	KTS Dimension (Thematic sub-category)
M2	Recognises staff's research and KT achievements is crucial incentive for participation and performance	KT engagement strategy (Incentive)
	Link up incentive mechanism with human resource management policy	
A2	Both monetary and non-material rewards are essential to facilitate more participation and qualitative projects in KT	KT engagement strategy (Fiscal/resources)
M2	Adopted bottom-up approach to form a KT unit by faculty representatives and dedicated staff appointment to promote KT	KT engagement strategy
A2	Staff development through conceptual and practical understanding of KT to engage participation	
M2	Core positioning of educational related research to create impacts on teaching, learning, education advance development	Implementation strategy (Applied research)
A2	Applies research-based knowledge for community improvement	
M2	Create impacts externally through research and consultancies to reinforce core position in educational related research	Implementation strategy (KT impact)
A2	Facilitate qualitative KT with applicability, innovation, legitimacy and creativity	
M2	KT Unit operates as a contact and coordination base between staff and society facilitating communication, quality brand building, partnership and collaboration	Enabling environment KT strategy
A2	KT Unit provides one-stop services in supporting and facilitating staff participation in KT	
M2	Setup of KT unit for disseminating and implementing KT policies reinforces KT as an important institutional policy	Enabling environment KT strategy (Institutionalisation)
A2	KT unit assists in formulating KT strategies, implementation and promotion plans, and provides one-stop services to staff in KT	
M2	Important for proactively promoting strengths, research potential, impacts, and brand building	Dissemination KT strategy (Marketing)
A2	Staff development through KT related workshops and seminars to enhance understanding on KT and good practices	Capacity building KT strategy
A2	With the creation of qualitative knowledge through KT participation, there comes to the needs for protection	Protecting KT strategy

Source: Interview Transcripts of EDUHK, June 2015.

Table 6.5

Visualising Comparison of the Management and Administration Perspectives on Dimensional KT Strategy in EdUHK

Dimensions of KT Strategy	Sum of Interviewees	Management Perspective (M2)	Administration Perspective (A2)
Engagement	13	8	5
Implementation	12	7	5
Enabling Environment	8	5	3
Dissemination	5	4	1
Capacity Building	3	0	3
Protecting	2	1	1
Formulation	0	0	0
	43	25	18

Regarding the aggregated code frequency of each dimension derived from the management (M2) and administrative (A2) side of interviewees (Table 6.5), both M2 and A2 placed similar emphasis on KT strategies of ‘engagement’, ‘implementation’, and ‘enabling environment’, while M2 put ‘dissemination’ as priority as contrast to A2 for ‘capacity building’. The similarity may be due to the unique context and development status of the University over the years of KT development while the contrast may reflect the personal experience and understanding of KT and its process of implementation. In similar priority (e.g., ranking of the dimensions) and emphasis of ‘engagement’, ‘implementation’, and ‘enabling environment’ between M2 and A2, M2 stressed staff engagement could be effective by demonstrating the advantages and functions of the KT unit establishment, in particular, of its bottom-up formation approach on one hand. On the other hand, engagement through an incentive mechanism could be aligned with recognition of staff achievement in research and participation in KT, and linked up with human resource management policy, such as recognition for applying promotion, and performance indicators. In contrast, A2 considered staff engagement should be better addressed with the staff development needs in understanding KT and its good practices through training while the incentive approach to

engage should include both monetary and non-material rewards¹⁹. A2 suggested that both encouragement and enhancement in KT should be emphasised.

Besides ‘engagement’ with different perspectives, M2 also emphasised on the ‘dissemination KT strategy’ by internally setting up a KT Unit functioning with its coordination in disseminating and implementing KT policies. Differently, A2 placed ‘capacity building’ as an important priority whereby staff development is of paramount importance at the initial stage of KT development in which staff could understand what is KT and good practice in KT through their participation in KT-related workshops and seminars.

Among the same strategies, both priority ranking of the first three KT strategic dimensions were the same while there was only the ‘engagement’ aspect that seemed to have different emphases and perspectives between M2 and A2. However, both perspectives on ‘implementation’ and ‘enabling environment’ seemed to be similar, particularly in the context of EdUHK, from which they stressed on the impact of producing aspects of the applied research, and the institutionalised functioning aspects of the KT Unit serving to create the enabling environment for the development of KT at large.

The thematic summary of M2 was that

HKIEd's (EdUHK) core positioning of KT strategy is mainly focused on educational related research [outcomes] from which it assumes a leading role so as to create impacts on teaching and learning, education advance development as well as local education reform [processes]. In order to actualise and reinforce the core positioning, HKIEd (EdUHK) has adopted external impact strategy through research and consultancies at the local, regional and international aspect as well as research informed student learning and affected social changes during the process of social services on one hand [outcomes]. On the other hand, institutional change strategy has also adopted by establishing a Knowledge Transfer Unit, which is under the purview of Research and

¹⁹ Note for analysis part – M2 emphasized on social psychology and non-material reward aspects, involved human resource management technique and perspective while A2 focused on practical benefit and operative aspect of KT strategies.

Development Office, for disseminating the importance of KT [outcomes] while the Unit will perform its assistance, coordination and implementation functions in relation to KT [processes].

Apart from the establishment of KT unit, staff engagement for involving participation and mutual promotion of KT was adopted with a bottom-up approach so that a designated group was formed by representatives from each faculty and dedicated appointment of individual staff [outcomes]. Internally, KT as an important institutional policy has reinforced by the setup of KT unit and its coordination in disseminating and implementing KT policies [outcomes]. Externally, it becomes a contact and coordination point for society needs matching and facilitating partnership and collaboration, in particular of our research potential and impacts [processes].

Alternatively, our strategy towards KT should increasingly involve more partnerships at the regional and even international level so as to establish our research impacts through internationalization [processes]. It is essential to encourage and facilitate our academic staff and students going beyond the comfort zone while letting outsiders learn about our research impacts and readiness to serve the community [anticipations]. As a matter of fact, marketing strategy is important for proactively promoting our strengths, research potential and impacts as well as brand building at regional and/or international level [anticipations].

However, each faculty or academic staff has their own (research) interest and orientation that from our central policy perspective, we need to strategically engage our faculty staff by demonstrating the advantages and functions of KT unit establishment, in particular of facilitating communication, quality brand building, coordination and understanding between and amongst key stakeholders [processes].

Indeed, KT in HKIED needs commercializing its service impacts and clients' satisfaction so as to become outstanding amongst research universities and their KT services [anticipations]. Our positioning of personal achievement oriented marketing strategy has successfully altered our image in the outside world [outcomes].

Last but not least, recognition of the staff achievement in research and participation in KT is of paramount importance since people need incentives to become involve and perform [anticipations]. That's why we have linked up incentive mechanism with human resource management policy, such as recognition for applying promotion, and performance indicators [outcomes].

6.3 Case Conclusion

6.3.1 Capacity Enhancement-Driven Model. After a thorough investigation and analysis of the planned and implemented KT strategies in EdUHK guided by the systematic descriptive framework, 6W-elements of the heuristic approach and the TQTAP, I observed that EdUHK's KT development was closely aligned with the capacity building process and interrelated strategies. Likely, its KT development was guided by a capacity-enhancement driven model of development. In the case of EdUHK, its KT development, particularly in terms of research-based knowledge transfer through applied research strategy, was not their core area of development, notwithstanding the institution has over 150 years of historical roots of teaching and education profession knowledge transfer experience (EdUHK, n.d.c). M2 mentioned during the interview that,

Research and/or knowledge transfer were not emphasized in EdUHK before the year 2000 while they were taken seriously and promoted systematically for its development commencing from 2006 onwards. It was obvious that EdUHK needs to enhance strength in research and knowledge transfer, particularly when the institution was assessed inadequacy in research during the research assessment exercise in 2006 as well as the application for transforming into a University in 2008/09.

Under the circumstantial background of expertise in education professional training in the past and the endorsement of stand-alone development into an “*Education-focused, research strong and multidisciplinary institution*” in 2009 by the UGC (EdUHK, n.d.c), the launching of recurrent KT funding by the UGC for promoting new KT initiatives in 2009-10 become a catalyst and strategic mechanism for the former education institution transforming into the status of university. This was no wonder why the institution has needed to enhance its capacity in research and KT in order to pursue the ultimate goal as an independent university. M2 further stressed that ‘an education-focused, multidisciplinary, and enhancing research strength direction was adopted, includes putting emphases on the development of applied

research and knowledge transfer in the multidisciplinary areas of education, arts and humanities, social sciences, and creative arts and culture’, which aligns with the R&D philosophy of “Education Plus” of EdUHK.

In fact, KT has become a catalytic tool and process in the context of EdUHK in that the formulation and implementation of different strategies in supporting KT development were interrelated with the necessities for capacity building within its research infrastructure. These included both physical (e.g., university- and faculty-level research centres) and non-physical (e.g., experts with specialised research areas) aspects in EdUHK. To engage staff participation in KT, for instance, the leadership, policy, and management capacity in KT and research development has been enhanced progressively over the years through the strengthening of the institutional infrastructure, like the capacity building role of the KT Task Force, in EdUHK. Indeed, the “facilitating and capacity building approaches” have become the core principles and prioritised strategies of the University guiding staff engagement in and implementation of KT at the institute and academic unit levels (EdUHK, 2009, p. 3) through a combination of specific KT strategies. Staff and academic units’ capacities in research, KT, university-owned knowledge, and related aspects of engagement are persistently driven by the enhancement requirements and strategies of the University, embedded in the core KT objectives and priorities over the years and beyond. Recurrently, KT objectives in the building of intellectual capacity and capital, linking research and teaching closely to KT, and facilitating local and regional education development have implicitly and explicitly manifested the capacity enhancement needs for KT development (EdUHK, 2016a). Its expansion was driven by the core objectives currently resulting in the strengthening and advancing of research, professional knowledge in education and related areas, and the contributions to University and education profession development locally and regionally. Besides, KT priorities in capacity enhancements through long-lasting impacts, research

capacity building, and collaborative partnership and network building are also the drivers of KT initiatives/activities.

Consequently, the retitled status as University, the upgrading of QS Rankings by subject, and the significant impacts produced through the applied research and KT initiatives have had substantial implications of the subsequent results from the process of capacity building over the years. Other evidences in supporting the observed model include:

1. Institutionalising the KT organisation structure over the 6-year KT funding initiative period by enhancing functions, responsibilities, and capacities in KT formulation, dissemination, and implementation by the CRD, KT Task Force, and KT Unit (EdUHK, 2010a, 2015b).
2. Adopt a long-term capacity building strategy by different means for research, teaching and KT enhancements, and impact producing (EdUHK, 2010a - 2015b).
3. Criteria-based award schemes for research and KT culture/capacity building and transformation through incentive encouragement and modeling (e.g., KT Awards Scheme, KT Matching Grant) (EdUHK, 2010a).
4. Introduced supportive institutional policies, such as practices in visiting professors/scholars appointments, for research and professional enhancements as well as facilitating KT participation (EdUHK, 2010a).
5. Supportive institutional policy for the reassignment of overall workload of individual staff members for increasing their work/time capacity to undertake commissioned or consultancy projects of knowledge transfer (EdUHK, 2009).
6. Established central data base systems and built up relevant websites, such as website for KT, research and scholarship, and research repository, for facilitating research and KT capacity building through sharing, planning and evaluation (EDUHK, 2014).
7. Research capacity strategies in promoting and facilitating an active research culture amongst academic staff over the years, resulting in the increase of intellectual assets and capacities for the provision of quality KT activities (EDUHK, 2010a).
8. Provision of systematic workshops, seminars, and sharing sessions in relation to advanced knowledge, research and KT regularly for capacity building progressively amongst academic staff (EdUHK, 2010a).
9. Building the research and KT capacity through expanding the University's "critical mass of expertise and leading researchers in priority areas" by research groups'

consolidation into a few university-level research centres, and diversification of research strengths through the organisation of faculty-level research centres (EdUHK, 2010a, p. 12).

10. Adopted strategies to encourage and facilitate partnership engagements in the community and education sector from which capacities for both parties, i.e., academia and the key stakeholders, could be enhanced through reciprocal transfer of professional knowledge, good practices and/or relevant data during the implementation process of collaborative research, workshops and short courses (EdUHK, 2010a).

Relevant and an overall key KT strategies at different stages of KT development over the past 6-years in EdUHK are summarised in Figure 6.7 for a brief and sequential illustration.

Stage/Phase I: 2009/10 to 2012/13 Establishing Enabling Environment - Facilitating & Capacity Building

- Initial institutionalisation by enhancing CRD's KT responsibilities
- Long-term capacity building by different means for research, teaching and KT enhancements, and impact producing
- Engagement through incentive strategies: monetary or non-material rewards
- Criteria-based award schemes for research and KT culture/capacity transformation (e.g., KT Awards Scheme, KT Matching Grant)
- Introduced supportive institutional policies facilitating for KT participation
- Established systems for KT planning, implementation and evaluation

Stage/Phase II: 2013/14 - Enhancing Institutional KT Policies and Initiatives

- Further institutionalization through the setup of KT Taskforce, KT Unit and appointment of a KT Director to review and reinforce KT strategies
- Academic units or staff engagement through bottom-up representative participation in KT development
- Marketing strategy for increasing publicity and visibility of KT integration into learning, research, and community services
- Enhancing accessibilities for KT dissemination through multi-media channels

Stage/Phase III: 2014/15 and Beyond - Enhanced Research Impacts through KT Services and Priorities for Research and KT

- KT services with impact strategy through high-quality research and create inspiring and innovative knowledge to the education profession and the wider community
- Protecting strategy to preserve university's owned intellectual properties
- Engagement with incentives by stressing importance and impact of KT in the assessment criteria of President's Award for Outstanding Performance in Research
- Reinforce marketing strategy via KT accessibility by multi-media
- Commercialisation by increasing KT income while serving community in future

Figure 6.7. Relevant and Key KT Strategies at Different Stages of KT Development Sources: EDUHK KT Annual Report – 2009/10 to 2014/15.

To sum up the case by quoting the ‘Looking Forward’ contained in the 2014-15 KT Annual Report of EdUHK (2015b) as follows:

The Institute (University) will continue to attach great importance to extending our high-quality, high-impact research and innovative scholarship to the benefit of both the school sector and the wider community. In the next triennium, however, we are expanding the net worth of these services to the community to include income generation, and will adjust our priority in increasing the income for various KT activities while serving the community. Looking ahead, the Institute (University) will develop more innovative channels to engage the school sector and the community at large for promoting KT. (p. 12)

Chapter 7

Case Study of Lingnan University's Knowledge Transfer Strategies

7.1 Knowledge transfer (KT) in Lingnan University (Why KT)

7.1.1 Historical background, vision and mission. Lingnan University (LU), dates back to 1888 when the American Presbyterian set up the Christian College at Guangzhou in Mainland China, was re-established as Lingnan College in Hong Kong in 1967 and was recognised as a registered post-secondary institution in 1978 sub vented by the Government of Hong Kong (Lingnan University [LU], 2016a). In 1999, it was entitled university status and renamed as Lingnan University (hereafter as LU), a publicly-funded tertiary institution under the aegis of the University Grants Committee (UGC) (LU, 2016a). As the liberal arts university in Hong Kong, LU embraces “to excel as an internationally recognised liberal arts university distinguished by outstanding teaching, learning, scholarship and community engagement” (LU, 2016b). To pursue the mission of LU, it commits to “encourage faculty and students to contribute to society through original research and knowledge transfer”, nurture all-round students through community service, service-learning, and internationalised learning environment, and “provide quality whole-person education informed by the best of Chinese and Western liberal arts traditions (LU, 2016b)”. In respect of its motto “Education for service”, LU encourages staff and students to engage with the community and take up social responsibility through caring for others, serving and making a positive impact on humanity betterment (LU, 2016b). LU “promotes service-learning (S-L) and other forms of community service” engaging with the community and helping the needy for echoing the motto of “Education for service” (LU, 2016c).

7.1.2 Academic profile and university's population. As of the 2015/16 academic year, LU comprises of 3 faculties with 16 departments cum 2 centres, 1 Programme Office and a division of Graduate School (LU, 2016i) (details in Appendix 7.1). Of the populations

within the University, there were 2,614 enrolled students (UGC, 2015b), 282 employed staff, of which 159 were categorised as academic staff and 123 as academic support and administrative staff (UGC, 2015a), and 986 graduates (LU, 2015a) in 2014/15. LU was ranked 601th out of the annual league table of the top 800 universities in the world in the 2015/16 Quacquarelli Symonds (QS) World University Rankings and 142th in Asia in 2016 (QS, 2015b). For the QS Rankings by subject and faculty, LU's Philosophy and Arts and Humanities were ranked as 101-150 and 235 respectively in the 2015/16 academic year (QS, 2015b).

7.1.3 Research infrastructure and development of knowledge transfer. The research infrastructure in LU internally comprises 10 research units and 1 Office of Research Support (ORS) of which those research units could be categorised as research institutes, centres and programmes respectively (details infrastructure, classification of disciplinary knowledge (Biglan, 1973), and KT areas - technology/non-technology in Appendix 7.2). Besides academic staff of individual faculties and departments, some units and offices from academic support, e.g., Office of Service-Learning (OSL) and Teaching and Learning Centre (TLC), and 1 Division of Graduate Studies (DGS) were established recently in 2015. They also have the research and/or KT development role amongst their core functions and roles in their designated areas of responsibilities (LU, 2016f, 2016g). However, apart from the research units and ORS, I have only incorporated the research-related postgraduate programmes under the DGS into the research infrastructure in LU. In light of the LU's research infrastructure, and apart from individual academic staff, are the sources of knowledge creation and fundamental basis for the development of KT, particularly under the direction of "Education for Service" and "Community Engagement" (LU, 2016b). To categorise the types of disciplinary knowledge and KT areas - technology/non-technology in relation to the research infrastructure in Appendix 7.2, the steps of a brief review of the

designated websites of the research units were conducted and manifested as in terms of abbreviations and key of categories (please refer to the classification process mentioned in Chapter 5).

With the policy support from the University Research Committee (URC) and the administrative assistance and KT coordination from the ORS, LU expects “its excellent faculty to fulfil their intellectual potential and to provide teaching that is informed and inspired by their research” (LU, 2016i). According to LU’s research priorities defined under the University’s Strategic Plan 2009-2016, there were nine identified research focused areas (LU, 2016i) namely,

1. Aesthetics and the Arts;
2. Cultural Research and Development;
3. Hong Kong Studies through History;
4. Modern Literature in Chinese;
5. Taxation in China;
6. International Financial Markets and Economic Performance;
7. Conflict Management in Chinese Business;
8. Public Policy and Governance; and
9. Social Gerontology, i.e., Age and Work-Life Balance.

With reference to the updated and extended mission statement of LU, it encourages faculty and students to contribute to society through original research and KT (LU, 2016b), of which it drives them to link up research with KT and exert impacts to the community. One of the LU’s core endeavours is to inform policy with impacts and significance through research and KT from which “KT is not the literal transfer of knowledge, but rather the transformation of knowledge” (LU, 2016, April). These KT capacity with informed policy effects are regularly demonstrated through LU’s policy research areas in economics, elderly care, the arts

and culture (LU, 2016, April). Besides, Service-Learning (S-L) in LU is at the core of the University's goal and edge in KT, particularly for the faculties' and students' KT to the community through S-L, and the S-L and Research Scheme (SLRS) (LU, 2015b).

7.2 Knowledge Transfer Strategy – The Study Case

LU as one of the study cases, I replicated a similar data presentation and analysis process by drawing reference from the 6W-elements of the heuristic approach and the case study protocol. Accordingly, six sections with sub-sections, which included 'what to be transferred', 'in what ways', 'to and by whom', 'with what effect', 'management and administration perspective', and "case conclusion - the LU model'. Respectively, I attempted to answer RQ1 and RQ2 of the LU case through data presentation and analyses of the KT strategy formulation and development process. Data presented in the following sections were mainly derived from LU's 6-year KT reports, strategic plan, annual reports, designated website, interview transcripts from the management and administration perspective, and some other sources relevant to KT and LU.

7.2.1 Planned KT--the objectives, strategies and management structure

7.2.1.1 Formulation of knowledge transfer strategy (what to be transferred)

7.2.1.1.1 KT organisation and objectives. Unlike the other two cases, LU has not yet developed and established a designated KT office or university-wide KT task force for rendering administrative and strategic support to the senior management of the University for overseeing and planning KT development. Until 2013-14, the ORS was designated for a concurrent supportive role and function in research and KT policies (LU, 2014, 2016h).

Actually, the planned KT strategies in LU, its KT goals and management structure were obviously evolving with different emphases across the 6-year KT funding period.

Notwithstanding that KT activities in terms of service-learning, consultancy, contract and collaborative research, and social and community projects which were implemented before

the commencement of KT recurrent funding in the financial year of 2009-10 (LU, 2014; 2015 – KT Report).

The key objectives of KT in LU were various at different stages of KT development while there were no explicit KT objectives stated on the KT webpage of the ORS. Initially, the Asia-Pacific Institute of Ageing Studies (APIAS) aimed to build up a “Lingnan’s model for KT programs” (LU, 2010) while the Office of Service-Learning (OSL) emphasised to engage academic staff and students through Service-Learning (S-L) and applied research knowledge to serve the community (LU, 2014). Under the enhanced KT structure at the institute level, the ORS attempted to encourage and engage academic and teaching staff to participate in and serve through KT to the community (LU, 2014) while the ultimate purpose of KT is to exert considerable impacts on the social concerned issues and benefit a specific target group in the society (LU, A4, 5 August 2016). A new vision and mission statement has highlighted community engagement and encouragement of faculties and students contributing “to society through original research and KT” (LU, 2015b) that it was explicitly stated and officially endorsed in 2015 (LU, 2015a).

7.2.1.1.2 Strategic plan for the pattern of a 7-year cycle. Under the endorsed strategic plan of a 7-year cycle for 2009 – 2016, of which its action plans were updated in 2011 and 2013 respectively, it has refined the vision and mission statement for echoing and articulating the values embed in the liberal arts education and the “Education for Service” at large (Lingnan, 2009). Alternatively, LU has recognised six strategic areas, namely academic development, research, student development, institutional advancement, academic support services, and sub-degrees and continuing education, as the core of development and change through the derived operational objectives and action plans (Lingnan, 2009).

Despite this 7-year cycle of the University’s strategic plan commensurate with the two triennium periods, i.e., 2009 to 2015, of the KT recurrent funding initiative launched by the

UGC, the strategic area of KT was neither explicitly stated in the strategic plan nor incorporated in the two updates. Before 2014, the new vision and mission statement in relation to community engagement and KT, there was also no explicit and specific KT policy statement or KT mission or KT related description at the institutional level that could be found in the existing research and KT related webpage/website (e.g., designated KT webpage inside the website of ORS of LU at <https://www.ln.edu.hk/ors/kt.php>) and Annual Reports of LU before 2013/14, e.g., 2008/09 to 2012/13. These observations were substantiated by searching through the terminology of ‘knowledge’, ‘transfer’, ‘knowledge transfer’, ‘strategic’, and ‘strategy’ to explore whether there were such terminologies with KT related descriptions stated in the reports. The results had no concrete policy and obvious mission related to KT while the term of knowledge did exist with a common meaning of acquired and applied knowledge. “A liberal arts education encourages students and faculty members to pursue knowledge in depth and integrate knowledge into a broader perspective” was one of the typical examples contained in the annual reports before 2013/14 (Lingnan, 2013, p. 8).

Nevertheless, a new vision and mission statement has highlighted community engagement and encouragement of faculties and students contributing “to society through original research and KT” (LU, 2015b) that it was explicitly stated in the 2013/14 Annual Report onwards while it was officially endorsed in 2015 (LU, 2015a). Table 7.1 appended as follows demonstrates the differences in vision and mission statements before and after the watershed of 2013/14, of which KT strategic status was in transformation.

Table 7.1

Transformation of KT Strategic Status in LU

Change area	Vision and Mission Statement (Underline Changes)	
	Before 2013/14	From 2013/14 onwards
Vision	“To excel as an internationally recognised liberal arts university distinguished by outstanding teaching and the highest standards of scholarship”.	“To excel as an internationally recognised liberal arts university distinguished by outstanding teaching, <u>learning</u> , scholarship and <u>community engagement</u> ”.
Mission	“Lingnan University is committed to the provision of quality education distinguished by the best liberal arts traditions. It adopts a whole-person approach to education which enables its students to think, judge, care and, ultimately, act responsibly in the changing circumstances of Hong Kong, the region and the world”.	<ul style="list-style-type: none"> - “providing quality whole-person education informed by the best of <u>Chinese and Western</u> liberal arts traditions”; - “nurturing <u>all-round excellence</u> in students, including such attributes as <u>critical thinking</u>, <u>broad vision</u>, <u>versatile skills</u>, <u>socially responsible values</u>, and <u>leadership</u> in a changing world”; and - “<u>encouraging faculty and students to contribute to society through original research and KT</u>”.

Source: Annual Reports of LU (2012/13 and 2013/14)

7.2.1.1.3 Knowledge transfer in the context of LU. Stating three interviewees of LU on the KT context, they have briefly revealed a transformation process of KT policy, strategy and development over the years of KT initiative funding. One of the interviewees from the administration side (A3) emphasised the KT activities, e.g., conferences, seminars and consultancies, under the KT recurrent funding were comparable with those organised in the past. A3 said, ‘in regard of the school's motto, LU already has a long tradition of close relationship with and service provision to the community whereby a lot of collaboration projects established with the community’ [processes]. A3, in fact, mentioned that ‘the tradition of community service has already encapsulated in LU's motto of “Education for Service” so that S-L at Lingnan becomes core element of KT’ [outcomes]. This, indeed, reflects the earlier development of KT in LU through, for instance, the strategy of community engagement, S-L, and collaboration with the community. A3 spelt out that both the organisation structure for the operation/coordination of KT has been changed from the Associate Vice President (Academic Quality Assurance)/the Registry and APIAS/OSL to Vice President/URC and ORS respectively. A3’s initial observation was that ‘the most differentiation from the administrative perspective was the change of operation structure - from decentralisation (i.e., KT was

implemented by different departments on their own paths and ways) to central co-ordination and consolidation' [outcomes]. Besides, A3 interpreted that the co-ordination and compilation work under the ORS were involving KT engagement and incentive strategy for the purposes of promoting and developing KT in a university-wide policy and mode of operation. KT development in LU was transforming from an individual basis of KT implementation to a centralised coordinating process of strategy formulation, dissemination and implementation.

The pre-transformation KT context in LU was further highlighted by an interviewee from the management side (M3). M3 specified that the areas of KT work under the coordination of APIAS and OSL were restricted and confined to the unique role and strengths of the two units while both did not have contacts, collaborations, and mutual relationships with the LU's research institutes/centres [outcomes]. What M3 mentioned was particularly covered the KT funding period commenced from 2009-10 to 2012-13. This reflects a simple-unit structure for KT operation, i.e., APIAS or OSL was held responsible for the KT while reporting to the Registry, whereas, it was not a university-wide mode of involvement and operation. Rather, they put more emphasis on the implementation strategy, like thematic and S-L, with their own strengths while APAIS attempted to formulate LU's own model of KT on a thematic basis with reference from the selected theoretical framework.

In respect of the views on KT in the context of LU was expressed by an interviewee from the administration side (A4), the KT policy and strategy transformation could be remarked as:

KT is proceeding under the framework of the "three pillars" in the University, namely teaching, research and KT [processes]. As a Liberal Arts University, Lingnan has its unique characteristics to implement KT and contribute to the society [processes]. While Service-Learning continues to thrive at LU, the University has broadened its KT activities to a wider horizon by engaging and supporting members of all Faculties further in their KT initiatives [outcomes]. The awareness is emerging among researchers [outcomes] who will consider if KT can be built in from the design of their research [anticipations].

7.2.1.1.4 Organisational structure and management function in KT strategy

Formulation. Although the overall pattern of planned KT strategies were more emphasised on various types of implementation strategy, such as impact, collaboration, thematic and service-learning KT strategy, there were other emphases at different stages of KT development in LU, particularly the KT funding operators/coordinators over the 6-year period were different. In the first three reporting years of the KT recurrent funding from 2009-10 to 2011-12, the KT implementation and funding operator was delegated to APIAS, with support from OSL, for the implementation of thematic KT endeavours contributing to the conceptualisation of knowledge transfer through the KT model building strategy (LU, 2010; 2011 & 2012).

As stated in the annual KT reports for the first three years, LU attempted to build up a “Lingnan’s model for KT programs” derived from Piaget’s theoretical framework of developmental and transformation perspective (LU, 2010, p. 18). Based on the model, “health and ageing from a life course perspective” was selected as the thematic knowledge to be transferred through the implementation of KT programmes (LU, 2010, p. 20). In regard of the 2nd and 3rd year of KT model development, the thematic strategy was continued to be adopted maintaining the focus on “health and ageing” whereby, the sub-themes of “Physical Health: Healthy Life! Healthy Mind!”, “Psychological Health: Age Posi+ive!”, and “Social Health: YO (Young-Old)! Partnership” were continued to be implemented (LU, 2012, p. 3). The core differences among the first three years of adopted KT strategy were its evolvement from one-way to multiple-ways of KT as well as development from less to more stakeholder involvement in KT whereby, the scope and scale of KT projects were extended (LU, 2012).

In the 2nd triennium from 2012-13 to 2014-15, the OSL and the ORS took up the KT funding operator/coordinator role in respective years, i.e., OSL for the 2012-13 while ORS for the 2013-14 to 2014-15 respectively. In the years of OSL’s KT operation, it focused on service-learning (S-L) and applied research strategy so as to engage academic staff and

students through S-L and applied research knowledge to serve the community as in terms of community services and collaborative projects. “KT addressing society’s concerns” was one of the core objectives under the purview of coordination by OSL during the first year of the 2nd triennium cycle of KT funding (LU, 2014, p. 1). At the beginning of 2014, ORS was designated by the University to take up the KT role as KT funding administrator and coordinator, in particular of KT promotion, coordination and strategy implementation in a university-wide spectrum (LU, 2014).

Under the transition of the KT coordination role among APIAS, OSL and then ORS from 2009-10 to 2014-15, the University structure for KT was enhanced through the senior leadership by the Vice-President and the University Research Committee (URC) with administrative and coordination support from the ORS (LU, 2014). In respect of the emphasis on a university-wide KT participation and the enhanced KT structure at the institute level, the engagement strategy become essential so as to encourage and engage academic and teaching staff to participate in and serve through KT to the community. As stated in the 2014-15 KT Annual Report, LU needs “to engage academics in KT apart from teaching and research work” while building up “the partnership base of external organizations in support of KT” (LU, 2015b, p. 1). In order to engage academics in KT, the ORS has adopted the incentive strategy by the establishment of the “KT Project Fund (KPF) to support initiatives from all academics” of the University whereby “a brand new series of KT seminars to explain in details possibilities under the KPF and data to be captured to showcase achievements” were conducted (LU, 2015b, p. 1).

Passing through 6 years of KT implementation and coordination experience under the earmarked KT funding, LU’s KT management structure has gone through an experience of transition as in terms of KT roles and responsibilities among the three core units. It began to transform into a more centralised function and institutionalised structure. Notwithstanding

that there was no separated establishment of KT Office or KT Task Force/Team in LU whereby the ORS became the coordinating unit in KT amongst all 3 faculties, 16 departments, 2 centres, and 10 research centres/programmes. Figure 7.1 represents the current KT management and organisational structure of LU who are taking in-charge of strategic planning and development of KT in the University.

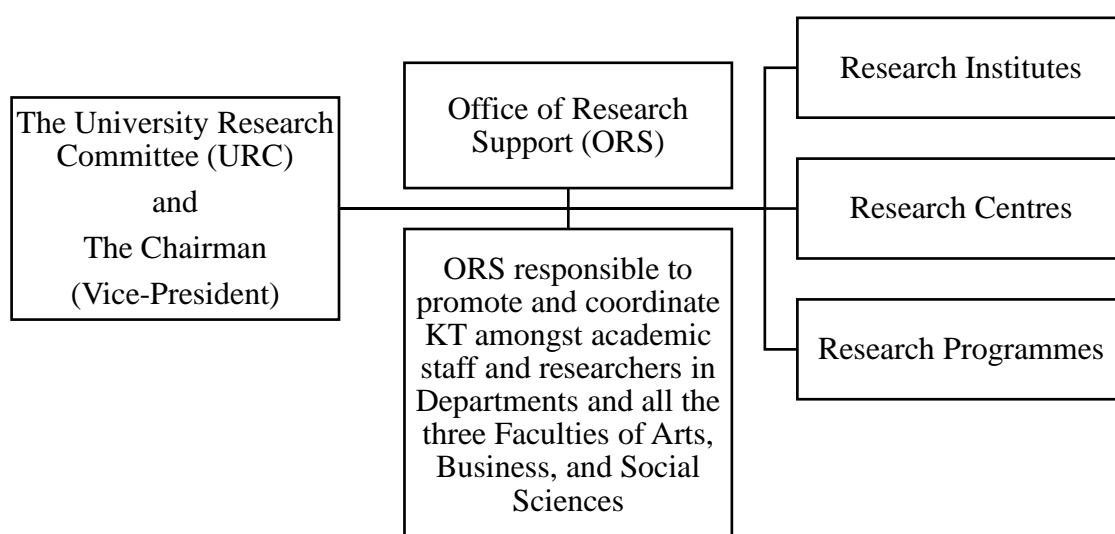


Figure 7.1. Management and Organisational Structures of Knowledge Transfer in LU (Source: LU, 2014 and 2015 – KT Annual Report & Website of ORS)

7.2.1.1.5 Knowledge transfer funding sources – driving for initiatives. The major funding sources for delivering and operationalising the institution's overall KT strategies through different mechanisms, such as KT coordination units and KT Project Fund (KPF), are mainly derived from the University Grants Committee Knowledge Transfer recurrent funding. This commenced from the financial year of 2009-10 while additional funding support from the University's own earmarked funding for research linking to KT (Lingnan, 2015b).

Besides, KT with research related projects were supported by various internal and external funding schemes or bodies, such as General Research Fund, Lingnan Foundation Fund,

Internal Research Grant, NGOs, NWO WOTRO Science for Global Development, and fund from consultancy projects, while the best competitive KT initiatives/projects were selected and provided with additional funding (e.g., KPF) (Lingnan, 2015). Table 7.2 lists out different types of schemes or awards, if any, initiated by LU, of which they are directly or indirectly related to the funding sources for KT. They are illustrated with resource implications such as year of commencement, total number of projects, total awarded amount, sources of funding, and broad areas of KT in technology (KTTA), non-technology (KTNTA) and entrepreneurial aspects (KTEA), if applicable.

Table 7.2

Different Types of Schemes or Awards Initiated by LU from 2009/10 to 2014/15

Types of Schemes or Awards	Kick Start in	Major Source of Funding	What to be Transferred
KT Project Fund (KPF)	2014-15	UGC	KTNTA

Source: LU Annual Report on KT Recurrent Funding – 2014-15.

Regarding the proportion of UGC KT recurrent funding allocated to LU amongst the eight UGC-funded institutions was relatively small (ranked 8th) with an annual funding of 1.1 to 1.2 million Hong Kong dollars from 2009/10 to 2014/15, inclusive of the KPF which was launched in 2014-15 and sponsored by UGC KT funding (LU, 2015b; UGC, 2010-2015). Specifically, the KPF aims to encourage and engage academic staff with funding support to initiate and conduct KT projects from which their expert knowledge and/or research findings could directly contribute to the community and/or the industry (LU, 2015b). Apart from the designated grant for KT initiatives, sources of academic/applicable knowledge and/or innovations were mostly derived from academia's research of which they were either supported by different types of research grants from the Research Grants Committee (RGC)/UGC or external sources of funding from the community/industry. These are, indeed, important sources of research-based knowledge which are fundamental for the KT initiatives and strategies to be implemented by LU. Additionally, service-learning has already embraced

as one of the essential strategies of and a medium for KT in LU prior to the launching of KT recurrent funding, of which funding from various sources are designated for the provision of S-L and S-L Research Scheme (SLRS) amongst students and/or academic staff in the University. One of the descriptive statements prescribed in a KT Annual Report has clearly illustrated the linkage between S-L and KT as follows: “*Lingnan is dedicated to connect meaningful community service with academic learning objectives to enrich its liberal arts curriculum and adopt Service-Learning (S-L) as a powerful teaching and learning strategy to incorporate Knowledge Transfer (KT) at the University level*” (LU, 2013, p. 2).

Table 7.2 lists out the different types of research grants and designated types of KT grants for LU retrieved from the UGC-funded institutions’ statistics between the financial years of 2009/10 to 2014/15. The same period of funding sources from UGC, donations, subsidy from LU, and research income, etc. were designated for the implementation of S-L in LU across the whole academic community were also listed out in Table 7.2.

Table 7.2

Different Types of Research Grants and Designated Type of KT Grants for LU from 2009/10 to 2014/15

Type of Grants	Financial Year	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
		Hong Kong Dollars in Million (\$m)					
RGC Earmarked Research Grants		3.4	5.9	5.4	4.7	7.1	3.7
Areas of Excellence Scheme		-	-	-	-	-	-
Grants for Knowledge Transfer Activities		1.2	1.2	1.2	1.1	1.1	1.1
Theme-based Research Scheme		-	-	-	-	-	0.1
Funding for Service-Learning Projects / Research Schemes		20.6	20.5	16.6	19.0	18.6	17.5
Total		4.6	7.1	5.4	5.8	8.2	4.9

Sources: Grants for UGC-funded institutions from 2009-10 to 2014-15 (UGC, 2010-2015) and Funding for Service-Learning in LU from 2009-10 to 2014-15 (Office of Service Learning/LU, 2010, 2011, 2012, 2014, 2015a and 2016a).

7.2.1.1.6 What to be transferred under the formulated KT strategies. LU has formulated and implemented relevant KT strategies with different stages of emphasis through three different coordinating units within the University, namely as APIAS, OSL, and ORS respectively, during the 6-year period of UGC earmarked KT funding. Its KT strategy formulation and emphasis were quite distinctive amongst the three responsible units, despite the overall dimension of KT implementation strategy over the years was unique in prioritised importance. In general, the motto of “Education for service”, the mission of “encouraging faculty and students to contribute to society through original research and KT” and the purposes of liberal arts education (LU, 2016b) are shedding light on the formulation of specific KT strategies for achieving the embedded purposes. Specifically, even under the formulated implementation strategy, each unit has its own conceptualisation on KT and strengths for KT implementation. The strategic focus was different amongst the units, despite their common approach of linking research for application by the community stakeholders (e.g., M3, A3 and A4 emphasised the importance of applied research strategy by contributing to the community through addressing the needs of society and the practicability of research knowledge (interview transcripts of three LU’s interviewees).

Among the implementation strategy, APIAS put emphasis on community education and thematic KT strategy aligning with the formulation strategy of KT model building and theoretical-based KT strategy. In 2009-10, APIAS attempted to develop LU’s KT operative model by producing a KT Manual based on some selected theoretical frameworks of KT, e.g., development and life course perspective, with specific thematic knowledge such as non-communicable disease (NCD), generation solidarity, and ageing (APIAS - LU, 2010 and 2011). In contrast, the establishment of OSL has already been embedded with a KT model through the approach of Service-Learning whereby S-L for KT has become the emphasis in connection with the strategy of networking, collaboration, and interaction between the

University, i.e., students and academic staff, and the community, i.e., the stakeholders with different needs. OSL adopts S-L as an effective strategy for KT through networking, collaboration, and interaction between university and community deriving for mutual benefits during the process of service and learning via professional and/or research-based knowledge (OSL - LU, 2013). From 2013-14 to 2014-15, ORS began to normalise the development of KT in LU by adopting common KT strategies. These include encouraging academia to link KT with research impacts, engage staff participation in KT, and promote KT through incentive strategy, as the other two cases did (ORS – LU, 2014 and 2015). In its 6-year of KT development, the formulated KT strategies were unique in some areas for each responsible unit. Each specific stage was, indeed, associated with the special background and strengths of individual units.

In order to substantiate what kinds of KT strategies have been formulated by the institution as well as what was transferred under the formulated KT strategies, I employed the adapted TQTAP and the 6W-elements of the heuristic approach to search for KTS in EdUHK. Details of both applications were described and explained in the methodology chapter while specified data in relation to and crucial for the formulated KT strategies and the aspects of the 6W-elements of LU are consolidated in the following section of ‘KT strategies illustrated with examples’ and Appendix 7.3 respectively. Only specified data with relevancy has been selectively presented in this and the following sections/sub-sections of this chapter.

7.2.1.1.7 Formulated KT strategies in LU. Out of 911 coded segments, LU has constituted around 24% (i.e., 221) of the total, whereas, 42 KT strategies were coded and generated within the 61 consolidated KTS related thematic sub-categories. Referring to Table 7.3, the degree and sum of code frequency against the seven dimensions of KT strategies across six academic years and two interviewees’ perspectives were horizontally generated for the case of LU with the ‘implementation strategy’ denoting the highest code frequency (i.e.,

98) while the ‘protecting strategy’ denotes the lowest (i.e., 0). In contrast, the degree and sum of code frequency against the seven dimensions of KT strategies over each academic year were vertically generated with ‘2014/15’ denoting the highest code frequency (i.e., 43) while ‘2012/13’ denotes the lowest (i.e., 12), in which interviewees’ perspectives would be excluded from this time series comparison.

In brief, with the broad dimension of the formulated KT strategies in LU, the frequency order from the highest to the lowest code frequency over the academic years and against each academic year were indicated by the sequence order of “1” denoting the highest while “7” denoting as the lowest. Table 7.3 was constructed for an overview of KT strategy formulation and development in each academic year and over the years, while the frequency ranking did not necessarily imply a sequence of importance for the KT strategies formulated in LU. It would be more likely a matter of stages of KT development in LU, whereas, the dimensions of KT strategies with higher code frequency manifesting the prime foci and strategic directions of the units who were responsible for the implementation of KT and/or coordination of KT reports, particularly for a specific point of development. The responsible units were the Asia-Pacific Institute of Ageing Studies (APIAS) started from 2009-10 to 2011-12, the Office of Service Learning (OSL) for 2012-13 only, and the ORS from 2013-14 to 2014-15. For the aggregated code frequency of each dimension derived from the management and administrative side of the interviewees, it can be interpreted as a general perspective from the interviewees whereby the level of code frequency amongst the seven dimensions may reflect personal experiences and understandings of KT and its process of implementation. The backgrounds of the persons-in-charge, who were belonging to APIAS, OSL and ORS, might also be influenced by the vision-mission of their affiliated units in the formulation and implementation of KT strategies as well.

Table 7.3

Overview of KT Strategy Formulation and Development in Each Academic Year and over the Years in Frequency Ranking in LU

	Academic Year	6-year	14/15	13/14	11/12	09/10	10/11	12/13
Dimensions of KT Strategy	Sum for Each Year*	<u>178</u>	43	33	33	32	25	12
	Sum over the Years**	Frequency Ranking (Code Frequency)						
Implementation	98	1	1 (17)	1 (14)	2 (8)	1 (19)	1 (12)	1 (10)
Engagement	41	2	2 (12)	2 (11)	3 (5)	4 (0)	4 (1)	3 (0)
Formulation	40	3	6 (1)	5 (1)	1 (16)	2 (10)	2 (8)	3 (0)
Capacity Building	18	4	5 (2)	4 (2)	4 (3)	3 (3)	3 (4)	2 (1)
Enabling Environment	15	5	3 (6)	4 (2)	5 (0)	4 (0)	5 (0)	2 (1)
Dissemination	9	6	4 (5)	3 (3)	5 (0)	4 (0)	5 (0)	3 (0)
Protecting	0	7	7 (0)	6 (0)	5 (0)	4 (0)	5 (0)	3 (0)
	<u>221</u>							

The single * represents an exclusive sum of interviewees' perspectives while the double ** represents an inclusive of interviewees' perspectives.

To complement descriptive and qualitative manifestations of Table 7.3, I summarised the strategic foci of KT development in LU from a total of six Annual KT Reports from 2009-10 to 2014-15, prepared by APIAS, OSL, and ORS in respective years, to demonstrate the formulated KT strategies in LU for a given period of the case study. Nevertheless, the list of KT strategic focus was arranged from the highest code frequency ranking to the lowest as in terms of the dimensional KT strategies (1st tier of KTS) embedded with the strategic directions of LU. Typical examples of the embedded thematic sub-category of KT strategies (e.g., 2nd tier of KTS) of which those with a code frequency of its own average of 5 and above (cross reference to Appendix 8.1 and 8.2 of Chapter 8 for details) were included with illustrations (LU, 2010 to 2015).

The dimensional and thematic KT strategies illustrated with examples included:

1. Implementation

a. Impact strategy

e.g., the outcomes of KT for informing policies in different areas are important, particularly in the proven policy areas of strengths such as economics, elderly care, arts and culture in LU.

b. Collaboration strategy

e.g., The Hong Kong Institute of Business Studies, with KT funding support, attempted to establish and consolidate collaborative relationships with the industries and the professions so as to transfer findings from research and managerial

implications to the business sector.

- c. Thematic strategy
e.g., APIAS emphasised the adoption of thematic-based knowledge, such as “Ageing from a Life Course Perspective”, in association with the social context for KT programme implementation.
 - d. Service-Learning strategy
e.g., academic and research related S-L is regarded as one of the core strategies for KT in echoing Lingnan’s long-standing motto of “Education for Service” in the Higher Education sector.
 - e. Applied research strategy
e.g., ORS attempted to proactively promote linking between KT and research from which the outputs and expert knowledge could benefited the community and/or the industry directly by enhancing quality of life or professional knowledge beyond the campus.
 - f. Engagement in local community strategy
e.g., KT became one of the strategies to engage students and academia in the local community for outspreading relevant knowledge and research findings to the concerned community.
 - g. Partnership strategy
e.g., it is essential to build up a strong partnership base in supporting KT through the establishment and expansion of new platforms for identifying new opportunities and exploring resources.
 - h. Non-technology Strategy
e.g., the functional value of applying non-technology knowledge derives from the arts, humanities, and social sciences disciplines in KT are intangible and unquantified but can induce certain impacts.
 - i. Interaction strategy
e.g., service learning is an effective interactive process for KT amongst students, faculties, and community partners facilitating for learning and generating synergies for social impacts and innovations.
 - j. Community education KT strategy
e.g., seminars, short courses, and drama could be regarded as the platform for community education to narrow the knowledge gaps between the better and less educated.
2. Engagement
 - a. Engagement strategy
e.g., to engage faculties in supporting and participating in KT through outreaching tactics and the establishment of a KT Project Fund.
 - b. Fiscal or resources strategy

e.g., LU introduced a KT Project Fund in 2014/15 for supporting academic staff's KT initiatives, in terms of monetary award, through a competitive process to engage KT participation.

- c. External engagement strategy
e.g., engagement externally in various forms of advisory committees and/or statutory bodies by academic staff is an effective strategy to inform policies through individual expertise and professional knowledge.
3. Formulation
 - a. Theoretical-based strategy
e.g., APIAS has responsible to implement KT in the first triennium of KT recurrent funding that it attempted to develop Lingnan's KT model with reference from some theoretical frameworks, like developmental and life course perspectives, for the implementation of KT projects under theoretical-based knowledge guidance.
 - b. KT model building strategy
e.g., the Community Education Approach, the Service-Learning approach, and the theoretical guidance framework, for instance, become the guiding principles and operative frameworks for the construction of LU's own Knowledge Transfer Model over the years.
 - c. Progressive development strategy
e.g., to broaden and deepen the spectrum of KT, from academic to community and from one-off to sustainable, the progressive development strategy has been adopted for significant evolvement and growth of the University in KT.
 - d. Mission-vision driven strategy
e.g., the mission-vision of LU embeds in the unique liberal arts institution has driven the direction of KT implementation associating with its originality of fostering social care and responsibility through serving the community and the needy.
4. Capacity Building
 - a. Capacity building strategy
e.g., seminars, outreach visits to Faculty and Department Heads, best practices, and measurement on KT were conducted as a series of proactive promotion and training for the implementation of KT in LU by the designated ORS for the purposes of capacity building amongst academic staff in campus.
 - b. Train-the-trainer Strategy
e.g., the train-the-trainer strategy of KT was adopted over the years through LU's students and/or senior students from the Elder Academy as the 2nd tier of trainers to train up secondary students with thematic knowledge, such as health knowledge, so that they could provide training related services to the community.
5. Enabling Environment
 - g. Institutionalisation strategy
e.g., Commencing from 2014/15, Service-Learning was institutionalised as one of the graduation requirements for all LU students that each would be required to

conduct at least one S-L project serving as a KT agent between the University and community through service and knowledge delivery.

h. Organisation structure establishment

e.g., LU has designated ORS under the Vice-President and URC, commencing from 2013-14, responsible for promoting KT and coordinating KT reports by engaging academic staff's planning for and participation in KT in a wide spectrum of projects and activities.

6. Dissemination

f. Accessibility strategy

e.g., the 4-week LU Arts Festival was organised on an annual basis enclosed with a series of art events in different forms, such as artists' workshops and seminars, artist-in-residence, film screenings, and concerts, facilitating public and professional accessibility through its outreach and image building dissemination approach.

7. Protecting

In respect of the sum of frequency denoted zero over the years for this protecting strategy, notwithstanding that one of the replication logic and principles for this multiple-case study method was to include all dimensions of KT strategy with example illustrations as far as possible. The logic and principle aim to have comprehensive coverage for illustrating the development of KT strategies in LU and comparative analysis amongst the three cases as well. Nevertheless, it seems that the protecting strategy always associated with patent and commercialisation strategy. These strategies are most likely be inclined to the areas of technology transfer while LU did not have technology-related academic subjects and hard-pure or hard-applied disciplines. Besides, M3 defined that 'all knowledge outputs from the university should be transferred to and applied by the community rather than consumed within the university so as to directly benefitting the formulation of social development policies as well as some kinds of professional development' [anticipations]. These may be the reasons behind the lack of emphasis on the protecting and its associated strategies over the years of KT development in LU, amid the intellectual property right of respective created knowledge may probably be claimed in normal practices.

To summarise, the overall development of KT and the adopted and implemented strategies seem to be fall into a disperse pattern of development. Among the 6-year period of KT funding, a total of 3 units within the University have been involved to coordinate, operate and/or implement KT as well as to take up the role of preparing KT annual funding report submitted to UGC. From the beginning of the earmarked KT funding in 2009-10 to 2011-12, APIAS, as an ageing research centre, has taken up the role to operate the KT funding as well as to implement KT based on their expertise and strengths. Hence, the KT strategies adopted and implemented in the early years of KT recurrent funding period were emphasised on KT

implementation and formulation strategy, in particular of thematic-based knowledge (e.g., KT on “health and ageing from a life course perspective”) and Lingnan’s KT model building respectively.

In 2012-13, the role was transited to OSL, who is specialised in and responsible for the development and implementation of Service-Learning Model in Lingnan; its KT strategy focused on the application of S-L as a two-way means of KT between the University and the community, of which it was more of an implementation strategy in broad principle.

After one year of KT coordination/operation, the role was then transited to ORS, the executive and administrative arm of the University Research Committee and directly under the leadership of Vice-President of the University. In respect of its natural position at the University-led level, the KT engagement strategy through incentives (e.g., KT Project Fund and KT performance recognition) and other engagement strategies (e.g., community, staff and student, and leadership engagement) was adopted and implemented accordingly. Its aim: to encourage more academics and researchers from different Faculties and units participating in KT to serve and impact the community at large.

Therefore, it was observed that the pattern of KT development and the application of KT strategies in LU were transited from individual unit perspectives based on University-wide perspectives, whereas, it has been transformed from specialised KT development (e.g., KT through S-L model) to institutionalised KT development (i.e., from bottom-up KT implementation approach to top-down KT coordination approach).

In addition to Table 7.3, an extended format of the dimensions of the formulated KT strategies of LU by sub-category and code frequency was created and set out in Appendix 8.2 as cross reference. A total of 42 KT strategies were coded and generated within the 61 consolidated KTS related thematic sub-categories while 19 KTS have any relevant coded segments derived from the collected data. Out of a sum of 221 coded segments, the sum of

code frequency against the 42 formulated KT strategies across six academic years and two interviewees' perspectives were horizontally generated for the case of LU with the 'KT model building strategy' denoting the highest code frequency (i.e., 22). A total of four KT strategies, namely as 'professionalization strategy, student engagement strategy, encourage strategy, and dissemination strategy' were denoted the lowest (i.e., 1). However, the frequency ranking does not necessarily imply a sequence of importance for the KT strategies formulated in LU. It, indeed, reflects a priority-to-implementation needs basis of KTS development in LU.

7.2.1.1.8 What to be transferred in LU. Under the Descriptive Framework, data immersed in the 6W-elements of the 'formulation of KT strategy' refers to 'what to be transferred' in LU both at the policy/institutional and implementation level. In general, the 'what-element' referring to the KT areas, such as technology (e.g., scientific innovation) and non-technology areas (e.g., public policy, ageing, cultural heritage and arts), to be transferred while students participate in S-L projects and apply subject knowledge in various disciplines, art inclusion and showcase different abilities of disabled artists, and 10-year ageing policy framework for Macao (LU, 2015b) are specific areas of explicit and/or tacit knowledge. Those knowledge were more likely transferred during the process of service-learning, project operation, interaction and/or collaboration at the implementation level. In contrast, some of the 'what-element' referring to the KT areas, such as proposition (e.g., funding application criteria) or procedure (e.g., application procedure in relation to KT engagement) areas, to be transferred while criterion-based assessment of the competitive KT Project Fund, promotion guidelines in terms of KT with research impact, and Course Instructor's Guide to S-L (LU, 2015b; OSL/LU, 2016c) are specific areas of policy-based and/or technical-based knowledge. Those knowledges were more likely transferred during the process of policy or procedural introduction and implementation at the policy/institutional level. By reviewing and scrutinising the consolidated details in Appendix 7.3, I have drawn Figure 7.2 with a few

typical examples for conceptualising and summarising ‘what to be transferred’ in LU over the KT reporting years of KT strategy formulation and implementation.

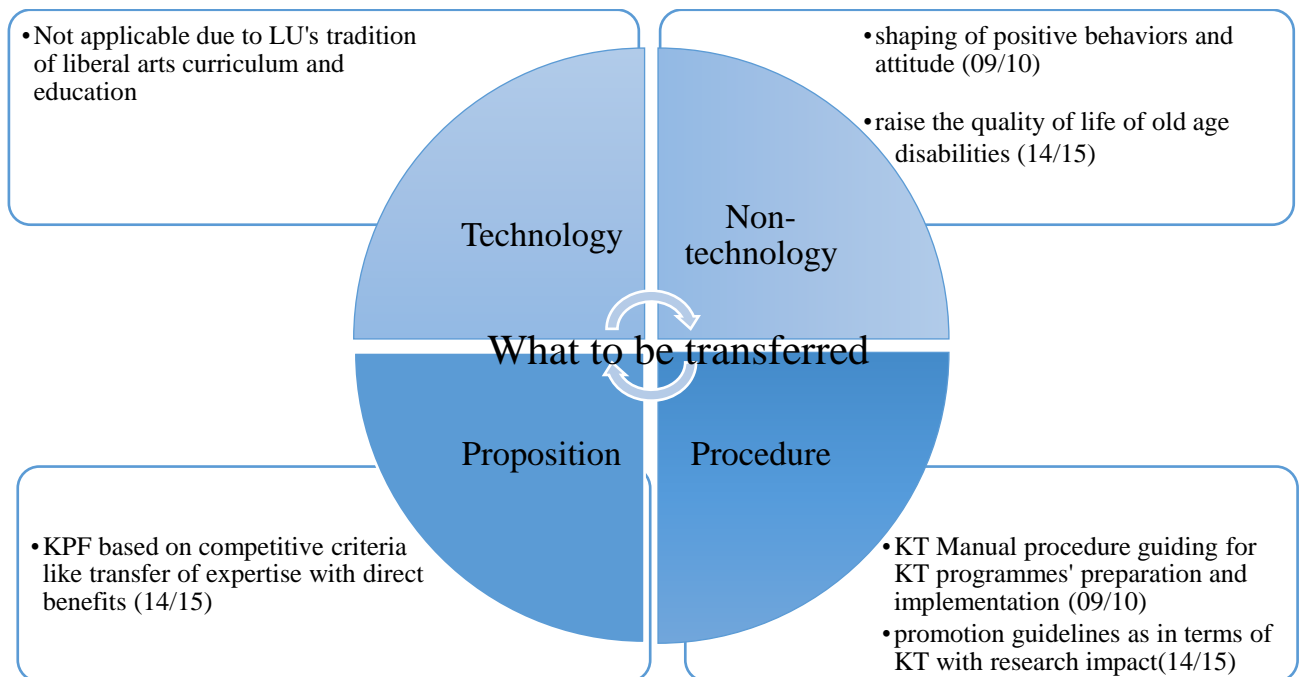


Figure 7.2. Conceptualised Examples of ‘What to be Transferred’ in LU (LU, KT Reports 2010 and 2015).

7.2.2 Implemented KT--what LU did, how, and outcomes

7.2.2.1 Dissemination of knowledge transfer strategy (in what ways). Revisiting Q2 of “how have the institutions disseminated and implemented the KT strategies?” this could be aligned with the ways adopted by the institution to disseminate the formulated KT strategies (e.g., impact strategy and accessibility strategy) and the key stakeholders (i.e., to/with whom and by whom) involved during the implementation process. Under the Descriptive Framework, data immersed in this 6W-elements section of ‘dissemination of KT strategy’ referring to ‘in what ways’ the strategies in LU were disseminated.

Under the circumstantial development of KT and strategy formulation and implementation in LU, it has gone through a transition process from an individual unit perspective based to University-wide perspective based, particularly over the 6-year KT funding period as set out in Figure 7.3. In its first four years of KT development, APIAS and then OSL were designated to implement KT of which they have aligned KT strategies based on their specialisation (e.g., ageing and health as thematic knowledge or networking strategy) and specific targets (e.g., university students, elder and community stakeholders).

M3 mentioned that ‘APIAS and OSL as the units responsible for KT and submitting KT reports have seldom made contacts and collaborations with other research centres in LU’ (Summary of M3’s transcript, 2015). In regard of disseminating and implementing LU’s KT strategies, M3 emphasised that ‘both units are practical and users’ needs oriented (e.g., impact strategy), whereas, APIAS focuses more on collaborating projects with non-governmental social welfare organisations (e.g., collaboration/partnership strategy) with social welfare and elderly related emphases. OSL, in contrast, attempts to apply and transfer knowledge through the process of student service learning in the community (e.g., S-L strategy)’ (Summary of M3’s transcript, 2015). In addition, A4 quoted an example that ‘academics and/or students of the Faculty of Business seeking to transfer knowledge of good practice in accounting serving

as reference to organisations in raising professional standards, in which networking and partnership participation was in place to realise collaboration between university and industry’ (A4, August 2015) [outcomes].

These have illustrated that both units put more emphasis on implementation strategy, such as collaboration, impact, and partnership, disseminating through thematic knowledge and S-L projects (please refer to more examples in Appendix 7.3). Their ways of KT were indeed disseminated through different implementation strategies aligning with their own areas of strengths and specialisation as well as their specific perspectives on KT.

After four years of KT development by APIAS and then OSL, the following two years of KT development were under the purview of Vice-President and the ORS, of whom, are the executive and administrative arm of the University Research Committee and directly under the leadership of Vice-President of the University. In fact, the roles and functions of the ORS could provide central coordination and help to establish platforms, formulate initiatives and strategies facilitating for engaging KT participation and capturing KT activity implementation and achievements by the academic units and their staff (LU, 2014). Since the financial year of 2013-14, the shifting of KT responsibility to ORS represents a shift of individual unit perspective based on University-wide perspectives based of KT development. Subsequently, the KT strategies were also transforming from implementation strategy oriented by individual perspective to engagement strategy priority for a university-wide endeavour of KT implementation. As stated in the KT report that “KT is taken exactly to engage both the faculty and students in extending their knowledge and research outcomes from the campus to what is of social relevance and concern” (LU, 2014, p. 1). This engagement strategy was also disseminated through the centralised role of ORS within LU’s KT framework by coordinating KT project proposals through funding support and compiling KT project achievements through the categorisation of implemented KT activities. A3 stressed that ‘the co-ordination

and compilation exercises are in fact implementing the KT engagement strategy and co-ordination strategy through incentive funding support and categorisation of KT activities respectively' (Summary of A3's transcript, 2015) [processes]. A4's message also echoed that 'some essential and decisive factors for engaging staff and students to participate in KT was that the KT Project Fund can be regarded as some kinds of encouragement and recognition' (Summary of A4's transcript, 2015) [outcomes].

Apart from engagement of academia in KT, the impact strategy through research and KT was further emphasised and disseminated through the launching of KT Project Fund and the updates of promotion guidelines in 2014-15 (LU, 2015b). The KPF is allocated by some assessment criteria of which, research impact is a priority under the competitive principle. The KT report stated that KPF "applicants have to submit proposals for projects through which their expertise and/or research outcomes will be extended to the direct benefits of the community or industry" (LU, 2015b, p. 2). Besides, "research impact through KT is also stated among the terms of reference in the latest guidelines for promotion and substantiation of certain academic ranks" (LU, 2015b, p. 1), also illustrated the important message of creating impacts to the community.

With the enhanced university structure for KT and its institutionalising process, the message of University-wide endeavour in KT across all units and centres were obvious (LU, 2015b). Apart from the enhanced structure, its roles and functions in campus, the newly revised vision and mission from 2013/14 onwards have also embedded with obvious, relevant and unique messages of KT strategies in LU. These messages were disseminated through different channels, such as the KT staff, KT responsible units, ORS, designated website, KT Annual Reports, Research and Impact Newsletters, intranet, e-publications (e.g., annual reports), and the process of KT strategy implementation as well. To illustrate 'in what ways' adopted by LU for disseminating the formulated KT strategies, I consolidated some specific

message examples of the disseminated KT strategies associated with possible channels of dissemination, whereby details are set out in Appendix 7.4.

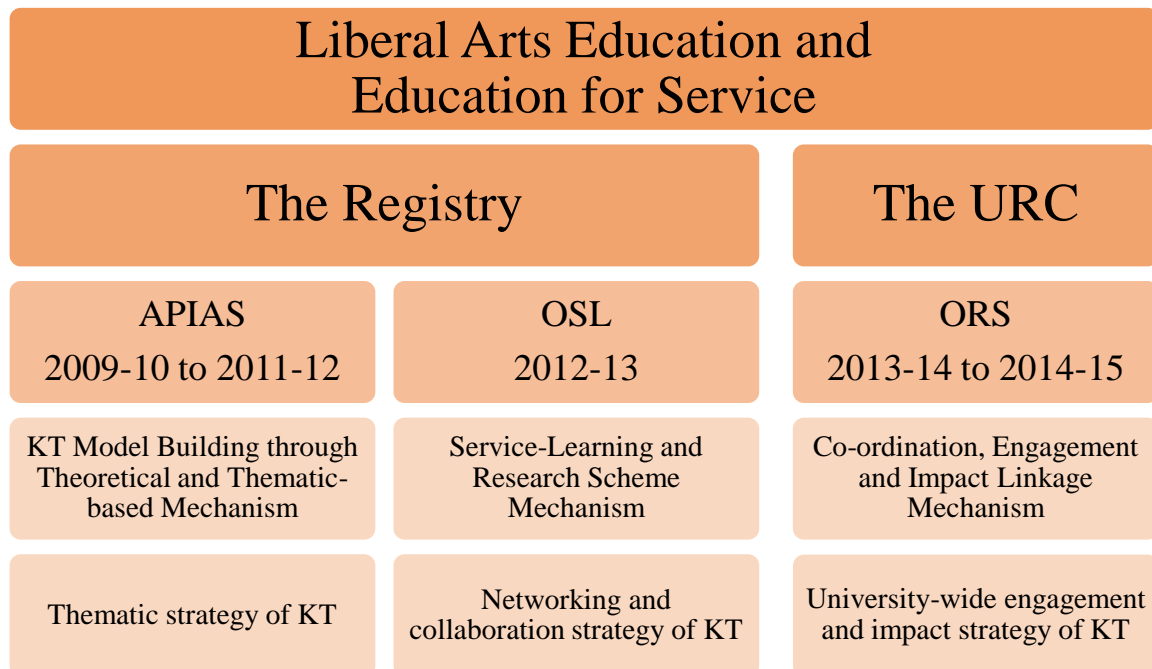


Figure 7.3. Management and Implementation Function of the Coordinating Units in KT Strategy Dissemination.

Sources : KT Report 2013-14 and Website of ORS, LU
 Key : RC - The University Research Committee of Lingnan University
 APIAS - Asia-Pacific Institute of Ageing Studies
 OSL - Office of Service Learning
 ORS - Office of Research Support

Prior to presenting the disseminated message of KT strategies, I need to emphasise that the transitional stage of KT development in LU was quite distinctive amongst the other two HEI cases experienced through a shift of KT implementation and/or coordination role amongst three units of LU. The shift in KT responsibilities was developed in a dispersed pattern of decentralised KT implementation towards centralised KT coordination. As such, each stage has its uniqueness of and emphases on KT strategies disseminated through different mechanisms. For APIAS, it has focused to implement KT programmes with the thematic knowledge of “health and ageing from a life course perspective” as the themes and theoretical framework facilitating for the strategy of KT Model building (LU, 2010, p. 20). When KT came under OSL’s purview, S-L and an applied research strategy became its focus to engage academia and students to apply knowledge for serving and contributing to the community in needs through collaboration projects (LU, 2013). After the ORS was in place through enhanced leadership and structure for KT, its co-ordination, engagement and impact linkage mechanism had become a centralised function. With a University-wide endeavour principle, ORS attempted for engaging academic and teaching staff participation in KT to serve the community with impacts through the expertise and applied research knowledge (LU, 2014). Notwithstanding that each stage has disseminated with different emphases of KT strategies, there seem to have a common goal of applied knowledge contribution to the needy community through the engaged students and/or academic staff. LU’s emphasis of liberal arts education and its motto of ‘education for service’ seem to become the underpinning guides and driving forces shaping the overall direction and development of KT in LU.

In Appendix 7.4, the quoted examples of the disseminated message of the KT strategy are not exhaustive while the same message could disseminate more than one strategy that I normally would cite one example only for the sake of simplicity. A brief introduction of

‘how’/in what ways LU did to disseminate the planned KT strategies is appended below while more details can be referred to in Appendix 7.4.

Ways of disseminating with KT strategy examples included:

1. KT staff

e.g., “ORS always emphasises the linkage of research impacts to KT” (A4, August 2015) disseminated the importance of KT impact strategy through applied research.

2. KT Website

e.g., “encouraging faculty and students to contribute to society through original research and KT” (LU, 2016b) disseminated applied research strategy through KT.

3. KT Publications

e.g., “to fuel faculty members’ enthusiasm for taking their research output and expertise beyond publications, LU has established KPF...supports KT initiatives” (LU, 2016, April) disseminated the engagement with impact strategy.

4. Multi-media

e.g., production of video to introduce Service-Learning in OSL (OSL/LU, 2016d) disseminated community engagement through S-L strategy.

5. 6W-element of ‘in what ways’ of the ‘dissemination of KT strategy’

e.g., making arts in various forms that could widely accessible to professionals and the general public disseminated accessibility strategy (LU, 2015b).

7.2.2.2 Implementation of knowledge transfer strategy (to/with whom and by whom). The former part has revisited the ways adopted by the institution to disseminate the formulated KT strategies while this section presents the key stakeholders (i.e., to/with whom and by whom) involved during the implementation process of KT strategies. Of the same principle under the Descriptive Framework, relevant data were immersed in this 6W-elements section of ‘implementation of KT strategy’ referring as ‘to/with whom and by whom’ the strategies in LU were implemented. During the 6-year KT development, the vision, mission and motto of LU, the responsible units for KT implementation/co-ordination, the strengths and orientations of the KT responsible units, the decentralised bottom-up implementation and the centralised top-down co-ordination approach on KT have been manifested with different foci of KT strategies either at the individual unit or the University level. Irrespective of which level, the coordinating units have served with management and implementation functions in

KT strategy dissemination. Figure 7.4 is constructed and presented with an overall KT strategy-to-be disseminated through the KT responsible units and their specific KT mechanisms over different stages of development. These were more of KT model building-, thematic knowledge-, service learning-, networking and collaboration-, university-wide engagement-, and impact-oriented.

Normally, the key stakeholder function in KT strategy implementation were more likely inclined to operation-oriented with emphases on impact through applied research and professional knowledge, partnership, collaboration, networking, and procedure establishment. Notwithstanding that these situations seem to apply to LU's case at the implementation level, it was also applied to the key stakeholder function in KT strategy formulation. For example, M3 stressed that 'the purpose of KT...should be transferred to and applied by the community rather than consumed within the university...benefitting social development policies...and professional development' (Summary of M3's interview transcript) [anticipations]. Moreover, the mission of encouraging society contribution through research and KT, the traditional emphasis on "education for service", and the universal mode of KT through S-L become a clear directive for the key stakeholders to focus on the formulation and implementation of operation-oriented KT strategies (i.e., micro level) instead of facilitation- and enhancement-oriented (i.e., meso to macro level). These kinds of orientations were more likely inclined to enabling-, engagement-, capacity building- and dissemination-oriented strategies. In fact, LU's intention to develop an operative KT model and manual as well as the adoption of the traditional S-L KT model were a manifestation of operative inclination within the process of KT development in LU, particularly in the first four years of bottom-up implementation mode of operation/coordination. It was until the transformation from a decentralised to centralised mode of operation/coordination, the KT strategy orientation was changing in striking a balance between meso-macro and micro level of development. For example, the KPF

initiative was introduced in 2014 with an aim to encourage the delivery of benefits from staff expertise and research outcomes through KT to the community as well as strategic to engage staff participation in KT through funding incentives. Figure 7.4 was created to visualise an overview of the key stakeholder function in KT strategy implementation while specific examples of internal (by whom) and external/internal (to/with whom) KT key stakeholders were illustrated in Appendix 7.5 as supplementary information to the schematic diagram in Figure 7.4.

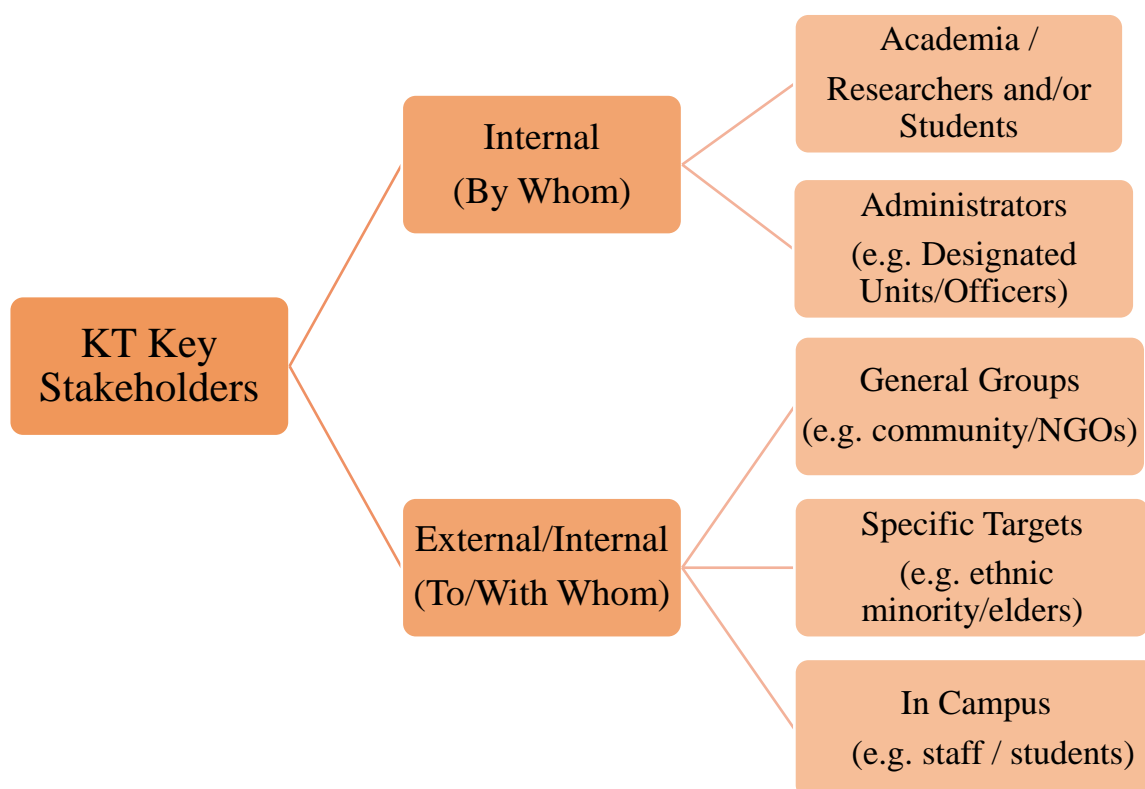


Figure 7.4. Key Stakeholder Function in KT Strategy Implementation.

To answer one of the research questions of “how has LU implemented the KT strategies?”, the schematic diagram in Figure 7.4 and specific examples in Appendix 7.5 for KT strategy implementation have already illustrated with whom at different levels (e.g., academia and students at the operation/community level; coordinate units and/or

administrators at operation/management/institutional level) would be responsible for the strategy implementation. Essentially, LU has implemented different foci of KT strategies as according to the positioning, uniqueness and strengths of the coordinate units over the years of KT development. Major milestones of KT development in LU were constructed in Figure 7.5 to facilitate interpretation of those relevant KT strategies formulated and implemented over at least 6-years of KT development in the chapter of analysis.

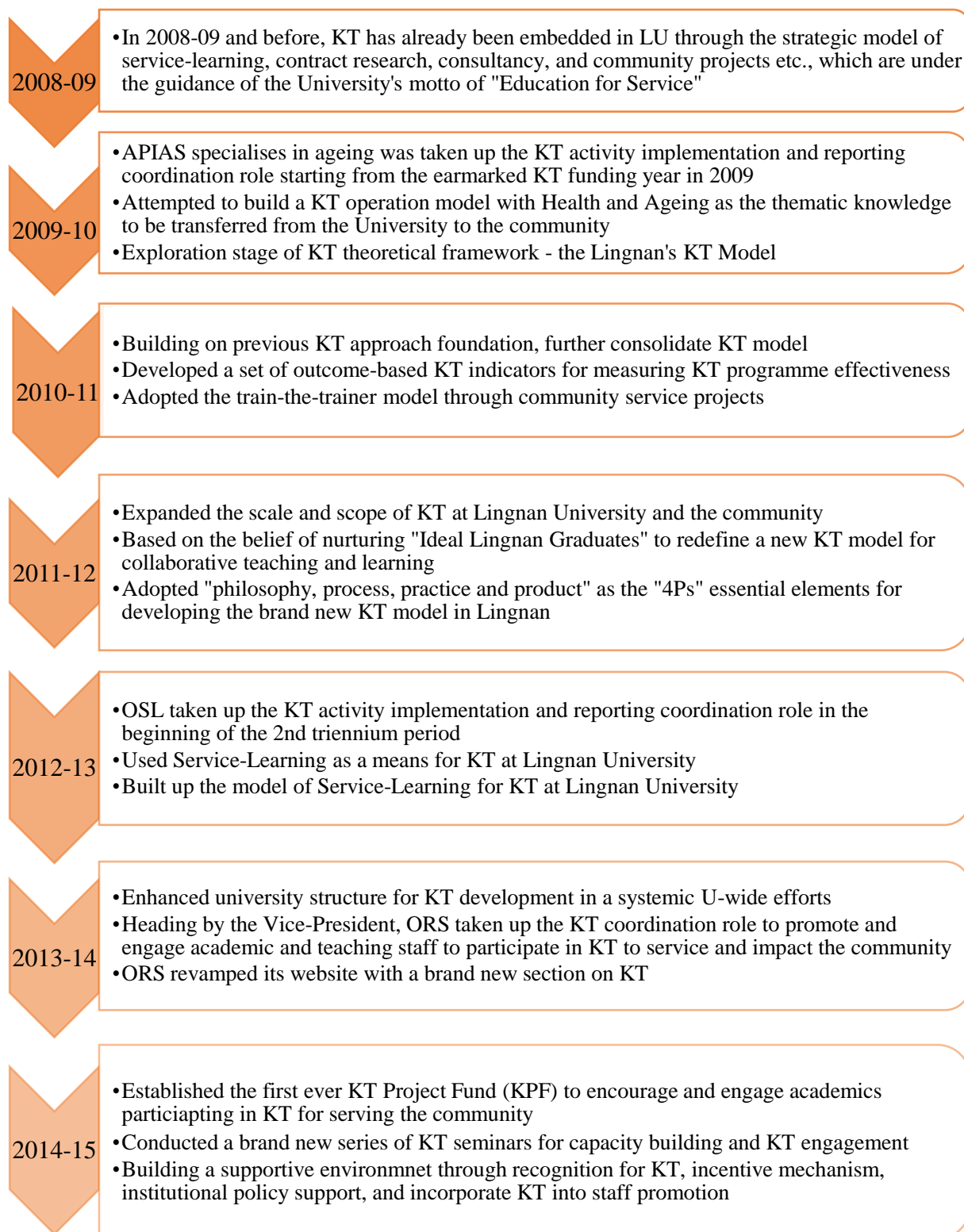


Figure 7.5. Major Milestones of KT Development from 2008/09 to 2014/15 in LU.
 Sources: LU's KT Annual Reports 2009/10 to 2014/15.

7.2.2.3 Evaluation of knowledge transfer strategy (with what effect). Lastly, the 6W-elements of ‘with what effect’ of which it involved an overall evaluation of KT strategies formulated, disseminated and implemented by LU, particularly over 6-years of KT development. Evaluation questions of ‘how the adopted KT strategies would be commented?’, ‘what were the strengths and weaknesses of the adopted KT strategies?’, ‘how the adopted KT strategies could be improved?’, and ‘what kinds of foreseeable effects’ were associated with the impacts of KT as in terms of the last ‘W’ of the 6W-elements of the Heuristic Approach. To answer those questions, I retrieved data evidences from respective thematic summaries of the interview transcripts, supplemented with data from the case-institution’s relevant documents. Moreover, I further extracted some exemplars of ‘what kinds of foreseeable effects’ derived from the formulated and implemented KT strategies and their associated KT projects/activities from Appendix 7.3 into Figure 7.6 so as to create a visualising effect of KT impacts at LU.

Key of KT Strategy

KTIS : KT impact

AS : Accessibility

PS : Partnership

S-LS : Service-learning

TS : Thematic

FRS : Fiscal/resources

ES : Engagement

KTM : KT model building

TTS : Train-the-trainer

Colour Key for the Dimension
of KT Strategy

Green: Enabling environment

Yellow: KT engagement

Gold: Implementation

Orange: Capacity building

Light blue: Dissemination

Blue: Formulation

Light green: Protecting

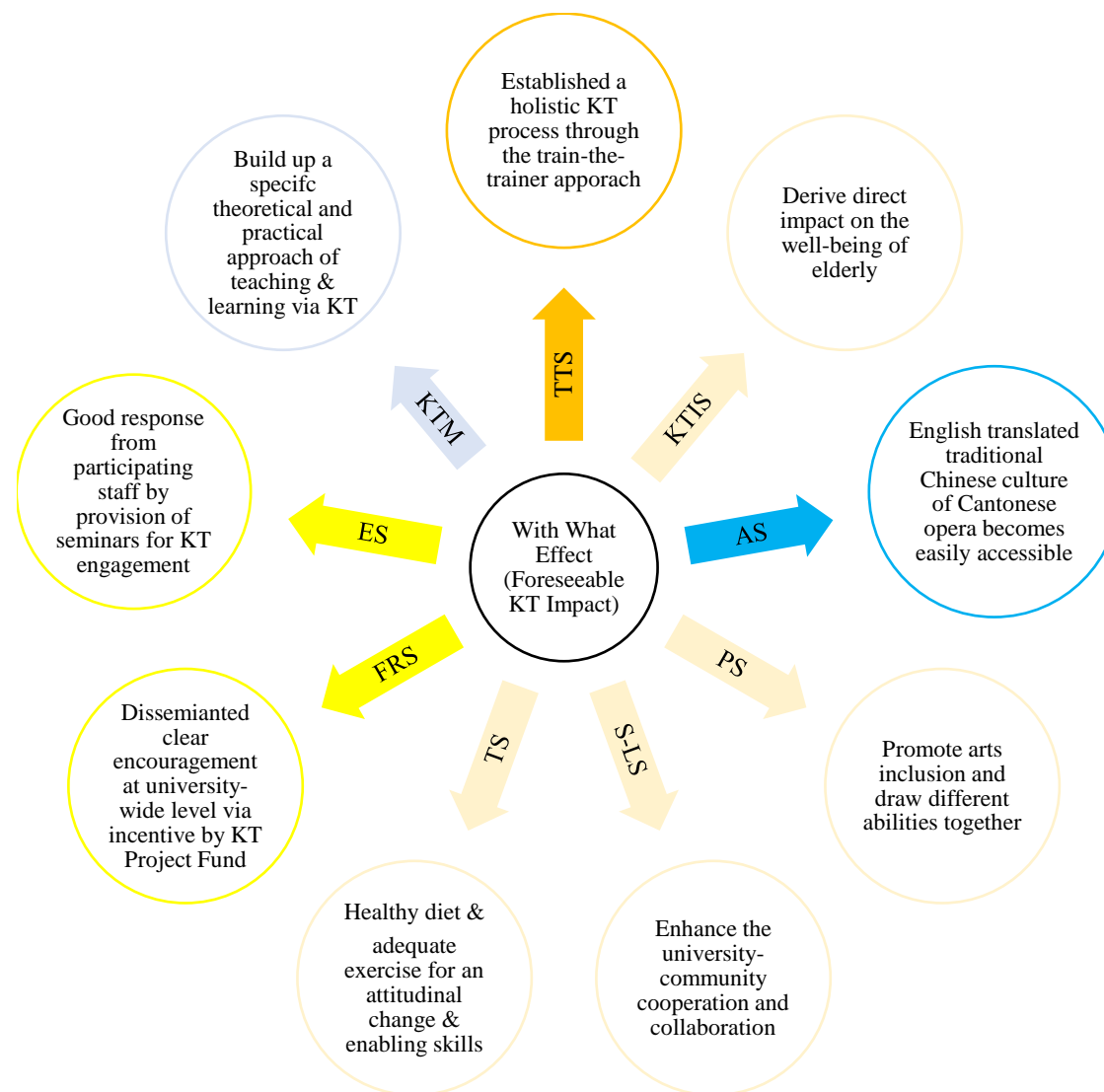


Figure 7.6. Exemplars of 'What Kinds of Foreseeable Effects' Derived from the Formulated and Implemented KT Strategies in LU.
Sources: LU's KT Reports 2009/10 to 2014/15.



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7.2.3 Management and administration perspective on knowledge transfer

strategies. In addition to the 6W-elements, the thematic summaries under the first MTC were derived from the three LU's interview transcripts. The interviewees' perspectives, who represented the management and administration side, were consolidated with specific examples of the KTS dimensions and thematic sub-categories for thematic-based presentation and comparison among the three perspectives within LU's context (Table 7.4). These were then tabulated in Table 7.5 for visualising a comparison of the management and administration perspective on KT strategy.

Table 7.4

Comparative Table for Thematic-based Analysis of the Thematic Summaries under the First MTC of LU's Interviewees

First MTC: Main thematic categories of the planned and adopted knowledge transfer strategies		
LU		
Interviewee	Thematic Summary	KTS Dimension (Thematic sub-category)
M3	Practical and users' needs oriented. Attempts to apply and transfer knowledge.	Implementation strategy (Applied research)
A3	Conduction of community based research by students and teachers through SLRS	
A4	Contributions through LU's outstanding research knowledge	
A3	Multi-roles in KT of which it can have impacts on community policies	Implementation strategy (KT impact)
A4	Emphasises the linkage of research impacts to knowledge transfer	
A3	Collaborate with other research centres in Lingnan as working partners in some KT community projects	Implementation strategy (Partnership)
A4	Different community projects were created through partnership and knowledge transformation	
M3	APIAS and OSL would be regarded as the carriers ready for knowledge application within the community	Implementation strategy (Knowledge carrier)
M3	Staff performance appraisal so as to encourage and recognize the efforts of applying KT	KT Engagement strategy
A3	Service-Learning involves a natural strategy of student-teacher-community engagement in KT	
A4	Resources and funding support is one of the strategies to promote, encourage and support staff participation in KT	
M3	Core positioning is relating to close contact with the community	KT Engagement strategy (in local community)
A3	Key community stakeholders should be reached and engaged	
A4	Support from senior management, LU has established an institutional structure to support KT	KT Engagement strategy (Leadership engagement)
M3	Assigning an existing unit responsible for the KT- related work, in shift by three different units	Enabling environment KT strategy (Institutionalisation)
A4	LU adopts a balance development strategy in KT	Formulation strategy (KT model building)
A4	Another way of KT is implementing through the train the trainer programmes	Capacity building strategy (Train-the-trainer)
A4	Having the correct understanding of KT is first and foremost strategy for the promotion and implementation of KT in the context of institution and society	Capacity building strategy

Source: Interview Transcripts of LU, August 2015.

Table 7.5

Visualising Comparison of the Management and Administration Perspective on Dimensional KT Strategy in LU

Dimensions of KT Strategy	Sum of Interviewees	Management Perspective (M3)	Administration Perspective (A3)	Administration Perspective (A4)
Implementation	18	3	10	5
Engagement	12	4	2	6
Enabling Environment	6	2	0	4
Formulation	4	0	0	4
Capacity Building	3	0	0	3
Dissemination	0	0	0	0
Protecting	0	0	0	0
	43	9	12	22

Regarding the aggregated code frequency of each dimension derived from the management (M3) and administrative (A3 and A4) side of the interviewees (Table 7.5), three had different emphases. These were generally in terms of ranking of the dimensions notwithstanding that both M3 and A4 placed similar emphasis on KT strategies of ‘engagement’, ‘implementation’, and ‘enabling environment’ while A3 put ‘implementation’ as priority over the other two and A4 also placed ‘formulation’ and ‘capacity building’ on the list in addition to the first three priority. The similarities may be related to the traditional underlining vision and mission of community engagement and education for service while the contrasts may reflect personal experience and understanding of KT and its process of implementation, particularly relevant to their units’ strengths and positioning. Of similar priority (e.g., ranking of the dimensions) and emphasis of ‘engagement’, ‘implementation’, and ‘enabling environment’ between M3 and A4, both also had similar perspectives on the ways to operationalise the strategies. For staff engagement in KT, both stressed that incentives either through performance appraisal (M3) and resources/funding support (A4) are essential to encourage and engage staff participation in KT while A3 emphasised more on the S-L as a natural strategy to engage students, teachers and the community in KT. However, A4’s leadership engagement strategy by involving senior management in supporting KT was more inclined to the institutional level

while M3 and A3's emphasis of the engagement in the local community through close contact and outreach with the community was essential at the operation or academia level.

On the implementation strategy, their actualising perspectives were similar among the three interviewees even though A3's priority was different with the other two. They all emphasised and adopted the strategy of partnership, KT impact, and applied research so as to operationalise the implementation strategy, notwithstanding that their positioning and role may be different. For example, of the applied research strategy on KT, M3 had oriented the applied research with regard to the practical and users' needs in the community. A3 had oriented the applied research as in terms of community based research through SLRS. A4 had oriented the applied research by means of advocacy and encouragement toward the academic staff to contribute through their outstanding research knowledge. Both M3 and A4 agreed that institutionalisation either by assigning a responsible unit for KT-related work or establishing an institutional structure to facilitate KT development is an important strategy for the creation of an enabling environment for KT in LU.

Although all three likely had similar perspectives for the adoption of same/similar operational strategies in actualising the KT strategic dimensions with small differences against their roles and positioning, A4 had additionally put the strategies of 'formulation' and 'capacity building' into the ranking list. Commencing with the role and positioning of ORS as a centralised coordination unit at the University level, A4 mentioned that 'LU needs to adopt a balance development strategy in KT whereas three essential elements, namely commitment, institutional structure and participation by academic staff, are the most important elements in facilitating KT' [anticipations] as according to this model of KT development. Therefore, apart from engaging academic staff participation in KT through various incentive supports and establishing enabling environment, capacity building through train-the-trainer and staff training for KT understanding were also important strategies for the promotion and

implementation of KT in the context of institution and society.

Nevertheless, what I have cited examples from the thematic summary interpretively summarised and derived from the LU interviewees' coded segments of interview transcripts were non-exhaustive from the LU's management and/or administration perspectives on KT strategy formulation, dissemination and implementation.

The thematic summary of M3 was that 'LU has also adopted an institutional strategy by assigning an existing unit responsible for the KT-related work, amid the core responsibilities have been taken up in shift by three different units, namely APIAS, OSL and ORS, during the years. Despite the approach towards KT employed by APIAS and OSL at the initial stage is different, their core positioning of KT strategy is the same as relating to close contact with the community, whereas, both would regard them as the carriers ready for knowledge application within the community. Both are practical and users' needs oriented, whereas, APIAS focuses more on collaborating projects with non-governmental social welfare organisations with social welfare and elderly related emphases. OSL, in contrast, attempts to apply and transfer knowledge through the process of student service learning in the community.

Besides, other strategies are to incorporate KT into teaching, such as applying community-based research by the students, and staff performance appraisal so as to encourage and recognise the efforts of applying KT by the staff with the role of teaching and research.

Lastly, LU attempts to disseminate and implement their KT strategies through two major approaches. Both are regarded as the carriers ready for knowledge application within the community from which applied or community-related research becomes their essential set-up for transferring practical knowledge from university or their students to the community.

7.3 Case Conclusion

7.3.1 Mission-vision Driven Model. After a thorough investigation and analysis of

the planned and implemented KT strategies in LU guided by the systematic descriptive framework, the 6W-elements of the heuristic approach and the TQTAP, I observed that LU's KT development was closely associated with LU's mission-vision and its motto of "Education for service". Besides, the positioning, uniqueness and strengths of the coordinated units over the years of KT development were somehow underlined by each unit's mission and/or objective agenda on KT. Henceforth, the mission-vision of LU embedded in the unique liberal arts university has driven the general direction of KT implementation associated with its originality of fostering social care and responsibility through serving the community and the needy with positive social impacts. Meanwhile, the mission and/or objective agenda on KT of each coordinating unit has driven one's specific direction and adoption of interrelated strategies that LU's KT development was guided by a mission-vision driven model of development whereby different KT implementation models were either newly established or simultaneously adopted over the years of KT development. The Community Education approach, the Train-the-Trainer Model, the Service-Learning Model, and the Balance Development approach were adopted to engage academic staff and/or student participation in KT and to facilitate KT implementation (LU, 2010 - 2015).

In general, the motto of "education for service", the purposes of liberal arts education, the newly modified vision of "community engagement", and mission of "encouraging faculty and students to contribute to society through original research and KT" (LU, 2016b) are shedding light on the formulation of specific KT strategies for achieving the embedded purposes. Typical examples of KT strategies driven by the mission-vision and adopted by the respective coordinating units were the strategy of community engagement, S-L, collaboration with the community, and applied research. A3, in fact, mentioned that 'the tradition of community service has already been encapsulated in LU's motto of "Education for Service" so that S-L at Lingnan became a core element of KT' [outcomes]. Besides, the applied

research strategy was also driven by the mission of contribution through original research whereby linking KT to research facilitating for application by the community stakeholders as the common approach adopted by the coordinating units. M3, A3 and A4 separately emphasised the importance of applied research strategy by contributing to the community through addressing the needs of society and the practicability of research knowledge (interview transcripts of three LU's interviewees). In fact, common and past practice in KT through applied research would have inspiration on the advancement of mission-vision of the University and vice versa.

Specifically, APIAS is dedicated for ageing studies and research in gerontology that one of its missions is “committed to engage in deep collaboration in research, development and KT programmes with institutions and individuals...to co-developing and co-branding programmes in promoting social change and human betterment” (LU, 2015c). In addition to this mission, objectives of the KT initiatives coordinated by APIAS in the initial years of KT development were:

1. “to enable acquisition and application of thematic knowledge / generic skills”;
2. “to facilitate knowledge acquisition plus capacity enhancement through two-way communications”;
3. “to sustain the KT practice through services and/or research publications”; and
4. “to create a cross-disciplinary network within the community for facilitating on-going KT” (LU 2010).

Driven by these operative objectives, APIAS has adopted the formulation strategy of KT model building and theoretical-based KT strategy to build up “Lingnan’s model for KT programs” (LU, 2010) so as to sustain the KT practice. Based on the model, the thematic KT strategy of “health and ageing from a life course perspective” was selected as the thematic knowledge to be transferred through the implementation of KT programmes aligned with the

community education approach (LU, 2010, p. 20). In fact, APAIS intended to achieve the objective of “facilitating knowledge acquisition plus capacity enhancement through two-way communications” that “*community education approach is strategically appropriated as ‘carriers’ or ‘medium’ for KT in particular of relating to non-formal education for the ultimate goals of personal-community enhancement and development*” (LU, 2010, pp. 53-53).

OSL “*dedicates itself to nurturing change markers by encouraging students to engage in community service with academic knowledge through the experiential learning model*” while “*engaging academic institutions with the community in a balanced relationship*”, which is operationalised by the dedicated Service-Learning model and/or Service-Learning and Research Scheme (SLRS) in LU (OSL/LU, 2015b). A3 mentioned that S-L involves a natural strategy of student-teacher-community engagement in KT since the original rationale of S-L is teaching through community and learning through services. Thus, the KT strategy of community engagement, networking, collaboration, and interaction are involved under the process of S-L and driven by the needs to achieve the mission of OSL.

As transition to and under the centralised coordination role of ORS, its core functions are to “provide administrative support for research and KT activities” while assist reviewing and implementing research and KT policies for the university-wide spectrum (LU, 2016h). Designated with the coordinating responsibilities and core functions for research and KT, the ORS has attempted to adopt KT engagement strategy through various mechanisms, such as incentive, enhanced institutional structure, and encourage linking KT with research and social impacts, was also driven by its underlying KT mission of “*engaging both the faculty and students in extending their knowledge and research outcomes from the campus to what is of social relevance and concern*” (LU, 2014, p. 1). This embedded KT mission is, indeed, closely related to the mission and values embrace by the liberal arts education in LU (LU, 2014), not to mention the designated roles and responsibilities of the ORS for promoting and

engaging staff participation in the University-wide KT endeavours.

Other evidences in supporting the observed model were included:

1. Established different platforms, such as KPF, showcasing KT achievements, and extended mission-vision to highlight KT, facilitating for staff engagement and expansion of participating opportunities (LU, 2015).
2. Proactively outreach to the Faculties to promote and engage their support for and participation in KT (LU, 2014).
3. Highlighted the promotion guidelines of certain academic ranks for encouraging and engaging academia's contribution to society through KT with research impacts (LU, 2015).
4. Organised seminars for capacity building to enhance awareness of research impact through KT between the academia and community/industry (LU, 2015).
5. Reported achievements by strategic categorisation of KT endeavours into six major areas, such as revitalising heritage, advancing arts and culture for quality of life, raising professional standards, and touching through serving, for showcasing the university-wide KT participation to establish KT culture for easy engagement (LU, 2014).
6. Institutionalise KT through the development of strong faculty engagement in adopting KT elements into teaching and learning mode (LU, 2012).
7. Adapt KT from a humanity perspective to align with the values of Liberal Arts education of LU and implement through ageing and health as a strategy of thematic KT (LU, 2011).

Relevant and overall key KT strategies at different stages of KT development over the past 6-year in LU are summarised in Figure 7.7 for a brief and sequential illustration.

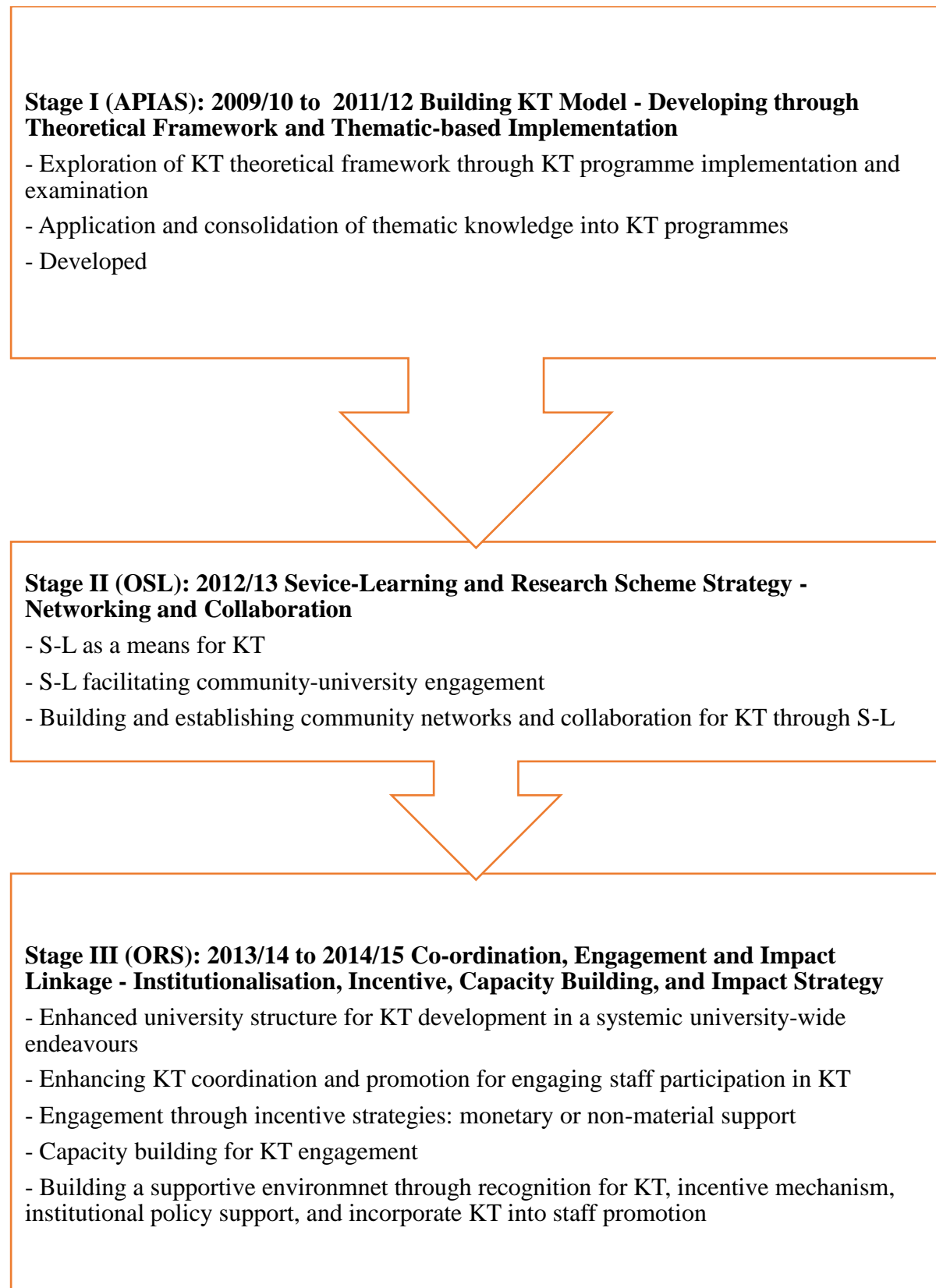


Figure 7.7. Relevant and Key KT Strategies at Different Stages of KT Development in LU
 Sources: LU KT Annual Report – 2009/10 to 2014/15

To sum up the case by quoting the ‘Evolving over the Triennium’ contained in the 2014-15 KT Annual Report of LU (LU, 2015b) as follows:

“The University has broadened its KT activities to a wider horizon by engaging and supporting members of all Faculties further in their KT initiatives, and recognizing such KT efforts as in consultancy, contract research and KT projects. The awareness is emerging among researchers who will consider now if KT can be built in from the design of their research and whether opportunities like consultancy can be generated therefrom. Meanwhile, S-L continues to thrive at LU and will become a graduation requirement for students from the 2016/17 intake on one hand. On the other hand, the KT Fund which is both a needed resource and moral support for our work that will continue to grow in the directions we have identified into the next triennium” (p. 11)



Chapter 8

Cross-case Analyses and Comparative Findings

8.1 Rationale for Cross-case Synthesis

To echo the potential shortcomings of comparative case study methodology and facilitate a quality analysis in a prominent method as well as robust findings, the technique of cross-case synthesis was employed to commensurate with the characteristics of multiple-case studies (Yin, 2014). The rationale behind the cross-case synthesis is “to draw cross-case conclusions” (p. 165) for establishing whether the aggregated findings across the cases can be concluded as contrasting or resembling cases at large through the tabulated case data associated with the thematic categories (Yin, 2014). In addition, the discernible dimensions for focusing, meaningful comparative and interpretative analysis (Adamson & Morris, 2007). Undeniably, I was required to address the limitations embedded in the process of cross-case analysis. According to Yin’s highlights of the “important caveat of cross-case synthesis” is subject to “argumentative interpretation” of the “word tables for cross-case patterns”, through which, credibility and reasonable arguments with data support are required (Yin, 2014, p.167). These were substantiated by the cohesive methods of data collection and analyses confirmed during the comparative case study research design. This is why I needed to adopt the strategy of multiple-analytic techniques complementary to the multiple-case studies and associated cross-case synthesis for eliminating possible setbacks derived from the caveats of multiple-case studies and cross-case synthesis simultaneously. Henceforth, I have addressed the research questions of RQ3 and RQ4 particularly in the following sections through the multiple-analytic techniques for cross-case analyses and comparative findings respectively.

8.2 Differences, Similarities and Individual Characteristics of KT Strategies amongst Three HEI Cases

As stipulated at the beginning of Chapter 3, the adoption of multiple-analytic techniques for quality assurance of this comparative case study research were deemed essential. Moreover, the adoption of data analysis strategies for logical linking of the research questions to the collected data and analyses in this chapter foreshadowed answering the subsequent research questions. They were related to the differences, similarities and individual characteristics of KT strategies (i.e., RQ3) and the notable differences between the process of strategy formulation, dissemination and implementation amongst the three HEIs (i.e., RQ4) respectively. The adopted analytical strategies (for details, please refer to ‘logical linking of RQs to the collected data’ and ‘criteria for finding interpretation’ in Chapter 4) became the guiding frameworks for organising and manipulating the collected case study data through:-

1. the derivation of tables, diagrams and/or figures with thematic categories and sub-categories from the thematic qualitative text analysis process for *cross-case synthesis* and thematic matrix interpretation; and
2. the reconstruction of the 6W-element of heuristic approach and tabulation for the discernible dimensions under Adamson and Morris’ framework for comparative and interpretative analysis.

8.3 Thematic-based Analysis – A Comparative Interpretation of Thematic Dimensions and Sub-categories of KTS among Three Cases

A total of 61 coded thematic sub-categories derived from the empirical data of the three cases were synchronised into seven dimensions and established with comparative and illustrative figures (e.g., Appendices 8.1 & 8.2). The dimensions and sub-categories denoted with different degrees of code frequency were interpreted for establishing ‘differences, similarities and individual characteristics of KT strategies’ amongst the three cases (RQ3). As prescribed in the methodology chapter, only sub-

categories of the three cases denoted with a higher degree of code frequency for each in total (i.e., above average of 15) were prioritised for thematic summaries and category-based analysis (for details, please refer to Table 4.21 in Chapter 4). Subsequently, a total of 19 KT strategies were adopted and implemented by the three HEI cases, which were under six dimensions instead of the original seven²⁰. They were selected in terms of the highest code frequency in total²¹ for comparative and thematic-based analysis facilitating through the derivation of tables, diagrams and/or figures. Various types of tables and/or figures assigned in this chapter or as appendices with thematic categories and/or sub-categories derived from the thematic qualitative text analysis process were purposefully constructed for category-based analysis, thematic matrix interpretation and cross-case synthesis.

Based on Table 4.21, I separately re-ranked the code frequency orders from the highest to the lowest of each case and reconstructed a new table as Table 8.1 by placing each case's own ranking order of its prioritised sub-categories of the KT strategy adjacent to one and each other for comparison. The pre-established colour key for the seven dimension of the KT strategy and its related sub-categories used in Chapter 4 was adopted here in respect of its universal application principle for this study. Subsequently, apart from the ranked frequency order in priority for each case of its overall KT development, each case had its own set of key colours forming a pattern of overall priority and/or focus on the adopted and implemented KT strategies over the years. These colour patterns of the sub-category of KTS in specific served similar purposes of analysis with the colour patterns of the dimension of KTS presented afterwards for visualising and comparing differences, similarities and characteristics of the formulated KT strategies among the three cases as in terms of patterns of priority and/or focus. Nevertheless, I reconstructed Table 8.1 and the following tables (i.e., Tables 8.2 to 8.5)

²⁰ Since there was no sub-category of KT strategy under the dimension of protecting strategy has a total code frequency of over 15, none was included for thematic summary and under the thematic-based analysis.

²¹ Among the 19 KT strategies, the enabling environment strategy denoted with 63 as the highest while network strategy denoted with 16 as the lowest in total.

ranking with the strategic foci of the sub-category and dimension of KTS for an overview of KT strategy formulation and development while the frequency ranking did not necessarily imply a sequence of importance for the KT strategies formulated among the cases.



Table 8.1

Comparing Sub-categories of the Formulated KT Strategies by Frequency Ranking and Key Colours of Respective Institutions

HKBU		EdUHK		LU	
Sub-categories of KT Strategy by Frequency Ranking and Key Colours					
Enabling environment	26	Enabling environment	34	KT model building	22
Institutionalisation	22	Incentive	31	KT impact	18
Entrepreneurial	20	Applied research	30	KT Engagement	13
Incentive	18	Capacity building	27	Collaboration	13
Partnership	16	KT Engagement	23	Applied research	9
Impact assessment	14	Accessibility	22	Capacity building	8
Capacity building	10	Marketing	22	Institutionalisation	8
Organisation Structure Establishment	10	KT impact	20	KT Engagement in local community	8
KT impact	9	Incentive - Fiscal or resources	20	Partnership	6
Accessibility	9	Institutionalisation	14	Accessibility	5
Incentive - Fiscal or resources	9	Partnership	10	Incentive - Fiscal or resources	5
Applied research	8	Collaboration	10	Organisation Structure Establishment	4
Collaboration	8	Networking	10	Enabling environment	3
KT Engagement in local community	8	Leadership engagement	9	Incentive	3
Marketing	7	KT Engagement in local community	6	Leadership engagement	3
Leadership engagement	7	KT model building	5	Networking	2
Networking	4	Organisation Structure Establishment	4	Impact assessment	1
KT Engagement	1	Impact assessment	2	Marketing	0
KT model building	0	Entrepreneurial	0	Entrepreneurial	0
	171		274		121
Colour Key for the Dimensions of KT Strategy					
Dimension of KT Strategy	Colour Key (Universally apply for the Dimension and its sub-categories)				
Enabling environment strategy	Green				
KT Engagement strategy	Yellow				
Implementation strategy	Gold				
Capacity building KT strategy	Orange				
Dissemination KT strategy	Light blue				
Formulation strategy	Blue				
Protecting strategy	Light green				

8.3.1 Comparing Differences of Sub-category of KTS. By scrutinising the numbers of code frequency (CF) with the distribution levels and patterns of the key colours among the cases, one of the observable differences was the extreme contradiction between the priority level of entrepreneurial and KT model building strategy in HKBU and LU while the distant level for EdUHK was relatively moderated. Table 8.2a was extracted from Table 8.1 and modified to demonstrate the extreme to moderate differences within each case and the contrasts between HKBU versus EdUHK and LU. Despite the KT model building falling under the dimension of formulation strategy, it was not accorded to a higher priority by EdUHK (e.g., 5 CF) and even not prioritised by HKBU (e.g., 0 CF). In contrast, it was ranked as the highest priority by LU (e.g., 22 CF). The adoption of the entrepreneurial KT strategy was a vice-versa situation that HKBU ranked it as third priority (e.g., 20 CF) while EdUHK and LU ranked it zero priority in their list of KT strategies.

Table 8.2a
Comparing Differences

HKBU		EdUHK		LU	
Entrepreneurial	20	KT model building	5	KT model building	22
KT model building	0	Entrepreneurial	0	Entrepreneurial	0
Comparative Findings					
Extreme differences		Moderate differences		Extreme differences	

The contradictory findings were likely in relation to their unique background, stage and/or strength of research and KT development before and during the commencement period of the KT recurrent funding initiatives. The mission of ‘whole person education’ and the vision to strategically integrate ‘Innovative Research and Community Engagement’ through KT (HKBU, 2014) involve the engagement of academic staff and students, as well as the established experience in technology aspects of KT and its related strategies (e.g., commercialisation and patent strategy). HKBU has, in complement, formulated and implemented the entrepreneurial strategy through the BEST Programme since 2012 to promote student entrepreneurship through training, spin-out activity and intellectual

property seminars etc. (KTO/HKBU, 2016d). This is somewhat linking to the aforementioned vision and mission, and the historical background of technology transfer whereby the nature of nurturing entrepreneurship was a strategic focus and suitable channel for engaging students in KT through innovations and knowledge contributions. Among the three KT Teams with designated functions under the KTO, the establishment of the BEST Team has further enhanced the strategic priority of entrepreneurial strategy in HKBU. Relatively speaking, its highly institutionalised KT structure and functions have enhanced its status of development as a “maturing stage” (Chung, 2013) whereas, HKBU has built in their unique KT model (e.g., institutionalized policy-driven model) through cohesive teams with designated functions and the support from relevant incentive funding and initiative projects.

Comparatively, the KT institutionalisation levels of EdUHK and LU were relatively lower than HKBU in terms of lacking a separate working team and/or office (e.g., the KT Office and sub-teams in HKBU) solely designated for rendering assistance to senior management (e.g., the KTC of HKBU) in formulating, implementing and reviewing KT policies and strategies at the institutional level. Despite LU and EdUHK having delegated a small team of existing staff of certain posts (e.g., ranging from 3-5 under ORS of LU to 7 under KT Unit of EdUHK) with concurrent roles and responsibilities for KT/other duties in between 2013 to 2014, they were hardly regarded as wholly institutionalised in KT’s infrastructure. Apart from KT institutionalisation, both neither have an obvious or strong background of technology transfer nor advocacy of entrepreneurship within the campus or student community. In contrast, EdUHK emphasises much on capacity enhancements and establishing an enabling environment for engaging academic staff participation in KT while the KT model building was just formulated in its strategic plan for modeling with IOE (EdUHK, 2015d). While entrepreneurship has not yet come under the KT agenda of LU, KT model building strategy has become one of the emphases during the course of KT development. Starting from 2000-10, for example, APIAS attempted to

develop LU's KT operative model by producing a KT Manual based on some selected theoretical framework of knowledge transfer (APIAS, LU 2010, 2011, 2012). I created Table 8.2b with a comparison of core-elements of the case-related thematic summaries as regards to an entrepreneurial and KT model building strategy for supporting the differences analysis among the three cases while details are contained in Appendix 8.3 as supplementary evidences.

Table 8.2b

Comparison of Core-Elements of Entrepreneurial and KT Model Building Strategy

Institution Case	HKBU	EdUHK	LU
Sub-category of KTS	Entrepreneurial KT Strategy	KT Model Building	KT Model Building
Core-element Comparison	Effective mechanism of and inseparable from KT	Benchmarking R&KT model of world-class excellence	Derive KT with conceptual framework and operative model
	Engage student participations for sustaining beneficial impact and supporting knowledge-based economy	Advance the development of research, teacher training, and consultancy in education and education-related areas	Construction of Lingnan's Knowledge Transfer Model
	Nurturing social entrepreneurs	Establishing a strategic research and KT model	KT is a philosophy of education and dynamic process of knowledge internalisation, sharing, creation and application
	Benefiting for economic and social sustainability	Expand KT with multi-purposes – service and generating income	Outcome-based/performance-based KT assessment tools for effectiveness measurement and enhancing teaching and learning

8.3.2 Comparing Individual Characteristics among Similarities of Sub-category of KTS.

After an overview screening of the implemented KT strategies as presented in Table 8.1, one of the observable similarities among the three cases seemed to commonly adopt the same or similar strategies during the course of KT development while the order of priorities of each case had its uniqueness and characteristics. Generally, engaging staff and/or student participation in KT was essential and most likely through an incentive strategy, such as fiscal and human resources management. KT and the Innovationem Award in HKBU, KT Matching Grant Scheme in EdUHK, and KT Project Fund in LU, for instance, were regarded as different kinds of incentive mechanisms embedded with different

objectives while having similar functions for KT engagement. They encountered difficulties, as mentioned by A1 that ‘KT participation is not compulsory that it is difficult to promote amongst staff, especially when they are lacking of self-initiatives and/or motivation as their major responsibilities are teaching and research’ [processes], were collective amongst the three cases. Table 8.3 was created with quoted encountered difficulties from the interviewees as evidences in supporting the similarities of adopting KT engagement strategy for staff and/or student engagement, notwithstanding the perspective differences between KT conceptualisation on the management side and KT motivation on the administration side.

Table 8.3

Comparing Similarities for KT engagement by Supporting Evidences

HKBU	EdUHK	LU
(M1) ‘not familiar with KT’	(M2) ‘difficulty to reach consensus in understanding the importance, breadth and depth of KT’	(M3) ‘lacking of understanding towards and of information on knowledge transfer’
(A1) ‘lacking of self-initiatives and motivation’	(A2) need for ‘change and adaptation’	(A3) ‘seldom work in a multi-disciplinary mode of co-operation’ (A4) ‘a lot of undertakings’

Similarities also happened in the adoption of 16 KTS (Table 8.1) within the 19 selected KTS among the three cases with the exception of KT model building, entrepreneurial, and marketing strategy, not been adopted by HKBU for the first exception, EdUHK for the second, and LU for the second and third respectively. Nevertheless, the priority order and/or degree of emphasis over the years among three cases seemed to be not aligned with each other as in terms of sub-category of KTS. With the attempt to draw a dark-thick line onto Table 8.1 by making reference to the above coded frequency average of 15, an asymmetrical ‘T’ shape was outlined across three cases’ sub-category of KT strategies with a minimum coded frequency of 16 to the maximum of 34 . When I intended to analyse interpretatively the individual characteristics of each case by focusing on the outlined ‘T’ shape through

the LTC Model perspective (Chung, 2013a) and the context of case study reports, there were largely three kinds of KT development stages and three types of models driving KT development for each case.

From the perspective of LTC Model, Chung (2013a) suggests that

Knowledge transfer development process is viewed from a Linear-to-Cyclic Model Perspective that it will come across linear development stages, namely as “Beginning Stage”, “Developing Stage” and “Maturing Stage”, whereas each stage has its own characteristic such as stakeholders will need to ask “why” or “where” they are before their acceptance or kick-start of KT, then they want to “know how” can enhance the effectiveness of KT, and then they are matured enough to have the experience to “know what” they implement to actualize the missions of KT. (p. 25)

With HKBU’s emphasis and actualisation on the KT strategy of ‘enabling environment’, ‘institutionalisation’, and institutionalised ‘incentive’ mechanisms, such as KTP, MPCF, and E-Challenge, as well as its implementation through their well-established entrepreneurial (e.g., E-Space and ESAN) and partnership (e.g., flagship KTP Projects) strategy over the years, it was largely at the “maturing stage” of the KT development process particularly for its highly institutionalised process and KT strategies. It already had built-in experience in technology transfer before KT funding initiatives, the revamped and designated KT organisation, the long-term commitments for KT development guided through the decade strategic plan of Vision 2020, and the well-established KTO and different teams with designated roles and responsibilities (e.g., KTP, TT & BEST Team). The above have provided HKBU with the maturity foundation in systematic strategy planning and implementation for achieving its KT vision and mission. Commensurate with HKBU’s highly institutionalised process and KT strategies, it was observed that HKBU’s KT development was under a relatively solid guidance through an institutionalized policy-driven model of development (details refer to the context of case report and conclusion in Chapter 5).

EdUHK focused mostly on a range of KT strategies, including ‘enabling environment’, engagement through ‘incentive’ measures, enhancement through ‘capacity building’, implementation

with an emphasis on ‘applied research’ and ‘KT impact’, and dissemination by ‘accessibility’ and ‘marketing’ strategy. Those were interconnected with unique historical development (e.g., teacher-education focused versus multi-disciplinary development oriented) and contemporary advancement of EdUHK. In fact, EdUHK was experienced through a developing process from sole aims for teacher education to the emerging needs for research and CPD. Then, it encountered the advancing needs for a stand-alone university through enhancement in education and multi-disciplinary development in terms of advancement in teaching, research and KT. Hence, it was basically at the “beginning stage” of the KT development process as EdUHK needs to ask “why” research and KT (e.g., obvious needs to enhance strength in research and KT) and assess “where” its development status was both in research and KT (e.g., established mindset of teacher-education orientation, assessed inadequacy in research, and transformation needs into a university). Therefore, EdUHK depends much on various interrelated KT strategies facilitating for capacity building and enhancements of academia specifically and the University in broad-spectrum. It was observed that EdUHK’s KT development was closely aligned with the capacity building process and interrelated strategies, and that its KT development was guided by a capacity-enhancement driven model of development (for details, please refer to the context of case report and conclusion in Chapter 6).

For LU, it mainly concentrated on the KT strategy of ‘KT model building’ (e.g., Community Education approach, Train-the-Trainer Model, and Service-Learning Model) and its associated ‘KT impact’ (e.g., transfer of thematic knowledge, such as health and ageing, through community education). It was fundamentally at the “developing stage” of the KT development process particularly for establishing a “Lingnan’s model for KT programs” (LU, 2010) through its emphasis on the implementation of ‘KT model building’ with ‘KT impact’ strategy. The rationales and ultimate goals of the adopted and implemented strategies were to explore through experiential programme implementation the establishment of a theoretical and systematic based model to enhance the

effectiveness of KT to the community. It was observed that LU's KT development was closely associated with LU's mission-vision and its motto of "Education for service" underlines by each unit's mission and/or objective agenda on KT. Henceforth, LU was guided by a mission-vision driven model of KT development, such as 'the tradition of community service has already encapsulated in LU's motto of "Education for Service" so that S-L at Lingnan becomes core element of knowledge transfer' (A3's interview transcript) (for details, please refer to the context of case report and conclusion in Chapter 7).

To summarise the three cases' KT development stages and driving model for KT development, I constructed Table 8.4 for overviewing the interpretative analysis and findings in a comparative way of demonstration.

Table 8.4

KT Development Stages and KT Development Model among three Cases

Case \ Comparative Item	HKBU	EdUHK	LU
KT Development Stage	Maturing Stage	Beginning Stage	Developing Stage
Type of KT Development Model	Institutionalized-policy Driven Model	Capacity-enhancement Driven Model	Mission-vision Driven Model

8.3.3 Comparing Individual Characteristics among Differences and Similarities of Dimensions of KTS. By scrutinising the numbers of CF with the distribution levels and patterns of the key colours among the cases, one of the observable differences was the contrast among the priority levels of six out of seven dimensions of KTS, namely protecting, formulation, dissemination, enabling environment, capacity building, and engagement strategy, adopted and implemented by the three cases. Table 8.5 was extracted from the table created in Appendix 8.1 and modified to demonstrate extreme to moderate differences, among HKBU, EdUHK and LU. Two major patterns were observed that involved 'moderate to extreme differences' (i.e., pattern one) among LU, HKBU and EdUHK. These were

dissemination, capacity building, and engagement strategy, in which LU (e.g., 9, 15, 29 CF) was comparatively not accorded a higher priority than HKBU (e.g., 22, 25, 48 CF) and EdUHK (e.g., 46, 43, 98 CF) while EdUHK accorded the highest priority among three cases respectively. The other involved ‘extreme differences’ (i.e., pattern two) either between LU/EdUHK (e.g., 0 or 2 CF) and HKBU (e.g., 23 CF), i.e., protecting strategy, or HKBU/EdUHK (e.g., 2 or 5 and 59 or 55 CF) and LU (e.g., 36 and 9 CF), i.e., formulation and enabling environment strategy respectively.

Table 8.5

Comparing Differences and Similarities for Individual Characteristics

Dimension of KT Strategy	HKBU	EdUHK	LU	Comparative Findings	Pattern
Protecting	23	2	0	Extreme differences between LU/EdUHK and HKBU	Two
Dissemination	22	46	9	Moderate to extreme differences among LU, HKBU and EdUHK	One
Formulation	2	5	36	Extreme differences between HKBU/EdUHK and LU	Two
Enabling Environment	59	55	9	Extreme differences between LU and EdUHK/HKBU	Two
Capacity Building	25	43	15	Moderate to extreme differences among LU, HKBU and EdUHK	One
Engagement	48	98	29	Moderate to extreme differences among LU, HKBU and EdUHK	One

The contrast among three cases, either pattern one or two, were possibly interlinked with individual characteristics of each case, of which both the KT development stages and KT development models for each case were comparatively and interpretatively analysed in the previous section. Besides, both ‘moderate to extreme differences’ and ‘extreme differences’ were likely affected by each own

background of research and KT development, which may have driven each case to accord one's own priorities and levels of efforts for different KT strategies over the years of KT development. For example, both EdUHK and LU were mainly focused on non-technology areas of KT, such as education, arts, humanities, and social sciences, notwithstanding that EdUHK began to launch its KT through recent innovation research by the academic staff from the Science and Environmental Studies (e.g., photocatalytic nanomaterials for air purification and energy conversion (EdUHK, 2015, December)). In contrast, HKBU was having the experience of technology transfer and will continue to develop this technology and patent areas of KT through its academic and/or applied research by the Faculty of Science and School of Chinese Medicine. Hence, the formulation and implementation of protecting and its associated strategies like patent and commercialisation strategy were still in need and in place. A designated team of TT under the KTO and the establishment of Strategic Patent Fund and MPCF were concentered evidences in supporting why HKBU emphasises TT apart from KT in non-technology areas. In parallel, HKBU has also developed the non-technology areas of KT through its academic areas, such as arts, social sciences, visual arts, and business. These provide basic proofs for the 'extreme differences' under the protecting strategy between LU/EdUHK and HKBU.

Meanwhile, there were extreme differences between HKBU/EdUHK and LU under the formulation and enabling environment strategy. Under the Mission-vision Driven Model and the transitional development of KT coordination from decentralisation to centralisation, LU was driven to formulate different KT implementation models aligning with the tradition of community services and engagement. In addition, a lack of KT coordinating unit at the centralised and institutional level during the first four years of KT development in LU diverted to its focus on KT implementation and model formulation by the decentralised unit (e.g., APIPA and OSL) instead of establishing an enabling environment through the strategy of institutionalisation and organisation structure establishment. In contrast, HKBU and EdUHK have established a KTO and KT Task Force/KT Unit designated for

central coordination and strategic functions in promoting and developing KT in the university-wide boundary. As regards to the differences among the three cases, there were similarities between LU and EdUHK in protecting strategy while similarities between EdUHK and HKBU were observed in formulation and enabling environment strategy.

Regarding pattern one among LU, HKBU and EdUHK, there were ‘moderate to extreme differences’ between them in the strategy of dissemination, capacity building, and engagement. Of the differences, EdUHK accorded the highest priorities in comparing HKBU and LU. In respect of EdUHK, it was likely at the beginning stage of KT development driven by the Capacity Enhancement Model, and necessary for them to proactively engage staff participation in KT and disseminate KT culture and impacts with the purposes of capacity enhancements. Since HKBU was at the maturing stage driven by institutionalised policies, the three strategies were likely guided under stabilised management structure (e.g., KTP & BEST Team), standardized mechanism and procedures (e.g., BEST Programme and KTP Seed Fund) progressively manifesting a comparatively moderate pace of priorities. Lastly, LU was at the developing stage driven by the mission-vision of the University in general and individual units in transition that piloted and established KT models implemented and/or modified for exploring an effective one in order to pursue its mission-vision and KT objectives, especially during the first four-year period. At the decentralised period of KT development, it was unit-specific instead of university-wide philosophy that the strategy of dissemination, capacity building, and engagement might not be put in the strategic agenda. Taking CF in a year-by-year differentiation, one may observe that 23 out of 29 CF of the engagement strategies and 8 out of 9 were dispersed at the centralised stage in 2013-14 to 2014-15. Conversely, capacity building was more evenly distributed over the 6-year period as it involved capacity building for community stakeholders, students and staff during the process of KT through train-the-trainer, community services and staff engagement.

In brief, the formulation, implementation and emphasis of various KT strategies among the

three cases were differentiated with differences and similarities under different contexts. From the above interpretative analyses, apart from the distinguished models and stages, I probably would have differentiated their individual characteristics as in terms of KT development process into three observations. HKBU possibly fell into the process of progressive establishment based on their foundation TT experience and guidance through institutionalised management functions and policies. EdUHK was most likely experienced through the process of enhancing development in raising its research and professional knowledge into diversification status and quality standard. LU was probably going through the process of transitional adaptation in transforming from decentralised to centralised functions, roles and responsibilities of the coordinating unit.

8.3.4 Comparing Three Cases in the 6W-elements of KT Strategy Formulation and Implementation under the Heuristic Framework of Analysis. Referring to the criteria for finding interpretation in the methodology chapter, another set of criteria were the 6W-elements of the heuristic approach. This converged analytical framework was designed in order to address RQ3 and RQ4 from a descriptive analysis approach. The approach was immersed with the analysing technique of deconstructing the formulated and implemented KTS from the textual evidences with reference from the 6W-element of Heuristic Approach Process of deconstruction that was conducted and findings were consolidated in the individual case chapters (please refer to Appendix 5.3 of Chapter 5, 6.3 of Chapter 6, and 7.3 of Chapter 7 for details). In this chapter, a reconstructing technique was employed by interpretation and comparison of the aggregated findings of the three cases in terms of ‘differences, similarities and individual characteristics of KT strategies’ (RQ3) and of ‘notable differences’ in ‘why (i.e., rationale of KT)’, ‘in what ways (i.e., core KTS)’, ‘what to be transferred (i.e., KT areas)’, and ‘to/with whom and by whom (i.e., internal/external stakeholders)’ (RQ4). As regards of ‘with what effect’ (i.e., foreseeable KT impacts), it was not directly related to the RQs whereby, I considered that the foreseeable KT impacts derived from the KT initiatives of the cases were of relevance to the

specific objectives of the concerned projects at large. Hence, this last ‘6W-element’ was not included for comparative analysis. Of the aforementioned five ‘6W-element’, relevant aggregated findings of the three cases were consolidated and/or reconstructed under the following comparing sub-sections grouping with one or a few paragraphs and/or tables for comparative and interpretative analyses.

8.3.4.1 Comparing ‘Why knowledge transfer’. The 6W-element of ‘Why KT’ relates to the purposes and rationales of KT embedded in the specific background and context of each case whereby, the vision-mission of the University and its KT objectives may also have directives towards the reasons behind KT. Although the existing funding mode, major source of funding, academic profile, university’s population, and research infrastructure were similar among the cases, the historical background, vision-mission, and stages of KT development of each case had its own characteristics. The contextual differences of the three cases shaped their purposes and rationales of KT with notable differences as in terms of emphases and related to different stages of KT development. To facilitate the comparative analysis, I consolidated the aggregated findings of the brief background and context as well as the main thematic category on ‘why KT’ of the three cases and reconstructed them into tables in Appendix 8.4 and 8.5 respectively.

Among the three, historical development of HKBU was comparatively holistic as dedicated to academic excellence in technology and non-technology knowledge areas and of whole person education holistically for inducing creativity, equipping knowledge, nurturing globalised attributes and widening horizontal perspectives (HKBU, 2016a). In Vision 2020, HKBU attempts to strategically integrate Quality Teaching and Learning, Innovative Research and Community Engagement through KT effectively so as to achieve the Vision of becoming “the regional leader in whole person education that delivers academic excellence and innovation” (HKBU, 2014, pp. 1-2). Aligning with its maturing stage of KT development, HKBU knows well the purposes and rationales of KT and what they should implement for KT objective actualisation. According to the case-related thematic summary on ‘why

KT' (e.g., 'what are the purposes of KT'), M1 specified that KT is a means of staff/student participation for the ultimate goal of whole person education. Similarly, A1 mentioned that rationales of KTS have to be associated with research, teaching, and/or learning enhancements for 'whole person development' while KT impacts for stimulating innovations. Both have emphasised the importance of KT for 'whole person education/development' while M1 specified on KT participation (e.g., community engagement) and A1 for KT impacts on innovations (e.g., innovative research). Their expression on 'why KT' have largely aligned with the HKBU's 'context', particularly when I cross-examined with the strategic policy document of Vision 2020 in which the 'whole person education', strategic focus areas of innovative research and community engagement are the guiding framework for KT strategy formulation (HKBU, 2014).

Notwithstanding that there were some others purposes and rationales involved behind the implementation of KT, specifically manifested in the KT objectives of HKBU, it seems from observation of the management and administration perspectives that the 'why KT' emphasised the people/participant-element. This observation was further substantiated by extracting the core rationales subsumed within the KT objectives of HKBU as 'empowerment of partners and individual participants' (KTO/HKBU, 2016h), 'enhance impacts to the society' (KTO/HKBU, 2010), 'facilitate KT from academia to industry' (KTO/HKBU, 2016l), and 'enable HKBU students' (KTO/HKBU, 2016f).

With a relatively short history of development as in terms of R&D and KT particularly before 2000, EdUHK was at a beginning stage of KT development dedicating its focus on the development of education and related disciplines. EdUHK believes that "education creates knowledge, understanding and the capacity to transform life and society" that the provision of "multidisciplinary learning and research environment beyond education" is to establish a conducive environment specifically for pursuing its missions and KT objectives (EdUHK, n.d.b). Regarding 'why KT', M2 suggested that learning and transformation capacity achieved through research and services while KTS needs to

adhere to the context of education-related development, university's strengths, participatory engagement, incentive mechanisms, and internationalisation in research strengths and impacts. Precisely, A2 emphasised applied research knowledge is key to community connection and improvement. Both have simultaneously and implicitly emphasised 'capacity changes' (e.g., transformation and improvement of capacity) through services and research, in particular, of applied research knowledge. Nevertheless, capacity enhancements among staff and in research and KT were necessary in respect of the historical development and vision-mission of EdUHK. The expression 'why KT' by the interviewees were basically associated with EdUHK's 'context'. By re-examining the strategic plans of 2009-12 and 2013-16 in which one of the strategic areas was to strengthen staff capacity through "nurturing and sustaining proactive researchers and policy advocates" so as to enhance "the academic capacity and leadership", and establish a sustainable and enriched research infrastructure and culture in the University (EdUHK, 2009, 2013b). These aimed at facilitating "KT and application to teaching and learning, and professional practice" for having impacts on academic, curriculum, policy and wider society (EdUHK, 2009, 2013b).

Although there were some others purposes and rationales involved behind the implementation of KT, explicitly manifested in the KT objectives of EdUHK, it seems from observing the management and administration perspectives that 'why KT' emphasised the capacity/transformation-element whereby KT had the functionality for development and enhancement. This observation was further substantiated by extracting the core rationales subsumed within the KT objectives of EdUHK as to 'link closely with the research and teaching activities', 'contribute development by developing intellectual capacity and capital', and 'serve education development needs' (EdUHK, 2010b).

LU's uniqueness in liberal arts education and the motto of "Education for service" have been, to some extent, giving guidance on the development of research and KT through community services and S-L long before their engagement in KT funding initiatives. Despite LU has not established a separate

KT office or Task Force, its distinguished engagement with the community through S-L and various forms of community services has facilitated them entering into a developing stage of KT development. To pursue the mission of LU, it commits to “encourage faculty and students to contribute to society through original research and KT”, whereby community engagement could be accomplished through serving and making positive impact on humanity betterment (LU, 2016b). These likely address the issue of ‘why KT’ of which three interviewees’ perspectives on the purposes of KT were conformed to the historical and mission alignments of LU. As regarding ‘why KT’, M3 stressed that university-created knowledge benefits society development through collaboration and/or S-L KT strategy addressing users’ needs and practicalities. A3 addressed that KT aims for impacting community policies. Likewise, A4 suggested that KT is R & D related and should be outbound in nature, reachable, practical and exerted impacts on public’s quality of life, professional knowledge, and policy impacts emphasising with long-term and in-depth social and/or economic benefits for transformation. Three have addressed the purposes of KT are to create impacts for development and long-term benefits in which ‘effectiveness’ of KT is the core concern of LU while different types of community services serve as the means in achieving the ends in a practical sense (e.g., users’ needs and practicalities oriented, and benefits for transformation).

However, the key objectives of KT in LU were various at different stages of KT development while there were no explicit KT objectives stated on the webpage of the ORS. Initially, it aimed to build up “Lingnan’s model for effective KT programs” (LU, 2010) while the OSL emphasised to engage academic staff and students through S-L and applied research knowledge to serve the community (LU, 2014). Under the enhanced KT structure at the institute level, the ORS attempted to encourage and engage staff to participate in and serve through KT to the community (LU, 2014) while the ultimate purpose of KT is to exert considerable impacts on the social concerned issues and benefit a specific target group in society (LU A4’s interview transcript, August 5, 2015). The KT purposes

involved behind the implementation of KT have implicitly manifested in the objectives of LU's KT reports and interview transcripts. These, indeed, reflect similar views and perspectives of the management and administration side of LU generally.

Apart from the characteristics of each case and the notable differences among them in comparing 'Why KT', there were considerable commonalities reflected through the analytical process of 'overview' derived from the thematic category-based and case-related summaries of the seven-interviewees among the three cases. The 'overview' of 'why KT' denoted as 'in general, KT and its strategies associate with research, teaching, learning, and services whereby innovative and practical knowledge are generated with long-term and in-depth socio-economic benefits for the advancement and transformation of the individual, society, different professions, and policies while adhering to the context of respective universities in specific and the higher education at large'.

To summarise the comparative findings of the three cases in respect of 'why KT', especially under individual context of historical background, vision-mission, and stages of KT development, Table 8.6 was created for reviewing the interpretative analysis and findings comparatively in an overview of the three cases.

Table 8.6

Comparative Findings on ‘Why KT’ with Context among the Three Cases

Case \ Comparative Item	HKBU	EdUHK	LU
Notable Differences			
Emphasis of ‘Why KT’	People/Participant-element	Capacity/Transformation-element	KT effectiveness-element
Orientation of the Emphasis	Professional customer-oriented	Functionality-oriented	Practice and outcome-oriented
Characteristics and Contextual Differences			
Distinguished Historical Background in relation to Research and KT	Relatively holistic in R&D, TT and KT	Comparatively fresh in R&D and KT	Explicitly encourage R&D and KT through services
Vision-Mission in Brief	Broad-based, creativity-inspiring and Whole Person Education	Education for capacity building and transformation	Liberal arts oriented and Education for Service
KT Development Stage	Maturing Stage	Beginning Stage	Developing Stage
Similarity in ‘Why KT’			
KT are closely related to R & D of the University whereby it should be outbound in nature, reachable, practical and exerted impacts on human society, policies, professional knowledge and development through multiple stakeholders’ participation and contributions in achieving different specific purposes of respective universities while transformation in general.			

8.3.4.2 Comparing “in what ways”. The 6W-element of ‘In what ways’ associates with the dissemination of KT strategies, which implies the ways adopted by the institution to disseminate the formulated KT strategies as well as involves the core KT strategies and possible channels of dissemination for each case. To address part of the RQ2 of “how have the institutions disseminated the KT strategies?”, analyses were conducted individually at each case study’s chapter in which the management and implementation functions, vision, mission and values of KT already embedded with

obvious and relevant messages of KT strategies disseminated through various channels. For the purposes of comparative analysis, I consolidated the aggregated findings of the disseminated examples and possible dissemination channels as well as the thematic category on ‘dissemination strategy’ of the three cases and reconstructed them into tables at Appendices 8.6, 8.7 and 8.8 respectively.

In respect of the exhaustive messages of KT strategies disseminated through various channels, in particular, of the bulky records of KT publications and websites, it was difficult to comprehensively compare and analysis the differences and similarities of the disseminated KT strategies derived from different possible channels for generalising a full picture of the three cases. Only some examples of the core disseminated KT strategies were quoted in order to deliver a general picture among the cases while the KT management functions and roles of respective coordinating units had disseminated their KT emphases formulating one’s own characteristics.

On the whole, the dissemination channels of KT strategies among the three cases were similar, for instance, through KT related websites, publications and multi-media (please see Appendix 8.6), notwithstanding that the types and approaches of the dissemination channels were likely to have differences to a certain extent (please refer to Appendix 8.7). Apart from the similarities of dissemination of KT strategies and related matters through the traditional and standardized approach/requirement of publications and electronic newsletters, such as KT annual reports, university annual reports, and e-News, there were observed differences among the cases by scrutinising different types of dissemination channels.

Besides a separate website (i.e., <http://kto.hkbu.edu.hk/>) was established within the category of Research in HKBU, the KT related publications and electronic newsletters at the university level were comparatively quantified and diversified there compared to EdUHK and LU. HKBU has published the TT related teasers covering the technology and invention areas with patent license, such as “Green and Environmental Technology”, “Information and Communication”, and “Biotechnology and Chinese

Medicine” (KTO/HKBU, 2016i) whereby the other two have not. Diversified KT related publications have also been manifested and immersed through a variety of published and electronic newsletter/magazines, like the HKBU Horizons, On Campus, the Buddy Magazine, Eyes on HKBU and We Talk (HKBU, 2016b). Although those may have been reporting factual news updates, recent developments, people and events monthly or quarterly, were commonly disseminated knowledge and technology related issues touching with the social concerned and through special features mostly in the covering pages. The covering page of “Global warming – a worldwide crisis” of the Horizons (HKBU, March 2016) and the thematic articles, like “Health and Wellness” and “Arts and Leisure” contained a soft-touching approach of knowledge dissemination through the electronic “We Talk” (HKBU, 2015b) and were typical examples of thematic and expertise KT. In addition, KTO has collected some KT related videos and uploaded to KTO’s website timely as marketing for the research and invention achievements of HKBU’s scholars while its HKBUtube has uploaded some teaching videos for public’s accessibility.

Dissimilar to HKBU, the KT website (i.e., <http://www.eduhk.hk/rdo/KnowledgeTransfer>) was established under RDO within the category of Research in EdUHK while the KT related publications and electronic newsletters at the university level were comparatively less in quantity and variety than HKBU but a little bit more than LU. However, EdUHK initiated increasing the marketing and publicity of research and KT through multi-media only at a later stage of KT development, which was not at the same pace of HKBU. The e-Magazine of “Joy of Learning” issued in around 2010 was to increase publicity of its research, knowledge and updates development (EdUHK, 2011b). To diversify the publications, the first issue of the R&KT Newsletter was commensurate afterwards with the appointment of a KT Director in 2014 (EdUHK, December 2014) in which it highlights the academia, trending research and KT in the University. Besides, EdUHK attempted to promote their academia, strengths and knowledge areas through the e-publication of “Transforming People” (EdUHK, May

2015) as well as showcase the KT projects, education focused and beyond education research projects through the “Transforming Knowledge” (EdUHK, April 2015), of which both were launched in April 2012 with an immersing approach of KT and publicity of its own strengths and research-based knowledge.

Among three cases, LU’s KT website (i.e., <https://www.ln.edu.hk/ors/kt.php>) was established under ORS within the category of Research in LU at a later stage of KT development in 2014 (LU, 2014) while there was no designated website or section on KT during the first-four years of KT coordination by APIAS and OSL. This brand new section on KT was revamped by the ORS for providing information about the most recent KT Annual Reports and showcasing KT project highlights over the years (LU, 2014) categorised with a few thematic knowledge areas, such as “Revitalizing Heritage” and “Arts and Culture Out-reach” (ORS/LU, 2016). Apart from the KT section, KT related publications and electronic newsletters at the university level were comparatively less in quantity and variety than HKBU and EdUHK. Nevertheless, LU used to apply the S-L model as a means of KT before 2009-10 that the KT issues were implicitly disseminated through the website of OSL, such as the strategy of community engagement (OSL/LU, 2016b). In addition, ORS has adopted an outreach approach for increasing accessibility of university- or expert-owned knowledge to the community and professionals for showcasing the strengths and achievements of LU as recognition in a u-wide scale of KT activities (LU, 2014). The “Research and Impact Newsletter” was newly published having its first issue in April 2016 (LU, April 2016) and the revamped content of the Lingnan Chronicle in December 2015 by adding “Research & Impact” and “Teaching and Learning” were typical examples of KT dissemination enhancements.

Based in Appendix 8.6, a general picture among the cases with regard to the examples of the disseminated KT strategies derived from the different channels was drawn. The messages and their associated KT strategies disseminated through HKBU’s channels probably have indicated its emphasis

on the implementation of KT by means of the established structure and programmes. For example, KTO would accomplish its vision by acting as a supportive bridge between the broader community and HKBU through a networking strategy (KTO/HKBU, 2016b). Besides, HKBU have formulated three core or flagship programmes, namely as KTP Projects, MPCF, and BEST, with structural format for KT implementation and facilitating the strategy of partnership, technology transfer and entrepreneurship. They even created the post of KT ambassadors and persistently immersed KT through multi-media to promote KT in proactive and structured ways within and outside the HKBU community.

Similarly, EdUHK attempted to develop and disseminate its KT strategies through the establishment of the KT Task Force and KT Unit in a structural and institutionalised context, notwithstanding that this revamped action was launched in late 2014 by the appointment of existing staff with concurrent roles in KT and teaching/research/administration. Unlike HKBU, however, EdUHK was mostly focused on disseminating the importance of research-based and university-owned knowledge with long-lasting impacts while capacity building was essential and actualised through the Task Force/Unit, CPD, partnerships, recognition, and marketing for brand building in research potential, impacts and KT achievements. EdUHK prioritises its development in KT disseminating through the KT website and other media and has clearly demonstrated its emphases on the strategies for KT development.

Conversely, LU's disseminated messages and their associated KT strategies have largely denoted its emphasis on KT implementation whereby thematic, S-L, applied research, and partnership strategies were focused on the process and means of implementation while impact strategy was on the outcomes. In addition, LU also emphasised student, faculty and community engagement for services and contributions through research and KT. As a whole, LU seems to be more practical-oriented and has the inclination to provide KT frameworks with room for individual implementation of KT and research projects to achieve one's own expected impact. Engagement was the supplementary method to

facilitate the implementation of KT with individual choice of models among the means of S-L, applied research, and thematic approach, etc.

8.3.4.3 Comparing “what to be transferred”. The 6W-element of ‘what to be transferred’ correlates with ‘formulation of KT strategy’ from which the ‘what-element’ referring to the KT areas, such as technology (e.g., scientific innovation) and non-technology (e.g., arts and humanities) with explicit and/or tacit knowledge as its specific areas while proposition (e.g., award offering criteria) and procedure (e.g., patent application procedure) are specific areas of policy-based and/or technical-based knowledge. By overall observation, the three cases were commonly emphasised that the research and professional based along with university-owned knowledge with relevant impacts are fundamental to the KT areas, either in the form of technology or non-technology, to be transferred to the specific targets or communities. The award offering criteria of the KTP and MPCF in HKBU, the KT Awards and KT Matching Grant Scheme in EdUHK, and the KT Project Fund in LU have provided substantial proofs towards their emphases. The only differences as regards of the KT areas among the cases were that the technology knowledge did not apply to LU in respect of its tradition of a liberal arts curriculum and education. In addition, the existing volume of technology knowledge transfer in EdUHK was comparatively small (e.g., mainly involved by the Science and Environmental Studies) aligning with its major academic programmes and research areas which were focused on the non-technology side. In HKBU, both types of knowledge were transferred and developed in a more balanced way with regard to its curricula and research in both areas. Figures 5.2, 6.2 and 7.2 and Appendices 5.3, 6.3 and 7.3 of the cases were established with some consolidated information in relation to the specific examples of ‘what to be transferred’ by the three cases.

Besides, the notable differences of the specific knowledge areas to be transferred among the cases were in line with their strategic focus areas of research and manifested categories of thematic knowledge, despite there were other KT areas which may not have been comprehensively covered. For

comparative purposes, I attempted to consolidate the aggregated data collected from various sources of the cases to demonstrate their differences and characteristics through the table constructed in Appendix 8.9. In brief, the notable differences and characteristics of ‘what to be transferred’ by the three cases were differentiated by their emphases of the KT areas as follows:

1. HKBU - Multi-disciplinary KT areas in technology with health-oriented and non-technology with multiple disciplines;
2. EdUHK - KT areas in education and beyond education with arts, humanities and social sciences focus; and
3. LU - KT areas in liberal arts with arts, humanities, and social sciences focus.

8.3.4.4 Comparing ‘To/with whom and by whom’. Among the 6W-elements, there were more commonalities among the cases in the ‘to/with whom and by whom’, of which, this element involved the key internal and external stakeholders during the implementation process of KT strategies, even though one may argue that the major target sectors would be varied to a certain extent. These commonalities generally involved the designated KT staff, academic staff, researchers and/or university students as the internal stakeholders while the wider community, individual/specific participants, and staff/students at the university’s campus as the external stakeholders of whom they may be the target recipients (to whom) and/or the partners (with whom) of the internal stakeholders. The reasons behind were likely related to the general concepts and purposes of KT that should be aligned with research-based and university-owned knowledge from which it may be transferred to and/or collaborative with the community stakeholders for realising the potential benefits and impacts as far as possible.

Nevertheless, the notable differences as regards this 6W-element of ‘to/with whom’ among the cases were manifested by the major target sectors probably in view of their specific KT areas. HKBU’s health related knowledge in the form of professional-based, technologies and/or patents likely targeted the people with health concerns in general and health industry in particular. Given that education and

related knowledge are the core positioning and role of the EdUHK, its major target sectors are both teaching profession in specific and education field at large. Regarding LU, its uniqueness in liberal arts knowledge and KT through community services are mostly targeted the people with interest and/or needs in relation to its specific liberal arts knowledge while the NGOs and the needy communities would almost certainly become its major targets of KT through community services and S-L. Specific examples of KT key stakeholders are illustrated in Appendices 7.7, 8.7, and 9.7 respectively as supplementary information.

8.3.5 Notable Differences between Strategy Formulation, Dissemination and Implementation amongst Three HEI Cases. Comparative and Interpretative Analysis of the Aspects of KT Strategy among the Three Cases - Three Discernible Dimensions Derived from the Adamson and Morris's framework

Apart from thematic-based and the 6W-elements of the heuristic approach for comparative analyses of the differences, similarities and individual characteristics of KT strategies and the notable differences between strategy formulation, dissemination and implementation amongst the three cases, three discernible dimensions derived from the Adamson and Morris' framework (2007). These were identified and adopted for meaningful comparative and interpretative analysis so as to ascertain notable differences between strategy formulation, dissemination and implementation amongst the three HEIs (i.e., RQ4). To facilitate the comparative analysis, I consolidated the aggregated findings collected from the typical manifestations of the aspect of KT strategy, namely policy documents, KT reports/webpages, and interview transcripts. Those were reconstructed into tables in Appendices 8.10 to 8.13 respectively for comparing and analysing horizontally and/or vertically of the conceptual understandings and the three interconnected aspects of KT strategy in order to identify notable differences among the cases.

For enhancing consistency in the comparative analysis of the conceptual understanding and

interpretation of KT, the collected data from different sources were converged with the identification of concepts, such as mission, strategy, means, and purposes, embedded in the context of the retrieved sentences into a summary for each case. Obviously, it was observed that the overall conceptualisation of KT by the three cases was comparable in which KT was commonly defined as one of the missions (e.g., the third pillar) of the university driving and facilitating to achieve the designated purposes of KT (e.g., for society betterment and advancement) through different strategies (e.g., engage academic staff and buildup of partnership base) and KT initiatives (e.g., community services and engagement). The variations on the conceptualisation of KT among the cases were affiliated with their different emphases on the purposes, strategies, and initiatives of KT, particularly associated with their own missions, strength in research, expertise, and KT development stages. Relevant analyses have been discussed in previous sections while the identified concepts in this section were reorganised into Table 8.7 demonstrating with typical examples extracted from Appendix 8.10 for showing the variations under a non-exhaustive scenario.

Table 8.7

Identified Concepts with Typical Examples under the Conceptual Understanding of KT among the Three Cases

Identified Concepts	HKBU	EdUHK	LU
Mission	Third pillar	Third pillar University-wide involvement	KT as a “drip-drip business” University created knowledge should be transferred to and applied by the community
Strategy	Applies research Cultivating entrepreneurial culture Needs matching with strengths	Actualised thru promotion of applied research Strengthening KTS and its impacts KT as services Internal and external collaboration	Teaching based KT thru Integration S-L KT thru expertise and professional training Engage academic staff and build up partnership base Needs assessments and platforms building Applicable practices
Means	Community contributions thru KT Entrepreneurship For community engagement Inform research, teaching and learning Best fit-for-purpose channel	Linking development Legitimacy, innovation, and creativity	Expertise and professional training S-L
Purpose	Community needs Society betterment and advancement	Contribution to communities and professions Contributions to teaching and learning, professional practice Facilitate education and social advocacy and transformation	Community in need Benefitting social and Professional development Cyclic transformation

8.3.5.1 Comparing notable differences between the “aspects of KT strategy” among the cases.

Besides the observed similarities and differences in the discernible dimension of purpose and perspective of KT, the other dimension as the aspects of KT strategy elaborated in Appendices 8.11 to 8.13 were reviewed and analysed comparatively in order to identify notable differences between strategy formulation, dissemination and implementation among the cases. For interpretive purposes, differences in the developmental stages of KT among the cases were employed in order to compare and identify notable differences between the aspects of KT strategy accordingly. Based on the interpretative analyses of KT development stages in the previous section, it was mostly identified that HKBU was at the maturing stage, EdUHK at the beginning stage, and LU at the developing stage respectively. According to the LTC Model (Chung, 2013), each development stage had its own characteristics whereby notable differences conforming with the cases were likely observed aligning with the aggregated findings collected from the typical manifestations of the aspect of KT strategy.

HKBU in its maturing stage of KT development, the characteristics were associated with its maturity level with adequate implementation experience in actualising the KT missions (Chung, 2013). Basically, HKBU's Strategic Plan of Vision 2020 and the mission and vision of KTO have already disseminated and set out the guiding framework and principles for KT strategy formulation and implementation. Likely, the ‘whole person education’, strategic focus areas of innovative research and community engagement (HKBU, 2014) are the guiding framework for KT strategy formulation commensurate with KTO's principles of enabling and facilitating KT, for and with the community, rapport building, transforming motivation and mindset, and realistically attracting and facilitating student participation (HKBU M1's interview transcript, August 3, 2015). These cited examples principally illustrate an explicit framework guiding a progressive development of KT with steered principles for KT strategy formulation, dissemination and implementation in HKBU. Taking the principle of enabling and facilitating KT as illustrative example, an incentive strategy was formulated

and disseminated through the establishment of incentive mechanisms, such as KTP and MPCF, for motivating KT participation and facilitating implementation through the institutionalized flagship KT projects (HKBU M1 and M2's transcript, 2015).

EdUHK in its beginning stage of KT development, the characteristic is connected with its *“stakeholders (academic staff) will need to ask ‘why’ or ‘where’ they are before their acceptance or kick-start of KT”* (Chung, 2013, p. 25). Obviously, the vision of “Education Plus”, the embrace of applied research strategy with impacts, and the recent strategy of benchmarking against IOE were well written in the R&KT Strategy 2015-2018 of EdUHK (2015d), notwithstanding the concept of “Education Plus” and the emphasis of applied research has been in place before this R&KT Strategy. These, in fact, have illustrated the needs and directions guiding EdUHK to transform and enhance, in particular, of its capacity and emphases in research and “disciplinary areas complementary to Education” (EdUHK, 2015d, p. 1). In its strategy plan, their expectations on the active participation in teaching, research and KT by the academic staff, their commitments to applied research with social and professional relevance and impacts, their intentions to articulate the rationales of and positioning in research and KT, and the strategies to motivate active participation among staff (EdUHK, 2015d) were indeed commensurate with the characteristic of the beginning stage of KT development. The benchmarking with IOE's excellence in education and social research for furtherance of EdUHK's research capacity (EdUHK, 2015d) was also indicated its status of KT development.

Under such notable circumstances, EdUHK's perspective on the formulation, dissemination and implementation of KT strategies were more likely addressed to the needs for staff engagement and participation in KT through a bottom-up approach, for recognition as incentives to motivate and perform, for brand building through proactive promotion, and for establishing research impacts through regional and international partnerships (EdUHK M2's transcript, 2015). In practice, the administration perspective was inclined to emphasise staff development, capacity building, incentives, and

institutionalisation for staff engagement and qualitative KT development (EdUHK A2's transcript, 2015). These are cited examples basically elucidating an explicit positioning of the policy framework guiding under the beginning scenario into a transformation status of staff, research and KT development enhanced through the principal perspectives for KT strategy formulation, dissemination and implementation in EdUHK. Quoting staff development is of paramount importance for KT engagement as an illustrative example, capacity building strategy was formulated and disseminated through organizing professional development workshops and seminars, such as KT sharing sessions, for facilitating understanding of and participation in KT (EdUHK M2 & A2's transcript, 2015).

Lastly, LU in its developing stage of KT development, the characteristic is interlinked with its intention to explore how the effectiveness of KT could be enhanced (Chung, 2013). Despite there were no explicit KT related vision-mission under the KT section/reports of LU, the Strategic Plan with its refined mission statement, i.e., community engagement and encouragement of faculties and students contributing "to society through original research and KT" (LU, 2015b), and the traditional adoption of "Education for Service" (LU, 2009) have already been disseminated and set out in the guiding framework and principles for KT strategy formulation and implementation. The strategic development of teaching based KT through integration of S-L and KT through expertise and professional training (LU, 2009) during community engagement have denoted the importance of community services from which the principles and/or actions for KT strategy formulation, dissemination and implementation in LU were likely guided and shaped by these strategic policies. The principles of adhering to practical and users' needs, positioning close contact with the community, deriving synergies through reciprocal communication and key stakeholder engagement, reaching out and participatory partnership, and performing one's own characteristics and specialties for diversification and strength maximisation were quoted examples. These were most likely inclined to enhance KT effectiveness through S-L, community services, and/or collaboration projects (LU M3, A3 & A4's transcripts, 2015). Citing the

principle of reaching out and participatory partnership as an illustrative example, collaboration strategy was formulated and disseminated through community services for creating impacts by applied or community-related research through S-L and collaboration projects (LU A3 and A4's transcripts, 2015).

By reviewing the characteristics associated with the different KT development stages of the three cases through interpretative and comparative analyses of the aggregated findings, notable differences between strategy formulation, dissemination and implementation among the cases were likely aligned with their characteristics and developmental stages at large. Moreover, there seems to be general differences between the aspects of KT strategy as if the perspectives specified at the strategy formulation aspect were more macro, directive, and conceptual-oriented while the strategy dissemination and implementation were more micro, operative and practical-oriented. Given the management perspective on the strategy formulation “needs for proactive promotion and marketing for brand building” as one of the examples that M2 has suggested for “brand building and marketing through traditional and contemporary media” as implementation strategy while disseminating through “proactive marketing of KT and research products” (M2, interview transcript).

Chapter 9

Conclusion and Implications - Ending with an Epilogue

9.1 The Comparative Case Study and Summary of Discussion

9.1.1 The Comparative case study. Apart from the “teaching” and “research” of HEIs, knowledge transfer is regarded as their “third mission” within the context of the higher education sector, particularly in the contemporary era of knowledge-based economy and society, to meet challenges of a complex and interconnected globalised world. A HK\$50 million fund from 2009-10 onwards has been allocated annually amongst the eight publicly-funded HEIs, aiming to enhance and broaden institutional capacity and endeavours in KT as well as to encourage reciprocal processes between HEIs and the society (UGC, 2014). In view of the importance of enhancing sustainability through KT from institutional initiatives and of HEI’s contribution to Hong Kong society, this comparative multiple-case study research attempted to investigate the extant KT strategies adopted and implemented by three publicly-funded small size HEIs in Hong Kong, especially after more than six years of funded KT initiatives and implementation. Under this contemporary education phenomenon, it aimed to derive an initial understanding about differences, similarities, and explore whether there are differences between strategies formulation, dissemination and implementation amongst various HEIs, inclusive of the KT agencies. The study expected that some sorts of KT models, based on the characteristics and patterns of KT strategy development among the cases, could be observed through the process of identification, categorisation and interpretative analysis by addressing the down-to-earth issues of KT formulation and implementation.

With regard to the comparative case study, the core research questions are set out as follows:

1. What kinds of knowledge transfer strategies have been planned and adopted by three selected higher education institutions?
2. How have the institutions disseminated and implemented the KT strategies?

3. What are the differences, similarities and individual characteristics of KT strategies amongst three HEIs?
4. Are there notable differences between strategy formulation, dissemination and implementation amongst three HEIs?

9.1.2 Summary of the discussions. In respect of my research has adopted multiple-analytical strategies throughout the chapters of study case report (i.e., Chapters 5-7) and cross-case analyses and comparative findings (i.e., Chapter 8), the overall profile of presenting the research findings and discussion were immersed with the research and the questions to be answered throughout these chapters. Henceforth, I have attempted to summarise the discussion in this sub-section as part and partial of the conclusion, particularly with reference from the RQs.

9.1.2.1 RQ1 - What kinds of knowledge transfer strategies have been planned and adopted by three selected higher education institutions? In order to substantiate what kinds of KT strategies have been formulated by the institutions as well as what has needed to be transferred under the formulated KT strategies, I employed the adapted TQTAP and the 6W-element of heuristic approach to search for KTS among the three cases respectively. A finalised total of 911 coded segments with 61 KTS related thematic sub-categories were generated from the empirical data into seven dimensions, of which six were basically applied to the three cases with the exception of the ‘protecting strategy’ (i.e., it is only applied to HKBU and EdUHK). Out of 911 coded segments, HKBU, EdUHK and LU had each constituted around 34% (i.e., 309), 42% (i.e., 381) and 24% (i.e., 221) of the total, whereas, 49, 38 and 42 KT strategies were coded and generated within the 61 consolidated KTS respectively. The formulated and implemented KT strategies by the three HEIs were consolidated and tabulated in Chapter 8 in Appendices 8.1 and 8.2 respectively.

Comparatively, priorities for the adoption of KT strategies as the core and focus areas of KT development by the cases were different aligning with their own underlining goals of KT in general.

Specifically, HKBU had to “match the needs of the community at large with its own strengths, to work in partnership with its members to proactively contribute to the community, and to enable KT as the third pillar of the University” (KTO/HKBU, 2016b) so as to adapt to the established development of TT and balance the needs of KT in the technology and non-technology areas (KTO/HKBU, 2012a). Henceforth, apart from the relatively intensive implementation strategy, such as entrepreneurial, partnership and impact assessment strategy, in different kinds of KT activities, the build-up of the KT environment in HKBU through institutional policy and the institutionalisation process became essential for the creation of an enabling environment for facilitating KT development in the University. These may be associated with an overall progressive trend of HKBU’s KT development over the years in which a need-to-practical basis of KTS development in HKBU was established.

In EdUHK, KT is underpinned by some key goals guiding the formulation of KT strategies as well as the development and organisational of KT activities in the University (EdUHK, 2016a). The key aims are closely linking research and teaching to KT while contributing the development of the University and the wider community through intellectual capacity and capital development, from which, the ultimate goal is to serve the local and regional developmental needs in education and its related areas (EdUHK, 2016a). Henceforth, KT strategy in applied research, partnership and with impacts were regarded as the core areas of KT development associated with policy support and reinforcement through capacity building, engagement and an enabling environment. Needless to say, emphases of capacity building strategy were on the development of the University and its staff on KT in terms of applied research capacity in intellectual capital development as well as to build up the staff’s capacity in organising and implementing KT in collaboration with community partners (EdUHK, 2010). Similarly, related strategies of incentive engagement and enabling environment also put emphases on the transfer of university-owned knowledge and the research that impacts the

community (EdUHK, 2009). These may be reflected on a priority-to-enhancement needs basis of KTS development in EdUHK.

For LU, a total of 3 units, namely APIAS, OSL and ORS, within the University have been involved to coordinate, operate and/or implement KT over the 6-reporting years of KT funding, amid various key objectives of KT emphasised at different stages of KT development. Initially, APIAS aims to build up a “Lingnan’s model for KT programs” while OSL emphasises the engagement of academic staff and students through Service-Learning (S-L) and applied research knowledge to serve the community. Under the enhanced KT structure at the institute level, the ORS attempts to encourage and engage academic and teaching staff to participate in and serve through KT to the community while the ultimate purpose of KT is to exert considerable impacts on the social concerned issues and benefit a specific target group in the society. Therefore, the overall development of KT and the adopted and implemented strategies were seen to fall into a disperse pattern of development. In the early years in 2009-10 to 2011-12, APIAS emphasised on KT implementation and formulation strategy, in particular, of thematic-based knowledge and Lingnan’s KT model building. In 2012-13, OSL focused on the application of S-L as a two-way means of KT between the University and the community, of which it was more of implementation strategy. From 2013-14 to 2014-15, ORS put emphasis on KT engagement strategy through incentive and other engagement strategies. These may be reflected on a priority-to-implementation needs basis of KTS development in LU.

Although the three cases regard KT as the “third pillar/mission” of the university that all members are encouraging to serve and contribute the society through KT as in terms of teaching, research and community services, the types of formulated KT strategies were similar (e.g., incentive or capacity building strategy) while the overall emphases and individual functional focus may be different. One of the typical examples is the adoption of an incentive strategy through fiscal or resources reward like KT fund among the cases. HKBU’s funding support for KT initiatives encourage

collaboration between academic faculties and community partners for mutual benefits. EdUHK's KT Awards for providing resources in reinforcing and supporting KT initiatives planning and implementation with university-owned knowledge, technology, and research findings. LU's KT Project Fund aims to engage academic staff for KT participation.

9.1.2.2 RQ2 - How have the institutions disseminated and implemented the KT strategies?

By revisiting RQ2, this could be with regard to the ways (i.e., in what ways) adopted by the institutions to disseminate the formulated KT strategies and the key stakeholders (i.e., to/with whom and by whom) involved during the implementation process under the 6W-element of Heuristic Approach. Basically, the dissemination channels of KT strategies among three cases were similar, for instance, through the roles and functions of KT organisations, KT related websites, KT staff, publications and multi-media, notwithstanding that the types and approaches of the dissemination channels were likely differences to a certain extent. Taking KT staff as example, HKBU encourages participation thru KTP Seed Fund and MPCF in community projects as incentives for community engagement; EdUHK promotes strengths, research potential and impacts for brand building as its marketing strategy, and LU applies a Service-learning model to promote and implement KT among academic staff. Similarly, there were more commonalities among the cases in the 'to/with whom and by whom', of which this element involved the key internal and external stakeholders (e.g., academia, KT staff, university students, and community stakeholders) during the implementation process of KT strategies while their major targets were likely to be different in respect of different emphases of KT areas. For example, the health sector is one of the major targets of HKBU with regard to its professional and innovation-based health related knowledge. The major target sectors of EdUHK are the teaching profession and education field as regard to its emphasis on education and related knowledge. Regarding LU, its uniqueness in liberal arts education and KT through community services are mostly targeted at the NGOs and the needy communities.

9.1.2.3 RQ3 - What are the differences, similarities and individual characteristics of KT strategies amongst three HEIs? To address RQ3 and RQ4 and to ensure quality assurance as in terms of construct validity, external validity and reliability in comparative multiple-case studies, the six components of research designs were employed commensurate with multiple-analytic techniques. These facilitated for the implementation of research through data collection and analyses for concluding the findings, generalisations and replications from the study. Differences, similarities and individual characteristics of KT strategies, and notable differences between strategy formulation, dissemination and implementation amongst the three HEIs were drawn through techniques of cross-case synthesis and comparative and interpretative analyses.

By adoption of the thematic-based analysis and comparative interpretation of thematic dimensions and sub-categories of KT, strategies were denoted with different degrees of code frequency among the three cases, various types of tables were constructed for category-based analysis, thematic matrix interpretation and cross-case synthesis. Consequently, one of the observable differences was the extreme contradiction between the priority level of entrepreneurial and KT model building strategy in HKBU and LU while relatively moderate for EdUHK. The contradictory findings were likely in relation to their unique background, stage and/or strength of research and KT development before and during the commencement period of the KT recurrent funding initiatives. For details, please refer to the section of “Comparing Differences of Sub-category of KTS” in Chapter 8.

Of the implemented KT strategies presented in Table 8.1 in Chapter 8, a general observable similarity among the three cases seemed to commonly adopt the same or similar strategies during the course of KT development while the order of priorities of each case has its own uniqueness and characteristics. For example, engaging staff and/or student participation in KT encountered similar difficulties was essential and most likely through an incentive strategy, such as fiscal and human resources management, despite the incentive mechanisms were different as in terms of objectives.

Moreover, an asymmetrical ‘T’ shape of three cases’ sub-category of KT strategies was outlined with reference to the coded frequency in Table 8.1. By interpretatively analysing the individual characteristics of each case according to the outlined ‘T’ shape through the LTC Model perspective (Chung, 2013) and the context of case study reports, there were largely three kinds of KT development stages and three types of models driving KT development for each case. Commensurate with HKBU’s highly institutionalised process and KT strategies, it was largely at the “maturing stage” of the KT development process and under a relatively solid guidance through an institutionalised policy-driven model of development. For EdUHK, it was experienced through a developing process of advancing needs for a stand-alone university. It was basically at the “beginning stage” of the KT development process whereby its KT strategies were closely aligned with the capacity building process and interrelated strategies. Its KT development was guided by a capacity-enhancement driven model of development. For LU, it mainly concentrated on the KT strategy of ‘KT model building’ and its associated ‘KT impact’; it was fundamentally at the “developing stage” of the KT development process particularly for establishing a “Lingnan’s model for KT programs” (LU, 2010). It was observed that LU’s KT development was closely associated with LU’s mission-vision and its motto of “Education for service” and underlined by each unit’s mission and/or objective agenda on KT. Henceforth, LU was guided by a mission-vision driven model of KT development.

9.1.2.4 RQ4 - Are there notable differences between strategy formulation, dissemination and implementation amongst three HEIs? To address RQ3 and 4, a reconstructing technique of the 6W-element of heuristic approach was employed by interpretation and comparison of the aggregated findings of the three cases. These were in terms of ‘differences, similarities and individual characteristics of KT strategies’ (RQ3) and of ‘notable differences’ in ‘why (i.e., rationale of KT)’, ‘in what ways (i.e., core KTS)’, ‘what to be transferred (i.e., KT areas)’, and ‘to/with whom and by whom (i.e., internal/external stakeholders)’ (RQ4).

The notable differences in respect of ‘why KT’ among three cases are comparatively the emphases and their orientations were different with regard to distinguished characteristics for individual context of historical background, vision-mission, and stages of KT development. As regards HKBU, it was relatively holistic in R&D, TT and KT with broad-based, creativity-inspiring and whole person education whereby the emphasis involved people/participant-element with professional customer-orientation. EdUHK, in contrast, was comparatively fresh in R&D and KT with vision-mission of education for capacity building and transformation whereby the emphasis involved capacity/transformation-element with functional orientation. Regarding LU, it explicitly encouraged R&D and KT through services with vision-mission of liberal arts oriented and Education for Service whereby the emphasis involved KT effectiveness-element with practice and outcome orientation.

The 6W-element of ‘In what ways’ associates with the dissemination of KT strategies, which implies the ways adopted by the institution in order to disseminate the formulated KT strategies as well as involves the core KT strategies and possible channels of dissemination for each case. On the whole, the dissemination channels of KT strategies among three cases were similar, for instance, through KT related websites, publications and multi-media, notwithstanding that the types and approaches of the dissemination channels were likely differences to a certain extent. The notable differences were the institutionalised level of the official KT website as well as the KT related publications and electronic newsletters at the university level were comparatively quantified and diversified in HKBU than in EdUHK and LU.

The 6W-element of ‘what to be transferred’ correlates with the ‘formulation of KT strategy’ from which the ‘what-element’ referring to the KT areas with explicit and/or tacit knowledge while proposition and procedure are specific areas of policy-based and/or technical-based knowledge. Despite the fact that the three cases commonly emphasised research and professional based along with university-owned knowledge with relevant impacts as fundamental to the KT areas, the notable

differences were aligned with the balance level of development between technology and non-technology areas of KT. For HKBU, both types of knowledge were transferred and developed in a more balanced way with regard to its curriculums and research in both areas while EdUHK was comparatively less and developing in technology KT, and LU only focused on its tradition of liberal arts curriculum and education.

Lastly, there were more commonalities among the cases in the ‘to/with whom and by whom’, of which this element involved the key internal and external stakeholders (e.g., academia, KT staff, university students, and community stakeholders) during the implementation process of KT strategies. However, the major target sectors were varied among the cases, particularly in respect of each specific KT area was different. For example, HKBU’s professional and innovation-based health related knowledge would probably target people and/or organisations from the health sector while EdUHK’s major target sectors were both teaching profession in specific and education fields at large. Regarding LU, its uniqueness in liberal arts education and KT through service-learning or community services mostly targeted the NGOs and the needy communities.

9.2 Research Findings and Literature Relevancy

Fundamentally, the research questions and the adopted multiple-analytical strategies immersed throughout the chapters of study case reports and comparative analyses were essential guiding frameworks for deriving the findings and conclusions of the multiple-case study research, of which they were summarised in the previous section of “Summary of the Discussions”.

In brief, a total of 61 consolidated KT strategies were selectively formulated and implemented with distinguishing differences and overlapping similarities by the three cases while ways of disseminating and implementing KT strategies adopted by the cases had significant similarities rather than differences. However, types and approaches of the dissemination channels and major targets of KT were likely differences to a certain extent. Moreover, priorities for the adoption of specific KT

strategies as the core and focus areas of KT development by the cases were different aligning with their own underlining goals of KT over the years. These different sorts of prioritised KT strategies and the notable differences among the three cases comparatively emphasised their orientations / perspectives were likely different with regard to their distinguished characteristics for individual contexts of historical background, vision-mission, stages of KT development, and inclining model of KT.

In sum, HKBU was likely to be at the maturing stage of KT development commensurate with its highly institutionalised process and KT strategies with relatively intensive implementation strategy, which was under a relatively solid guidance through an institutionalised policy-driven model of development. EdUHK, in contrast, was probably at the beginning stage of its KT development depending much on various interrelated KT strategies facilitating for capacity building and enhancements of academia in specific and the University in broad-spectrum. It was observed that EdUHK's KT development was closely aligned with the capacity building process and interrelated strategies that its KT development was guided by a capacity-enhancement driven model of development. For LU, it was fundamentally at the developing stage of KT development associated with LU's mission-vision and its motto of "Education for service". Through its emphasis on the implementation of 'KT model building' with 'KT impact' strategy, LU was guided by a mission-vision driven model of KT development.

The observed comparative findings with notable differences of similarities and dissimilarities of the formulated and implemented KT strategies among the three cases were possibly associated with different conceptual understandings of and perspectives on KT amongst senior management, KT administrators, academia, and/or experts/professionals. These were likely and partially in connection with what the literature reviews revealed in this research study. In essence, KT may possibly be interpreted from a policy perspective, i.e., KT as a policy, of which KT is mission, objective, strategy and/or project-oriented and developing at the macro-meso-micro level. Macro, hereabouts, perceives

from the policy and conceptual level guiding for the intra- and/or inter-organisation management plans for the implementation of initiatives and/or activities at the down-to-earth level. Besides, KT may also be viewed from an implementation perspective from which KT could be regarded as a means to an end wherein activity and/or functional-oriented emphasis is likely to be developed at the micro level. From the organisation perspective, KT could be aligned with a sharing culture whereby management and transfer process orientation are possibly dominated at the meso-micro level. Of the developmental perspective, KT as a trajectory at the micro level may be interpreted as stage and/or strategy development-oriented in nature.

Regarding the KT conceptualisation and perspective of respective cases, HKBU considers KT as the third pillar of the University whereby academic staff and students are engaging to commit in KT through collaborative partnerships, technology transfer and entrepreneurship, from which knowledge, research and innovative technology could be transferred for achieving empowerment and significant impact in the community (KTO/HKBU, 2016h). These involved KT development between the macro-meso-micro level, i.e., comprehensive and institutionalised structures and procedures at the policy/macro level, KT promotion and coordination through the institutionalised KT office at the meso level, and intensive implementation of KT initiatives at the micro level, whereby its overall concepts on KT aligning with implementation thru policy perspectives. HKBU's well-balanced and flagship schemes, like the KT Partnership Projects, Innovationem Award, Matching Proof-of-Concept Fund, and Business Entrepreneurship Support and Training Programme, are linked with various implementation strategies. These strategies support policies at the institutional level for establishing an enabling environment to engage and facilitate staff's KT participation and implementation.

EdUHK defined KT as services through applied research and KT initiatives in which it is a "two-way flow of academic and professional knowledge, ideas, techniques, and expertise between the University and the broader community in education and related areas" (EdUHK, 2016a). It regarded

KT as the third pillar to research and teaching, underpinning by the key goals of closely linking research and teaching to KT contributing for the development of the University and the wider community through intellectual capacity and capital development. The ultimate goal is to serve the local and regional developmental needs in education and its related areas (EdUHK, 2016a). These, indeed, involved KT development from the macro to meso and micro level. That explicitly emphasised the KT objectives from the institution's policy level through enhancements of KT organisation and its leadership, policy and management functions in KT (EdUHK, 2010a) as well as the University's strategic plan facilitating for KT capacity building, implementation, and culture development pursuing the KT objectives. The establishment of the KT Task Force, KT Unit and appointment of KT Director were to strategically provide administrative and KT-related promotion support as well as to enhance the institutional policies and initiatives on KT (EdUHK, 2015b). Its overall concepts on KT emphasising the University's KT objectives through policy perspectives. EdUHK's incentive strategies, such as the President's Award for Outstanding Performance in Research and KT Matching Grant Scheme, were embedded with the criteria of reinforcing KT participation with university-owned knowledge, technology, and research findings as well as research and quality enhancements. These were, indeed, supported by the institution policies associating with strategies of enabling environment, engagement, implementation and capacity building.

LU views KT as a University-wide endeavour, from which, impacts to the community from research and professional knowledge could be achieved through the engagement of academics in KT as well as through the established platforms and identified opportunities (LU, 2016j). The ultimate purpose of KT, to exert considerable impacts on the social concerned issues and benefit a specific target group in the society (LU A4's interview transcript, August 5, 2015), notwithstanding that the key objectives of KT in LU were various at different stages of KT development over the 6-year of KT funding initiatives. Moreover, the refined vision and mission statement of community engagement and

encouragement of faculties and students contributing “to society through original research and KT” (LU, 2015b) was indeed echoing and explicitly articulating the values embed in the liberal arts education and the “Education for Service” at large (Lingnan, 2009). These missionary values have already been embedded and articulated through community services and Service-Learning before and after the KT funding initiatives even though KT coordination and development were taken up in turn by three units over the years without any designated KT office/task force. These, indeed, involved KT development through the guidance of the missionary values and revamped mission statement at the policy (macro) level to the KT endeavour implementation (micro) level. Actually, under LU’s long tradition of “Education for service” and “Community Engagement” (LU, 2016b), APIAS attempted to develop LU’s systematic and effective KT operative model with specific thematic knowledge conducted through train-the-trainer workshops and community education at the individual unit level in the first three years of KT development for echoing these missionary values (LU, 2010, 2011, 2012). Similarly, OSL, as another unit, emphasises the engagement of academic staff and students through S-L and applied research knowledge to serve the community (LU, 2014) in the 4th year of KT operation. In the 5th to 6th year, the ORS, who was under the enhanced KT structure at the institute level for taking up a central coordination and consolidation role, attempted to encourage and engage academic and teaching staff to participate in and serve through KT to the community (LU, 2014). Its overall concepts on KT guided by the encapsulation of missionary values at the university level aligning with implementation thru policy perspectives, despite the emphases of KT strategies and of the roles were different among the units over the years of KT development. No matter, the KT model building and thematic strategy emphasised by the APIAS, the S-L and applied research strategy endorsed by the OSL, or the incentive and engagement strategy implemented by the ORS, LU, as a Liberal Arts University, had its unique characteristics to implement KT and contribute to the society through different models of KT. The distinctive characteristic of KT development in LU was obviously

transforming from an individual basis of KT implementation to the centralised coordinating process of strategy formulation, dissemination and implementation.

Based on the initial reviews, discussions and analyses between the research findings and literature review, there seems to be different KT conceptualisations (e.g., KT as third pillar, services and/or university-wide endeavours), perspectives (e.g., policy or implementation through policy perspectives) and strategies (e.g., institutionalised, capacity building and/or KT model building strategy) among HKBU, EdUHK and LU. These are notwithstanding that the core process of community engagement between academia and community stakeholders as well as the ultimate goals of contributing to the society through different expertise and/or research impacts are similar. Nevertheless, apart from different associated contexts that may result in different perspectives and interpretations on KT, the differences among the three cases within the HE context were possibly related to different development stages (e.g., beginning, developing and maturing stage) of KT and foci of strategies (e.g., capacity building, model building and institutionalisation strategy), irrespective of the co-existence of different KT conceptualisations and perspectives. Supported by the collected data of evidences and analyses, the in-depth case study revealed a development trajectory of each case whereby the developmental stages of respective HEIs seemed to have a natural pattern and trend of emphases on specific KT strategies accommodated to one's own purposes, development needs and status at that particular stage of KT development.

9.3 Research Significance

In the Introduction chapter, the significance of the research study was stated while the findings were summarised, discussed and concluded in this chapter. The research significance results from the adopted methodology, multiple-analysis, and the established understanding of the differences, similarities and characteristics of KT strategies formulation, dissemination and implementation among the HEI cases as in terms of different development stages and driven models of KT strategy emphases

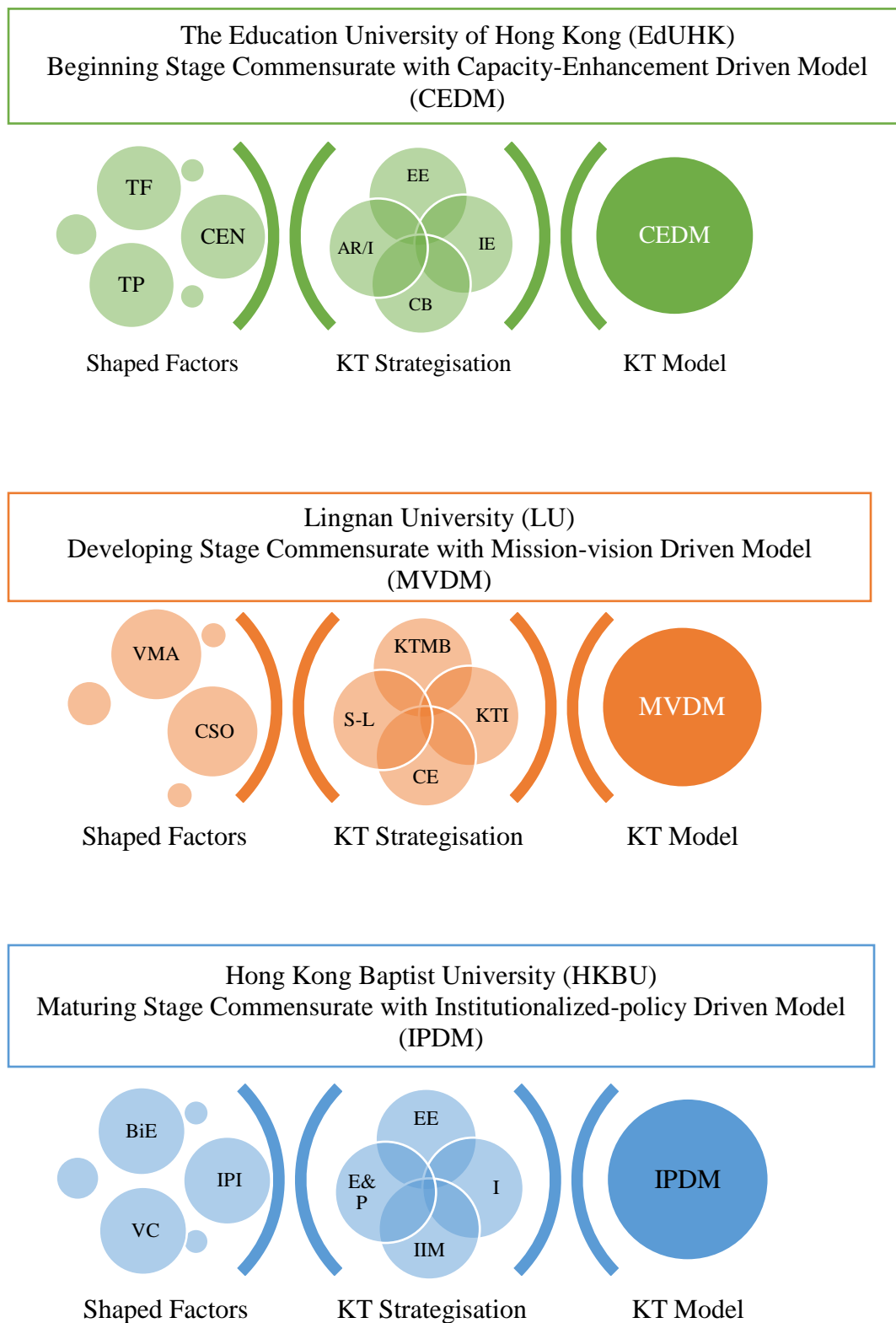
were threefold:-

9.3.1 Conceptualising developmental KT models for theoretical and practical applications.

- 1) KT as the “third mission” of HEIs becoming a key aspect of institutional development whereby KT strategy formulation and implementation are the core consideration of HEIs with regard to their understanding and assessment of their own stage of KT development, especially during the development process of “institutionalisation” of KT. The observed and distinguished KT development stages associated with different KT strategies and driven models may induce a frame of reference and inspire status assessment on KT development for other HEIs. These findings may also have implications to broaden the international literature on the interpretation of the “third mission” (e.g., a range of academic outreach strategies as in terms of Triple Helix or UIC) as dynamic and diverse instead of a static process with regard to the developmental perspective of KT and its strategies. To reiterate that KT, indeed, involves the core elements of policy and development as in terms of missions, objectives, strategies, initiatives as well as connection with internal and external stakeholders facilitating the completed KT process, such as knowledge creation, management, transfer/exchange, evaluation, and evolution, to be actualised.
- 2) With a lack of relevant studies in KT strategy in relation to Hong Kong, this study has contributed the field of local higher education and comparative education through a comprehensive and systematic literature review on KT and its strategies as well as the adoption of comparative multiple-case study with multiple-analytic techniques. Subsequently, the identification of different development stages and driven models of KT strategisation associated with policy and/or implementation perspectives on KT have attributed alternative understandings to the literature of KT conceptualisation and interpretation from the developmental perspective for differentiating differences in KT

conceptualisation, perspectives and strategies among different HEIs. Awareness and assessment of one's own stage of KT development may facilitate HEI's concentration to formulate and implement different strategies with their own emphases for achieving their particular goals. Notwithstanding that policy, implementation and/or organisation perspective formed as the fundamental interpretation basis of HEIs at large.

- 3) Simultaneously, different characteristics and shaped factors of each driven model of KT strategisation, namely as Institutionalized-policy Driven Model (HKUB), Capacity-enhancement Driven Model (EdUHK), and Mission-vision Driven Model (LU), were identified with reference from the developmental perspective of KT as in terms of different development stages or trajectories of individual HEIs and derived from the analyses. Subsequently, results of the observations and analyses through the in-depth comparative case study facilitated a process of model-building towards the conceptualisation of a Developmental KT Model with different stages of development and KT strategisation. This process, supplemented with three diagrams of the identified models (see Figures 9.1a - c), may help conceptualise the developmental KT models for theoretical and practical applications in alternative contexts.



Figures 9.1a-c. Conceptualisation of the Developmental KT Models.

In brief, each identified KT model was derived from the developmental process perspective of the Linear-to-Cyclic (LTC) Model and results of the comparative analyses commensurate with each particular characteristic in KT strategisation and each shaped factor.

The Education University of Hong Kong's Capacity-Enhancement Driven Model (CEDM) is identified and connected with substantial needs in enhancing its capacity in research and KT aligning with the "beginning stage" of the KT development process. EdUHK has to ask "why" research and KT with regard to its established mindset of teacher-education orientation and assess "where" its development status was both in research and KT due to its inadequacy in research and transformation needs into a university. Its particular KT development status and characteristics in KT strategisation, indeed, have been associated with and shaped by the interrelated factors of "Training Focus (TF)", "Transformation Process (TP)" and "Capacity Enhancement Needs (CEN)". In general, the case has a traditional, strong and focus base of teacher profession training in its historical development while it encounters the transformation needs in multidisciplinary research and KT capacity enhancement process for developing into an education-focused and multidisciplinary university with a strong capacity in research and KT. Henceforth, these factors drive the case with particular characteristics in the process of KT strategisation, including enabling environment (EE), incentive engagement (IE), capacity building (CB), applied research and KT impact (AR/I), for capacity enhancement in research and KT.

Lingnan University's Mission-vision Driven Model (MVDM) is identified and connected with the immersed tradition of liberal art education, "Education for service" and the newly modified vision of "community engagement" manifesting through community services and service learning for fostering social care and responsibility. It was fundamentally at the "developing stage" of the KT development process. With its strong missionary and rich experience to serve the community through their own knowledge and built-in service models, it has always attempted to explore (i.e., know how) through experiential programme implementation for enhancing KT effectiveness (e.g., Service Learning and Research Scheme and Train-the-Trainer Model). Its particular KT development status and characteristics in KT strategisation, indeed, have been associated with and shaped by the interconnected factors of "Vision-Missionary Alignment (VMA)" and "Community Service-oriented (CSO)". Generally, the motto of "education for service", the purposes of liberal arts education, the newly modified vision of "community engagement", and the mission of "encouraging faculty and students to contribute to society through original research and KT" (LU, 2016b), which

are embedded with the factors of VMA and CSO, shed light on the formulation of specific KT strategies for achieving the embedded purposes. Therefore, these factors drive the case with particular characteristics in the process of KT strategisation, including KT model building (KTMB), community engagement (CE), service learning (S-L) and KT impact (KTI), ultimately for establishing theoretical and systematic based model to enhance the effectiveness of KT to the community.

Hong Kong Baptist University's Institutionalized-policy Driven Model (IPDM) is identified and connected with its visionary long-term commitments in KT through highly institutionalised process and infrastructure embedding with the “maturing stage” of KT development process. With its established experience in technology transfer and the highly institutionalised status, it is matured enough to have the experience to “know what” they implement to actualise the missions of KT. Its particular KT development status and characteristics in KT strategisation actually interlinked with and shaped by the interrelated factors of “Built-in Experience (BiE)”, “Institutionalized Process & Infrastructure (IPI)” and “Vision Commitments (VC)”. In fact, the case has already built-in experience in technology transfer before KT funding initiatives while it has gone through a highly institutionalised and revamped process guided by the decade strategic plan with long-term commitments for KT development. Therefore, these factors drive the case with particular characteristics in the process of KT strategisation, including enabling environment (EE), institutionalisation (I), institutionalised ‘incentive’ mechanisms (IIM), and entrepreneurial and partnership (E&P), facilitating for systematic strategy planning and implementation for achieving its KT vision and mission.

This section shows each model in a diagram with its particular shaped factors and characteristics in KT strategisation associating with the developmental perspectives of “beginning, developing and maturing” stage of KT development. The purpose is to assist in conceptualising the identified KT models to interconnect with the perspective of developmental KT models for theoretical and practical applications in different contexts. The connectedness between the models of different developmental stages are likely related to the shaping factors and characteristics of KT strategisation. That is any HEIs who are at the beginning stage of KT development would likely be professional training-based with a lack of research and KT experiences. Once they have experienced transformation from practice-oriented to research-oriented and participated in KT, they may attempt to explore different means or models of KT for effectiveness enhancement. After or concurrently enhanced in

research and KT, they might become mature in institutionalising specific KT strategies, e.g., institutionalised KT infrastructure and incentive mechanisms, for enabling and engaging more academia and/or students to participate in KT through various institutionalised ways of implementation.

9.3.2 Methodological and quality significance. In addition, the findings were established through the comprehensive and systematic methodology process of comparative multiple-case study with multiple-analytic techniques, inclusive of the adopted method of a systematic literature review. These may derive methodological significance and provide alternative insights in the field of comparative education and post-graduate research on one hand. On the other hand, the overall research designs, inclusive of the logistic plans and procedures for data collection and of the logical analysis process for findings interpretation, attempt to address and assure the overall quality of this qualitative multiple-case study research. Basically, the findings derivation process was closely aligned with the research methodology resulting in the establishment of reliability, construct and external validity for the research. Through the practical guidance from the pre-established case study protocol for data collection and multiple-case study report, logistic procedures of systematic data collection and logical process of a step-by-step comparative analysis within the descriptive framework, the study quality was assured. Assurance was in terms of procedural consistency with repeatable possibility (i.e., reliability), measurement accuracy with triangulated evidence (i.e., construct validity), and “analytic generalisation” through analysis replication from the descriptive framework for the three cases (i.e., external validity) (Yin, 2014, pp. 237-238).

9.3.3 Funding policy implications. Apart from the prevailing policy and/or implementation perspective, the developmental perspective of KT as in terms of different development stages or trajectories of individual HEIs was observed and derived from the analyses. These may have implications on the reassessment of the HK\$50 million each year KT funding allocation mechanism by the funding bodies (e.g., UGC) as well as reconsideration of extra grants facilitating for KT capacity building for those at the beginning and/or developing stage of KT development. Instead of adopting an apparently standard formula of KT funding allocation in proportion to the scope/scale of UGC funded institutions (e.g., KT funding amount in proportion to earmarked research grants among the eight universities – please see comparative figures in Table 4.1 in Chapter 4), a rationally practical and facilitating mechanism for allocating resources and assessing outcomes with reference to the development stages of individual HEIs is essential and appropriate for the overall

strategic development of KT in the HEI sector. This alternative funding mechanism is, indeed, cohered with one of the UGC's rationales of funding usage for "building up institutional capacity" (UGC, 2016).

9.4 Conclusions

9.4.1 Recommendations/implications for future research and action. The observed differences and characteristics of KT strategies formulated and implemented by the HEI cases are possibly aligned with different stages of KT and strategy development, notwithstanding that there may have different KT conceptualisations, perspectives and associated strategies among the different HEIs. Henceforth, emphasising interpretation and assessment of the stages of KT development of individual HEIs by respective institutions and/or funding bodies may underpin their policy and/or implementation perspectives which have become practically aligned with their development status and needs as in terms of timely strategy formulation and implementation as well as funding allocation. Therefore, it is recommended to develop a developmental process-based model integrating multiple-interpretation perspectives, i.e., policy, implementation and organisation perspective, facilitating for a practical and comprehensive analysis and derivation of KT strategies in realising different objectives, roles and strengths of individual institutions. Indeed, KT involves the core elements of policy and development as in terms of missions, objectives, strategies, initiatives as well as connection with internal and external stakeholders facilitating the completed KT process, such as knowledge creation, management, transfer/exchange, evaluation, and evolution, to be actualised. Some sorts of alternative research studies with relevant methodologies are suggested to be conducted for building such model, catering for the comprehensive nature of KT as a concept, mission, policy, process, endeavour, and so on.

9.4.2 Limitations of the study. As researchers, we definitely need to be highly sensitive in addressing ethics of any research, particularly involving human subjects or living creatures that might be physically, psychologically and/or socially affected. Henceforth, we always need to strike a balance between the protection of research subjects and the freedom of research plus its value. One of the limitations of my research has emerged with the issue of case identities, of which I came across a request from three of the seven interviewees of the three institution cases that individual identity includes the name and post, and should not be revealed. Despite Yin (2014, p. 197) has mentioned that "the most desirable option is to disclose the identities of both the case" (i.e., HEIs as cases in my research) "and the individuals" (i.e., interviewees from the HEIs) so as to lead the case(s) to become tractable

and invaluable for further research study, not to mention the simplicity in processing the case report with transparency. Although consents to reveal the entire cases (i.e., HEIs) and the four out of seven interviewees' identities for comparisons were obtained, I still needed to adopt an anonymity strategy for all individual participants (see "ethical considerations" in Chapter 4 for details). This may not eliminate those essential background materials of the study cases (Yin, 2014) and still can facilitate constructive comparisons amongst the participating institutions and cross-reference in future study before the interviews. Nevertheless, certain limitations may be imposed on the process of case report composition since all signs or related information that might reveal the real identities must be carefully scrutinised and converted into anonymity (Yin, 2014).

In addition, I adopted an adapted thematic qualitative text analysis process in my research, in which it involved extensive work in interpretation and coding by only myself as the sole researcher of this study. This becomes another limitation with regard to Kuckartz's (2014) suggestion that it is not preferable to conduct coding by one person only because the quality and reliability of the coding would only be achieved by multiple coders whom have processed with independent coding, discussion and consensus. In order to address the limitation, I have attempted to derive and apply an overall coding strategy and adapted TQTAP with regard to the systematic, rule-governed and framework-guiding principles so as to eliminate the limitation to a lesser extent.

Furthermore, I attempted to cite the thematic summary interpretively, summarised and derived from the managements' coded segments of interview transcripts under the MTC of planned and adopted KT strategies as well as ways to disseminate and implement KTS amongst the three cases as a roundup in each case report. Nevertheless, the roundup from the LU's management and policy perspectives on KT strategy formulation, dissemination and implementation may not entirely cover the whole story of the LU's case with details, particularly when this case experienced a transition of KT coordination role and responsibility among the three units in LU.

Under the circumstances, the study may have become less bias and more comprehensive with additional interview procedures with all key stakeholders, such as academic staff, university students and community partners, for triangulating with the key informants from both management and administration side of the institution. However, apart from consideration of the limitations on the scope of study and available resources, my alternative insight is that as an explorative instead of explanative or evaluative case study,

may not necessarily include third party informants for counter confirmation.

Lastly, limited timeframe and resources to conduct the research are natural factors in reality that the comprehensiveness of the research, in particular, of the process of non-exhaustive type of relevant data collection, coding-recoding, and analysis from multiple perspectives.

9.4.3 Epilogue of the research. My research study was deliberately triggered by my story of a photographic image conceptualisation and strategy of understanding more in-depth story through the advanced derivation of a set of strategic plans. Besides, personal knowledge, beliefs, past and present experiences form our unique perspectives for interpretation of any encountered objects or issues, which are essential, indeed, to cover-up the story from becoming rich in content and context. These are the key elements associated with my perspective on the contemporary education phenomenon of KT, which is the “third mission” of higher education institutions. Under this specific conceptualisation of KT, a bundle of inquiry questions were derived from the core query of how the “third mission” could be achieved by the HEIs at the policy/institutional and project/academic-based level? That, indeed, at least implies the involvement of senior management at the policy/strategy formulation and institutional-wide implementation level, and of front-line administration and/or academia at the project/academic-based implementation level.

Respectively, the comparative multiple-case study with qualitative method of inquiry into the KT strategies was strategically adopted as the research methodology for investigating the extant KT strategies within the context of the higher education sector from the policy, implementation and development perspectives. Subsequently, there probably have been different sorts of strategies embedded with different aims and functions required to be employed by the study cases, for example, to engage in KT participation, assure KT quality and/or deliver KT initiatives correspondingly. Henceforth, KT strategies did matter for the HEIs and different strategies were formulated and implemented by them in order to accomplish their KT missions, notwithstanding that the “missions” may have been differently interpreted, based on dissimilar perspectives. Taking the cases’ stances on KT as examples, KTO perceives KT as the third pillar of HKBU of which community needs match with the strengths of the university and proactively engage members of HKBU through partnership for contributing to the community are its mission of KT (UGC, 2016). Despite EdUHK “adopts KT as its third pillar in the university development”, it perceives KT “as the two-way of academic and professional knowledge, ideas...between the University and the broader

community” with the missions of closely linking research and teaching to KT while developing intellectual capacity and capital for contributing development of EdUHK, the community, education and related areas (EdUHK, 2016b). These explain why there have been different KT strategies derived and implemented at different development stages (e.g., beginning, developing and maturing) amongst the cases. In addition, similar strategies were engaged by the cases at different development stages with various purposes (e.g., incentives to enhance staff capacities for KT in EdUHK of its beginning stage and incentive strategies by HKBU for collaboration to enhance mutual benefits at its maturing stage).

Consequently, the study findings suggested that different kinds of KT strategies were formulated and implemented with different priorities over the years by the cases while ways of implementing KT strategies adopted by the cases were having significant similarities rather than differences. Besides, there were largely three kinds of KT development stages and three types of models (e.g., HKBU’s institutionalized policy-driven model, EdUHK’s capacity-enhancement driven model and LU’s mission-vision driven model) driving KT development for each case. The cases are, indeed, still having their own characteristics in KT strategies aligned with their conceptualisation and context of mission, strength, positioning, developmental stage, and inclining model of KT. As reflected in the annual reports of the HEIs, the “third mission” was, to a certain extent, progressively actualised in a relative effective consequence and university-wide participation through various KT strategies over the specified 6-years of KT development. It seems that dissimilar perspectives were observed and driven differences among the cases leading to the formulation and implementation of dissimilar/similar KT strategies with different emphases. Nevertheless, there may have different KT conceptualisations, perspectives and associated strategies among the different HEIs, I would argue that apart from different perspectives and associated contexts (e.g., organisation or knowledge-based economy), the differences are possibly related to different stages of KT and strategy development. These sorts of preliminary concluding statements, however, may need to be further explored through an alternative research study with relevant methodology so as to substantiate it with proof of evidences. If it is accepted, this may become substantial for the funding bodies (e.g., UGC) to rationally and practically allocate resources and assess outcomes with reference to the development stages of individual HEIs. As an example, the allocation of an extra KT capacity enhancement grant for those at the beginning stage, instead of adopting a standard formula of funding allocation and a universal format of quantified outcome-based assessment.

Echoing the photographic image of “exemplar moment of interactions” in Figure 1 in the Acknowledgments regarding the prologue, the image of the “London Eye” was taken by myself in London, United Kingdom in July 2012 and, is demonstrated in Figure 9.2 as the ending of the epilogue of this research. The image of “exemplar moment of interactions” derives association of the core elements of unique perspective forming by one’s own knowledge, beliefs and experiences for interpretation of any encountered objects or issues. Subsequently, the image of the “London Eye” was adopted here for reverberating the element of unique perspective whereby, this may be changed timely when the personal/organisational knowledge, beliefs and experiences are further evolved into another stage of development. Just similar to the experience of seating inside the capsule of the “London Eye” that viewing from the capsule of the Ferris wheel at different levels and times may have different views and experiences of the same encountered environment. Henceforth, different KT development stages of the HEIs matter, at least to a certain extent, for having different conceptualisations and interpretations on KT so that the senior management and academia/KT administrators may formulate and implement different strategies with their own emphases for achieving their particular goals.



Figure 9.2. The “London Eye” - Photographic image by Eddy Chung - author of this thesis (Chung & Tang, 2014).

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Appendices

Appendix 2.1

Identify Gaps via the Adapted APICOTS Framework

Selected Article	Aims (A)	Population (P)	Intervening Variables (I)	Comparative Variables (C)	Outcome (O)	Time-frame (T)	Setting (S)
1. Recognising "open innovation" in HEI-industry interaction for knowledge transfer and exchange (KTE)	To understand the importance of social processes in KTE between HEI-industry interaction	KTE practitioners between HEI-industry interactions	Traditional linear models of KT	Open / collaborative innovation	Address the importance of social processes in establishing & sustaining KT and exchange activities	A two-year period	Representatives of HEI, industry and policy makers in UK
2. An overview of strategic alliances between universities and corporations	Explore the essence of strategic alliances between universities and corporations	University-industry alliances	NA	NA	Highlight the major advantages of strategic alliances for academia and businesses	NA	Secondary data on academia and industry collaboration / alliances
3. Innovation and university collaboration: Paradox and complexity within the knowledge economy	Explore the nature and impact of HEIs on firms' innovation and growth within the open innovation system	Firms in three UK standard regions: the East of England, the North West and Wales	Formal models of interaction / collaboration	Informal linking for academia-industry collaboration	Informal links were shown to be just as important as formal links in terms of innovative outcomes for firms	8 months	Survey sample from the Financial Analysis Made Easy (FAME) database in UK
4. Multiple perspectives on the challenges for knowledge transfer between higher education institutions and	Examine from multiple perspectives that how KT policy is translated into practice within HEI contexts	University-based academic and non-academic participants and representatives of small firms	NA	NA	Four overarching themes are identified: (1) motivation and reward mechanisms; (2) process management and evaluation; (3) clustering and brokerage; and (4) trust and bridge building as the	1 year	Interviewees from academics, small business and non-academics – including intermediaries,



industry					key practices of KT which may promotes and/or hinders their development		brokers sectors who are situated within and outside university structures
5. Collaborative knowledge sharing strategy to enhance organizational learning	To access and suggest the ways and means to enhance a collaborative knowledge sharing culture in academic institutions	Academic institutions of India	Individual learning	Organizational learning	Adoption of collaborative knowledge sharing strategy by academic institutions is essential for the sustainability of any industry whereas there are five performance indicators which influence collaborative knowledge sharing culture	Not specify	Management Faculty of the University of Pune with special reference to information technology-related education
6. From policy to practice: Engaging and embedding the third mission in contemporary universities	How the third mission can relate to and reinforce the core missions of teaching and research	Contemporary universities in relation to the third mission	NA	NA	Respective mission can mutually reinforce through recursive and reciprocal development	NA	Secondary data in relation to third mission
7. The university role in the innovative leadership of small to medium sized enterprises	Explore the kinds of approach and leadership for academic practices to engage successful and sustainable partnerships with enterprises	“Best leaders” of the successful university outreach projects and their immediate staff	University Partnership for Benchmarking Enterprise and Associated Technologies (UPBEAT) approach	NA	Holistic and co-creating inter-disciplinary team-working was the norm for a “virtuous knowledge sharing” cycle	Not specify	Universities across Europe with successful university outreach activity
8. Capacity building for university-industry	To analyse the impact of academic capacity building on university-	Directors and staff at the Centers of Thai	Capacity / capability building	NA	A common set of critical success factors for university-industry-linkages	Not specify	Seven Centers funded under the HEDP



linkages in developing countries: The case of the Thai higher education development project	industry-linkages and to identify a set of critical success factors to guide improvements of university-industry KT in developing countries	public universities under the Thai Higher Education Development Project (HEDP)			has been identified		amongst Thai public or autonomous universities and research institutes
9. Private sector consultants and public universities: The challenges of cross-sectoral knowledge transfers	Study about the carriers of cross-sectoral diffusion processes and its limitations	Management consultants & academic personnel of higher education institutions	Neo-institutionalism	Systems theory	Findings show that the more market-centred a higher education system is, the more readily it accepts the economic rationale of the consulting business	Not specify	Management consulting in Germany, France, and the UK as the units of analysis
10. Business elites, universities and knowledge transfer in tourism	Examines the process of knowledge acquisition among ten British business elites and the (potential) contribution of universities to that activity.	Ten business elites purposively nominated by a senior representative of the Institute of Travel and Tourism	Absorptive capacity	Instrumental and communicative learning	Business elites tend to learn within their own 'meaning perspectives' that any successful engagements are in relation to the degree of influence on elites' learning approach; social networks play a vital role in transferring knowledge amongst business elites	Not specify	One set of actors (business elites) in relation to the tourism business who are having the same socio-cultural background

The above tabulated information is categorized as according to the adapted APICOTS Framework whereas it is drawn from the following article sources as relating to the numbering of the selected articles: 1. (Johnston, Robinson, & Lockett, 2010); 2. (Elmuti, Abebe & Nicolosi 2005); 3. (Howells, Ramlogan & Cheng, 2012); 4. (Lockett, Kerr & Robinson, 2008); 5. (Kumaraswamy & Chitale, 2012); 6. (Nelles & Vorley, 2010); 7. (Powell, 2012); 8. (Schiller & Brimble, 2009); 9. (Serrano-Velarde & Krücken, 2012); 10. (Thomas, 2012).



Appendix 2.2

Supplementary for Appendix 2.1 of the Identify Gaps via the Adapted APICOTS Framework

Authors	Terminology	Purposes of KT	Contexts	KT Conceptualisation (see footnotes) and Perspective	Connection with HEIs (Yes / No / In-between)	KT Strategies (examples)	Study Methods
Elmuti et al. (2005)	Knowledge transfer	Fundamental basis for strategic alliances between HEIs and industries	University-industry	Implementation perspective ¹	Yes	Partnership Collaboration	Desktop and case sample review
Lockett et al. (2008)	Knowledge transfer	Policy for driving competitive advantage	HEIs	Policy perspective ²	Yes	Innovation Commercialization	Case study
Schiller and Brimble. (2009)	Knowledge transfer	KT links university-industry for crucial catch-up of technology development in developing countries	University-industry	Implementation perspective ³	Yes	Capacity building Partnership	Case study
Nelles and Vorley (2010)	Third mission / technology transfer	Consider of third mission's relationship with and capacity to reinforce teaching and research	HEIs	Policy perspective ⁴	Yes	Institutionalization Cultural change	Summative analysis of overarching trends
Johnston et al. (2010)	Knowledge transfer and exchange (KTE)	KTE aims for internal and external flow of innovative knowledge accelerate collaborations and economic benefits between HEIs and industry	University-industry Open innovation	Implementation perspective ⁵	Yes	Open innovation Social interaction and networking	Case study
Thomas (2012)	Knowledge transfer / acquisition	KT for increasing competitive advantage of the industry by acquiring accessible, applicable and relevant knowledge	University-business elites	Implementation perspective ⁶	Yes	Capacity building Train-the-trainers	Interview and qualitative study
Kumaraswamy and Chitale	Knowledge sharing	KT through face-to-face communication, discussions	Academic institutions	Organisation perspective ⁷	Yes	Collaborative K sharing	Survey



Authors	Terminology	Purposes of KT	Contexts	KT Conceptualisation (see footnotes) and Perspective	Connection with HEIs (Yes / No / In-between)	KT Strategies (examples)	Study Methods
(2012)		and collaborative knowledge sharing culture enhancement could increase knowledge and enhance organizational learning					
Howells et al. (2012)	Knowledge transfer	KT through industry-academic collaborations for creating innovation impacts	HEIs and firms	Policy perspective ⁸	Yes	Partnership Collaboration	Survey
Serrano-Velarde and Krücken (2012)	Knowledge transfer / knowledge carriers / diffusion	KT here refers to the dissemination of private-sector rationales from the management consultants to the public universities aiming for transferring private sector knowledge and economic philosophy to expand and enhance their economic roles for the benefit of nation's economic well-being	Public HEIs and management consultants	Organisation perspective ⁹	Yes	Culture establishment	Interview and qualitative study
Powell (2012)	Knowledge transfer / exchange / “virtuous knowledge sharing”	KT is not just simply confined to the simply relationship of the traditional technology transfer but rather a closer relationships between universities and societal partners	Public universities and small to medium sized enterprises	Implementation perspective ¹⁰	Yes	KT engagement in local community	Case study

Note:

¹ KT involves activities of information exchange and knowledge creation facilitating for strategic alliances into consumption and advancement of intellectual resources.

² KT becomes an essential policy in HEIs, which involves knowledge creation, exploitation and adoption.

³ Improvements in university-industry (UI) knowledge transfers through academic capacity building and critical success factors on UI-linkages.

⁴ Apart from the missions of teaching and research, the third mission has been formalised as the socio-economic role of universities to engage economically and socially through third stream activities like technology transfer, applied research and commercial imperatives while it reinforces positively the missions of teaching and research for institutional development.

⁵ KTE activity and partnership between HEI-industry interactions could be enhanced through social processes, such as encouraging network participation and strengthening cooperation through capacity building.

⁶ Knowledge acquisition among business elites could be succeeded by influencing elites to approach their own learning through social networks while academic research by universities should be practical, simple and accessible for KT.

⁷ Knowledge sharing and the established collaborative sharing culture in an organisation could facilitate the extraction and creation of new knowledge, thus in turn enhance organisational learning from which human resource strategies, practices and knowledge management become essential.

⁸ Besides innovation, economic and social development, and spin-outs, KT becomes one of the key dimensions embedded within the policy profiles of universities who have undergone profound changes over recent years.

⁹ Changing of organisation roles of public universities towards increasing contribution to national economic growth becomes essential through the diffusion of private-sector and economic rationales from management consultants to academic management and senior administrative staff of public universities for the process of organisational change and privatisation.

¹⁰ Public universities are now having an expected role to creatively and constructively enable community stakeholders through different kinds of approach and leadership of academic practices facilitating for successful and sustainable partnership development.



Appendix 2.3

KT at a Glance in the Eight Publicly-funded Universities of Hong Kong

Name of University	KT Mission/objectives (Interpretation without Specific Mission/Objectives)	KT Conceptualisation (see footnotes) and Perspective	KT Strategies (Examples)	KT Orientation	KT Office	KT Related Office/Unit
CityU	(Ensures KT to society & enhances socio-economic well-being)	Implementation perspective ^{Note 1}	Commercialisation Entrepreneurship	Technology & entrepreneurship	KT Office	CUBIC CityUE
HKBU	(Empowerment Enhance impacts Facilitate KT via IPR management Enable student entrepreneurship)	Implementation thru policy perspective ^{Note 2}	Engagement Entrepreneurship	Technology, non-technology & entrepreneurship	KT Office	HKBU R&D Licensing Ltd
LU	(Build effective KT model Serve thru S-L and applied research Exert impacts Contribute thru original research and KT)	Implementation thru policy perspective ^{Note 3}	Engagement Incentive	Non-technology	-	ORS
CUHK	(Supports thru RKTs & promotes KT)	Implementation perspective - RKTs ^{Note 4}	Institutionalisation Protecting	Technology & entrepreneurship	ORKTS ^{Note 5}	-
EdUHK	Link research & teaching Develop intellectual capacity and capital Serve education development needs	Policy perspective ^{Note 6}	Applied research Capacity building	Non-technology	-	KT Task Force KT Unit
PolyU	Meets society's changing needs by advancing knowledge and frontiers of technology	Implementation thru policy perspective ^{Note 7}	Innovation Technology transfer	Technology & entrepreneurship	-	ITDO / IfE CDT / CPBE
HKUST	(Facilitates KT via university-industry collaboration, technology advancement, and entrepreneurial activities with significant impact to society)	Implementation perspective ^{Note 8}	Institutionalisation Implementation	Technology & entrepreneurship	-	VPRGO (KT infrastructure) RO / TTC EC / RDC
HKU	Making positive impact	Policy perspective - Third Pillar ^{Note 9}	Engagement Accessibility	Technology & non-technology	KE Office	TT Office Versitech

Key: CUBIC = CityU Business & Industrial Club; CityUE = CityU Enterprises Limited; ORKTS = Office of Research and Knowledge Transfer Services.

Sources: KT/KE/Research websites of respective universities (The Hong Kong Polytechnic University, 2016; The Hong Kong University of Science and Technology, 2013 & 2016; City University of Hong Kong, 2016; KTO/HKBU, 2016h; LU, 2016j; The Chinese University of Hong Kong, 2016; EdUHK, 2016a; The University of Hong Kong, 2010).

Appendix 2.3 (Cont'd)

Notes on KT Conceptualisation and Perspective of Respective Universities

Note 1 CityU confines knowledge as technology, know-how, expertise and skills whereby it is transmitted to society through a range of KT activities, such as technology licensing, intellectual property protection and management, business incubation, for enhancing social or economic well-being by the KT outcomes (CityU, 2016).

Note 2 HKBU regards KT as the third pillar of the University whereby academic staff and students are engaging to commit in KT through collaborative partnerships, technology transfer and entrepreneurship, from which knowledge, research and innovative technology could be transferred for achieving empowerment and significant impact in the community (KTO/HKBU, 2016h).

Note 3 LU views KT as a university-wide endeavour from which impacts to the community from research and professional knowledge could be achieved through the engagement of academics in KT as well as through the established platforms and identified opportunities (LU, 2016j).

Note 4 CUHK perceives KT is closely related with research that it begets new knowledge whereby its impact's maximization is achieved through effective KT to the wider community while the knowledge should be selectively protected as an intellectual property. Hence, "ORKTS administers five separate funds aimed at facilitating KT" (CUHK, 2016).

Note 5 In order to integrate knowledge creation and KT, CUHK has merged the former Research Administration Office and the KTO into the ORKTS in 2014 for providing supportive services and promoting KT development and transfer (CUHK, 2016).

Note 6 EdUHK defines KT as services through applied research and KT initiatives in which it is a "two-way flow of academic and professional knowledge, ideas, techniques, and expertise between the University and the broader community in education and related areas" (EdUHK, 2016a).

Note 7 PolyU's mission statement on KT are "to advance knowledge and frontiers of technology to meet the changing needs of society while innovation is to address people's unmet needs". Hence, PolyU defines KT as a knowledge development and transformation process ultimately for application and utilization. KT also serves as means to facilitate interactions, bonding relationships and enhance two-way communication between the University and the society through research and technological achievements (PolyU, 2016).

Note 8 HKUST confines KT as a built-in infrastructure, including RO, TTC, EC, and RDC, under VPRGO covering a range of KT functions, such as collaborative research, consultancies, IP management, professional training, and business incubation, for serving as the overall research support infrastructure (HKUST, 2016).

Note 9 HKU "defines KE as engaging, for mutual benefit, with business, government or the public to generate, acquire, apply and make accessible the knowledge needed to enhance material, human, social, cultural and environmental well-being. KE is a two-way process, and it not only includes technology transfer but also encompasses all disciplines, including the arts and humanities and the social sciences" (HKU, 2010).

Appendix 4.1

Ethical Approval from the Human Research Ethics Committee of EdUHK (HKIED)



8 May 2015

Mr CHUNG Yan Yi Eddy
Doctor of Education Programme
Graduate School

Dear Mr Chung,

Application for Ethical Review <Ref. no. 2014-2015-0302>

I am pleased to inform you that approval has been given by the Human Research Ethics Committee (HREC) for your research project:

Project title: An Investigation of Higher Education Institution's Knowledge Transfer Strategies - A Comparative Study of Three Institutions in Hong Kong

Ethical approval is granted for the project period from 8 May 2015 to 31 August 2016. If a project extension is applied for lasting more than 3 months, HREC should be contacted with information regarding the nature of and the reason for the extension. If any substantial changes have been made to the project, a new HREC application will be required.

Please note that you are responsible for informing the HREC in advance of any proposed substantive changes to the research proposal or procedures which may affect the validity of this ethical approval. You will receive separate notification should a fresh approval be required.

Thank you for your kind attention and we wish you well with your research.

Yours sincerely,



Connie Fung (Ms)
Secretary
Human Research Ethics Committee

c.c. Dr PARK Jae Hyung, Acting Chairperson, Human Research Ethics Committee



Appendix 4.2

Template the Consent Form and Information Sheet of Institution and/or Participants

Consent Form and Information Sheet for PARTICIPANTS

THE HONG KONG INSTITUTE OF EDUCATION
Graduate School
CONSENT TO PARTICIPATE IN RESEARCH

An Investigation of Higher Education Institution's Knowledge Transfer Strategies –**A Comparative Study of Three Institutions in Hong Kong**

I _____ hereby consent to *participate and/or reveal identity (*institution and/or interviewee's position) in the captioned research supervised by Professor Bob ADAMSON and conducted by CHUNG Yan-yi, Eddy.

I understand that information obtained from this research may be used in future research and may be published. However, my right to privacy will be retained if I have not given any consent to reveal my identity, i.e., my personal details will not be revealed.

The procedure as set out in the **attached** information sheet has been fully explained. I understand the benefits and risks involved. My participation in the project is voluntary.

I acknowledge that I have the right to question any part of the procedure and can withdraw at any time without negative consequences.

Name of participant

Name of Institution

Position

Signature of participant

Date

* Please delete as appropriate

*Note: We would be highly appreciated if you would give **consent to reveal identity of institution and/or your good-self as an interviewee** (i.e., **reveal by position involved in KT**) so as to facilitate and enhance the research value, readability and relevancy of this comparative case study research. However, you still have the right to privacy (i.e. personal details will not be revealed) and withdraw at any time without negative consequences.*

*INFORMATION SHEET***An Investigation of Higher Education Institution's Knowledge Transfer Strategies –
A Comparative Study of Three Institutions in Hong Kong**

You are invited to participate in a project supervised by Professor ADAMSON, Robert Damian and conducted by CHUNG Yan-yi, Eddy, who is a doctoral student of the Graduate School in The Hong Kong Institute of Education.

The introduction of the research**A) Aims of the study**

This research attempts to investigate the extant Knowledge Transfer strategies adopted and implemented by higher education institutions in Hong Kong so as to derive an initial understanding about their differences, similarities and uniqueness, and explore whether there are differences between strategies formulation, dissemination and implementation amongst various KT agencies.

B) Selection of participants

As the research will use comparative case study on the issue of Knowledge Transfer (KT) strategies adopted and implemented by higher education institutions (HEIs) in Hong Kong that any relevant informant/participants on KT (i.e., KT representatives from the management and implementation side from publicly-funded small to medium size HEIs) will be invited to attend an interview so as to derive an initial understanding about KT strategies formulation, dissemination and implementation from their respective roles as KT agencies.

The methodology of the research**A) Participants in this study**

- A total of six participants are expected recruiting from three publicly-funded small to medium size higher education institutions in Hong Kong whereby two KT representatives from the management and implementation side from each selected higher education institution would be invited for interviews.
- Letter will be sent to the selected higher education institutions inviting heads of institutions to recommend KT representatives from the management and implementation side to attend individual interview session. Consent forms will be sent to institutional participants seeking their consent to participate in the research prior to the interviews. In addition, personal network within the higher education sector will be utilised for referral of key informants (i.e., KT representatives) as well as referral through snowball effect.

B) Procedure of the research

- Participants will be invited to attend a one and a half hour interview session for talking about strategies formulation, dissemination and implementation from their respective roles as KT agencies. Participants will also be provided with an interview schedule in advance prior to the scheduled date of interview facilitating an initial understanding about the research as well as the contents/areas of the open-ended questions.
- Participants are expected to attend one session of interview and invited to comment on the transcription of the interview.

C) Potential benefits (including compensation for participation)

- It is expected that the research results could provide informed bases for local HEIs' KT planning and implementation as well as the government's funding initiatives.
- No reimbursements or other incentives will be involved as potential benefits to compensate participation.

The potential risks of the research (State explicitly if none)

Should normally be none but if participant, as representative of participating institution, observes any risk (i.e., data sensitivity) or feel discomfort during the course of interview, the principal investigator will not reveal/use this part of collected data even if overall consent to reveal has been obtained beforehand or refrain from asking similar questions / take a short break / reschedule another date for interview.

Your participation in the project is voluntary. You have every right to withdraw from the study at any time without negative consequences. All information related to you and/or institution will remain confidential, and will be identifiable by codes known only to the researcher if consent to reveal identity has not been obtained for this comparative case study research.

Describe how results will be potentially disseminated

The research results will be published in the form of thesis that I would be most grateful for your permission and consent to share this research results with larger audiences through hard copy publication and electronic online PDF version so as to facilitate others who are interested studying in this area could have an aggregated base of literatures as references.

Concluding remarks

Thank you very much in advance for your support in this research by providing relevant and substantial information in relation to the research, in particular of your KT role perspectives. I would like to reinstate that we would strictly keep those data with confidentiality by mixing up for analysis without the identity of your institution if you and/or your institution has indicated "data sensitivity" in advance. Otherwise, upon your consent, we will put the collected data for comparison amongst participated institutions with revealed identity. In this regard, I would be much grateful if you and/or your institution would facilitate this case study research with comparative nature by **giving us permission to conduct the research with revealed identity** (i.e. compare amongst participating institutions).

If you would like to obtain more information about this study, please contact Eddy CHUNG at telephone number 9XXX XXXX or my supervisor Professor ADAMSON at telephone number 2XXX XXXX.

If you have any concerns about the conduct of this research study, please do not hesitate to contact the Human Research Ethics Committee by email at hrec@ied.edu.hk or by mail to Research and Development Office, The Hong Kong Institute of Education.

Thank you for your interest in participating in this study.

CHUNG Yan-yi, Eddy
Principal Investigator

Appendix 4.3. The Case Study Protocol

In order to enhance the reliability of case study research, a protocol, which “is a system of rules about the correct way to act in formal situations” (Collins COBULD 2012, p. 1247), is adapted from Yin’s illustrative case study protocol so as to deriving procedures and general rules to follow for executing the data collection from various sources of evidence, such as interviews and documentation, from a single case in a multiple-case study (2014, pp. 84-94).

Table of Contents of Protocol²² for Conducting Multiple-case Study of Higher Education Institution’s Knowledge Transfer Strategies

A. Overview of the Case Study

1. Background of the study

2. Mission and objectives:-

- It is expected that the research results could provide implications for local HEIs’ KT planning and implementation as well as the policy makers’ funding initiatives.
- The objectives of this study are to fill the gaps of “known what” of the knowledge transfer development process by addressing the down-to-earth issues of KT implementation, especially after twenty-year more development.

3. Research questions and propositions:-

- What kinds of knowledge transfer strategies have been planned and adopted by three selected higher education institutions?
- How the institutions have disseminated and implemented the KT strategies?
- What are the differences, similarities and uniqueness of KT strategies amongst three HEIs?
- Whether there are notable discrepancies between strategies formulation, dissemination and implementation amongst three HEIs?
- The discrepancies, if any, are indeed embedded with different conceptual understandings of knowledge transfer amongst various agencies of knowledge transfer at different strategic levels resulting in different interpretations on respective HEI’s strategies formulation, dissemination and implementation.

4. Theoretical framework:-

- The Bray and Thomas Cube (2007, pp. 8-10) as one of the guiding frameworks for choosing the units of comparison and analyses.
- Adapt Adamson and Morris’ framework (2007, pp. 316-322) guiding for comparing KT strategies in focus through the examination of study purposes and perspective manifestations and data collection methods.

²² Made reference with and adapt from Yin’s illustrative case study protocol (2014, pp. 84-94).

- Make reference with Yin's case study research (2014) guiding for the application and justification of research methodology and design, the cases' selection rationale, case analyses as well as report the case study.

5. Role of protocol:-

- To standardize and guide the line of inquiry.
- To conduct research in a rigorous procedure and process so as to ensure the reliability and validity of the proposed research study.
- To facilitate better communication with the readers about the purposes and designs of the research study.

B. Data Collection Procedures

1. Name of contact person for the case study and interview:-

- Mr. CHUNG Yan-yi, Eddy, student of Doctor of Education, Hong Kong Institute of Education.
- Mobile: 9XXX XXXX
- Email: s1107XXX@s.eduhk.hk

2. Name of supervisors for the research study

- Professor ADAMSON, Robert Damian, Principal Supervisor
- Telephone: 2XXX XXXX
- Email: addressee@eduhk.hk
- Dr. PARK, Jae, Associate Supervisor
- Telephone: 2XXX XXXX
- Email: addressee@eduhk.hk

3. Data collection plan:-

- Refer to Table 2 of the research proposal for details of types of evidence to be collected as in terms of their typical manifestation through typical data collection and research methods.
- KT representatives, one from the management and the other from the implementation side, are the targets of interviewees for tapping information and perspectives from different levels of KT strategies (i.e., formation, dissemination and implementation).

4. Expected preparation before interviews:-

- To send letter to the key person or KT representatives of the concerned institutions inviting to attend interviews for the study.
- To prepare interview schedule and data collection questions beforehand.
- To consult supervisors about the appropriateness of the interview schedule and the research study, either through email and/or face-to-face consultation.

- To plan a data collection activity schedule targeting a completion timeframe with contingency plan, such as changing date of interview(s) and/or replacing interviewee(s).
- To equip with necessary instruments, including notebook, stationery, audio recorder, portable computer etc., and arrange venues for conducting interviews as well as writing transcriptions.
- To align full compliance with the operational guidelines and procedures of research ethics requires by the Human Research Ethics Committee (HREC) of the Hong Kong Institute of Education (HKIED), including the clearance of ethical review of the research study by principal supervisor and HREC as well as the provision of consent forms for institutions or interviewees for obtaining informed consent.
- The basic principles of ethics in research are “to avoid generating any adversely impact upon stakeholders, participants, and those concerned” (HKIED, 2014, p. 1) summary of the HKIED’s Guidelines on Ethics in Research) while safeguarding “the physical, emotional and intellectual well-being of the participants” through ethical review and practices, informed consent and kept confidentiality (HKIED, 2014, p. 1 OG and Procedures).
- The HREC’s guidelines and templates of consent form and information sheet to participants are set out at the link of HKIED (http://www.ied.edu.hk/academic_board_hrec/) and Appendix 4.1 respectively.

C. Data Collection Questions

With reference to Yin’s illustrative case study protocol (2014), a set of substantive questions is essential to the process of case study whereas relevant data is collected through “questions asked of specific interviewees” as well as “questions asked of the individual case” posing to the researcher, which Yin distinguishes them as “level 1 and level two questions” that “each question should be accompanied by a list of likely sources of evidence” and the rationale behind the questions asked (pp. 89-90). It is expected that the protocol questions “may serve as prompts in asking” interviewee’s questions and “form the structure of the inquiry” so as to keep the progress of data collection (Yin 2014, p.90).

The Protocol questions:-

No.	Questions (Q) and Related Section (R)	Possible Sources of evidence	Q Level
1	Q. Background of knowledge transfer policy in Hong Kong, particularly in the higher education sector. R. Overview Section	Documents	2
2	Q. Brief background of participating institution, including basic profile, years of KT participation, establishment of KT office, KT organisation structure and staff, KT funding, and types of research centres. R. Brief Background Section	Documents / Interviewees	2 Partly 1
3	Q. What was the situation before institutional submission of	Interviewees	1

No.	Questions (Q) and Related Section (R)	Possible Sources of evidence	Q Level
	KT strategies in the 2009/10-2011/12 triennium to UGC? R. Brief Background Section		
4	Q. What is the definition of knowledge transfer in general and specific? R. Overview and Brief Background Section	Documents / Interviewees	2 to 1
5	Q. What is strategy in general and specific? R. Overview and Brief Background Section	Documents / Interviewees	2 to 1
6	Q. What are the purposes of knowledge transfer in general and specific? R. Overview and Brief Background Section	Documents / Interviewees	2 to 1
7	Q. When did the institution involve in KT strategies planning? R. Strategies Planning Section	Documents / Interviewees	2 to 1
8	Q. Who were responsible for the KT strategies planning? R. Strategies Planning Section	Documents / Interviewees	2 to 1
9	Q. What were the management and organisational structures involving with the KT strategies planning? R. Strategies Planning Section	Documents / Interviewees	2 to 1
10	Q. How the KT strategies have been formed? What were the processes of formulation? R. Strategies Planning Section	Documents / Interviewees	2 to 1
11	Q. What were the rationale behind the formation of KT strategies? R. Strategies Planning Section	Documents / Interviewees	2 to 1
12	Q. Were there any priority aims regarding the KT strategies planning? R. Strategies Planning Section	Documents / Interviewees	2 to 1
13	Q. What were the intended outcomes regarding the KT strategies planning? R. Strategies Planning Section	Documents / Interviewees	2 to 1
14	Q. What kinds of KT strategies have been planned and adopted by the institution? R. Strategies Planning Section	Documents / Interviewees	2 to 1
15	Q. What were the major funding sources for delivering the institution's overall knowledge transfer strategies? R. Strategies Planning Section	Documents / Interviewees	2 to 1
16	Q. How much KT funding was allocated by UGC and/or the institution? R. Strategies Planning Section	Documents / Interviewees	2 to 1
17	Q. What major categories of KT activities have been planned and for what specified purposes? R. Strategies Planning Section	Documents / Interviewees	2 to 1
18	Q. What were the encountered difficulties when planning for KT strategies in the institutional and community context? R. Strategies Planning Section	Documents / Interviewees	2 to 1
19	Q. How did the institution handle or solve the encountered difficulties during the planning stage?	Documents / Interviewees	2 to 1

No.	Questions (Q) and Related Section (R)	Possible Sources of evidence	Q Level
	R. Strategies Planning Section		
20	Q. Who were responsible for the KT strategies dissemination? R. Strategies Dissemination Section	Documents / Interviewees	2 to 1
21	Q. What were the management and organisational structures involving with the KT strategies dissemination? R. Strategies Dissemination Section	Documents / Interviewees	2 to 1
22	Q. How has the institution disseminated the adopted KT strategies, such as promotion, engagement and cultivation? R. Strategies Dissemination Section	Documents / Interviewees	2 to 1
23	Q. What were the rationale behind the dissemination of KT strategies? R. Strategies Dissemination Section	Documents / Interviewees	2 to 1
24	Q. Were there any priority aims regarding the KT strategies dissemination? R. Strategies Dissemination Section	Documents / Interviewees	2 to 1
25	Q. What were the intended outcomes regarding the KT strategies dissemination? R. Strategies Dissemination Section	Documents / Interviewees	2 to 1
26	Q. What kinds of KT strategies have been disseminated by the institution? R. Strategies Dissemination Section	Documents / Interviewees	2 to 1
27	Q. What major categories of KT activities have been disseminated and for what specified purposes? R. Strategies Dissemination Section	Documents / Interviewees	2 to 1
28	Q. What were the encountered difficulties when disseminating KT strategies in the institutional and community context? R. Strategies Dissemination Section	Documents / Interviewees	2 to 1
29	Q. How did the institution handle or solve the encountered difficulties during the dissemination stage? R. Strategies Dissemination Section	Documents / Interviewees	2 to 1
30	Q. Who were responsible for the KT strategies implementation? R. Strategies Implementation Section	Documents / Interviewees	2 to 1
31	Q. What were the management and organisational structures involving with the KT strategies implementation? R. Strategies Implementation Section	Documents / Interviewees	2 to 1
32	Q. How has the institution implemented the adopted KT strategies? R. Strategies Implementation Section	Documents / Interviewees	2 to 1
33	Q. What were the rationale behind the implementation of KT strategies? R. Strategies Implementation Section	Documents / Interviewees	2 to 1
34	Q. Were there any priority aims regarding the KT strategies implementation? R. Strategies Implementation Section	Documents / Interviewees	2 to 1
35	Q. What were the intended outcomes regarding the KT	Documents /	2 to 1

No.	Questions (Q) and Related Section (R)	Possible Sources of evidence	Q Level
	strategies implementation? R. Strategies Implementation Section	Interviewees	
36	Q. What kinds of KT strategies have been implemented by the institution? R. Strategies Implementation Section	Documents / Interviewees	2 to 1
37	Q. What major categories of KT activities have been implemented and for what specified purposes? R. Strategies Implementation Section	Documents / Interviewees	2 to 1
38	Q. What were the encountered difficulties when implementing KT strategies in the institutional and community context? R. Strategies Implementation Section	Documents / Interviewees	2 to 1
39	Q. How did the institution handle or solve the encountered difficulties during the implementation stage? R. Strategies Implementation Section	Documents / Interviewees	2 to 1
40	Q. How would the adopted KT strategies be commented? R. Strategies Evaluation Section	Documents / Interviewees	2 to 1
41	Q. What were the strengths and weaknesses of the adopted KT strategies? R. Strategies Evaluation Section	Documents / Interviewees	2 to 1
42	Q. How could the adopted KT strategies be improved? R. Strategies Evaluation Section	Documents / Interviewees	2 to 1

Note: Interviewees would be invited amongst senior management staff and frontline implementation staff involving at different knowledge transfer strategic levels.

D. Guide for the Case Study Report

Yin (2014) suggests that an initial profile, the reporting format and compositional structure of the case study report should become “part of the case study protocol” so as to “facilitate both the design and the conduct of the case study” in advance (p. 187) as well as to list out “documentation for the case study report” forming “an important part of the “database” for the case study” (p. 94) and its future reference for any relevant inquiries. In this regard, the reporting format of “multiple-case study” will initially be adopted whereby the study report “will consist of the single cases” presented in separate chapters covering with “cross-case analysis” and comparative results (Yin, 2014, p. 184). In addition, a common and standard approach of “linear-analytic structure” would be adopted in this study for composing the research report (Yin, 2014, p. 188) and outlining in the protocol as follows:-

1. Overview of knowledge transfer, its strategies and brief approach of the research
2. Proposition and justification
3. Objectives and scope of the study
4. Literature review
5. Comparative education analyses – guiding frameworks
6. Research methodology and design
7. Reporting data collected from multiple-cases
8. Cross-case analysis and comparative results
9. Conclusion and implications

- 10. Glossary
- 11. References
- 12. Appendices

Remarks: The final reporting format would be subject to advice from supervisors and the requirements of HKIEd per se.

Note: The Hong Kong Institute of Education (HKIEd) has been retitled as The Education University of Hong Kong (EdUHK) in May 2016.



Appendix 4.4 Interview Schedule

Title of research :

An Investigation of Higher Education Institution's Knowledge Transfer Strategies – A Comparative Study of Three Institutions in Hong Kong

Name of interviewee : To be confirmed

Date of interview : To be confirmed

Duration of interview: Around 1.5 hours

Time of interview : To be confirmed

Venue of interview : To be confirmed

Name of interviewer : CHUNG Yan-yi, Eddy

Contact : 9XXX XXXX / s1107XXX@eduhk.hk

Brief introduction of the research study

Apart from “teaching” and “research” of Higher Education Institutions (HEIs), knowledge transfer (KT) is usually regarded as the “third mission” to meet challenges of a complex and interconnected globalised world. Nevertheless, there are different conceptual understandings and interpretations of the “third mission” amongst HEIs, aligned with their specific roles, missions, areas of strength and experience in KT development. Henceforth, dissimilar KT strategies and practices have been formulated and adopted by different HEIs with notable differences in strategic planning, implementation and/or convergences of KT strategies. In view of the importance of enhancing sustainability through KT from institutional initiatives and of HEI's contribution to the Hong Kong society, this research attempts to investigate the extant KT strategies adopted and implemented by three publicly-funded small to medium size HEIs in Hong Kong so as to derive an initial understanding about their differences, similarities and uniqueness, and explore whether there are differences between strategies formulation, dissemination and implementation amongst various KT agencies. These may lead to rethinking and rearticulating various issues and provide informed bases for local HEIs' KT implementation and the government's funding initiatives.

Section 1: Knowledge Transfer in the Context of Institution

Main questions 1.1: Can you provide a brief introduction about knowledge transfer in your institution, such as mission and objectives of KT, years of participation, establishment of KT office, KT organisation structure and staff, as well as your role in KT and the relationships between KT and the research units?

Main questions 1.2: Preamble - A HK\$50 million fund from 2009/10 onwards has been allocated annually amongst eight publicly-funded HEIs, aiming to enhance and

broaden institutional capacity and endeavours in KT as well as to encourage reciprocal processes between HEIs and the society.

Q. Can you briefly describe the situation before institutional submission of KT strategies in the initial round in the 2009/10-2011/12 triennium to UGC?

Section 2: KT Interpretation

Main questions 2.1: Can you tell me your definition of knowledge transfer? What is your view about the definition of KT specified in the official documents (i.e., webpage, KT proposals or reports) of your institution?

Main questions 2.2: What are the purposes of knowledge transfer and what types of KT strategies should be adopted? What have been adopted and why?

Section 3: KT Strategy

Main questions 3.1: What are essential and decisive to the formulation, dissemination and implementation of KT strategies in your institution?

Main questions 3.2: What are the rationales behind the formulation, dissemination and implementation of KT strategies? What are prioritised amongst the formulation, dissemination and implementation of KT strategies? What are the expected outcomes?

Section 4: KT Encounters

Main questions 4.1: What are the encountered difficulties when formulating, disseminating and implementing KT strategies in the institutional and community context? How did the institution handle the encountered difficulties during different KT stages?

Main questions 4.2: What are the strengths and weaknesses of the adopted KT strategies? How could the adopted KT strategies be improved?

End of interview

Thank you very much for your support in this research by providing relevant and substantial information in relation to the research, in particular of your KT role perspectives. I would like to reinstate that we would strictly keep those data with confidentiality by mixing up for analysis without the identity of your institution if you and/or your institution has indicated “data sensitivity” in advance. Otherwise, upon your consent, we will put the collected data for comparison amongst participated institutions with revealed identity. In this regard, I would be much grateful if you and/or your institution would facilitate this case study research with comparative nature by giving

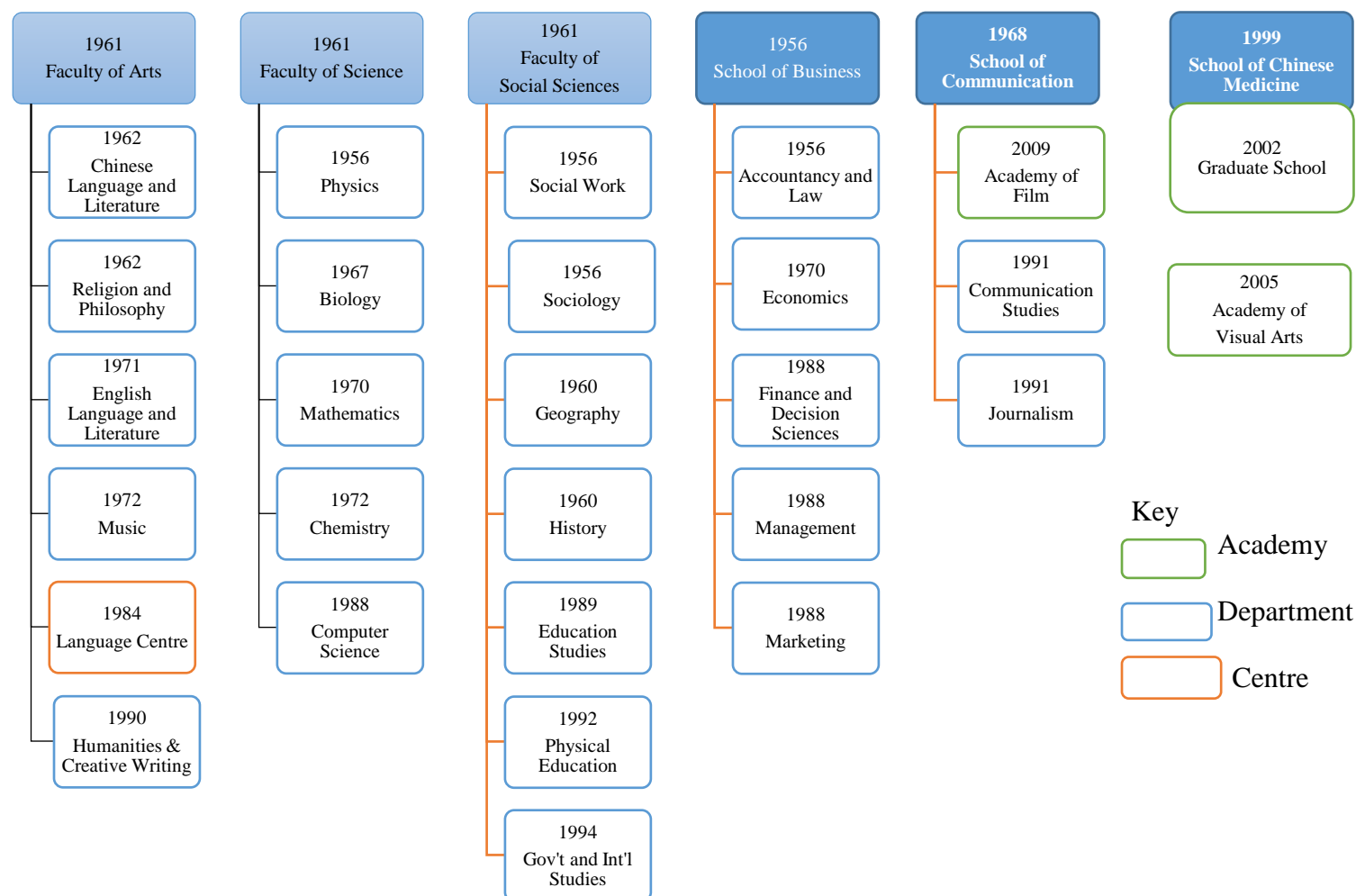
us permission to conduct the research with revealed identity. Notwithstanding that I will provide you the transcription of this interview could amend those misstated, unclear and/or misinterpreted of the transcript. Finally, should you have any questions regarding the interview, please do not hesitate to raise here or contact me afterwards.

Once again, thanks a lot for your support!



Appendix 5.1

Academic Structure of HKBU with Year of Founding



Source: HKBU (2016e) with supplementary information provided by Communication Office of HKBU in September 2016.

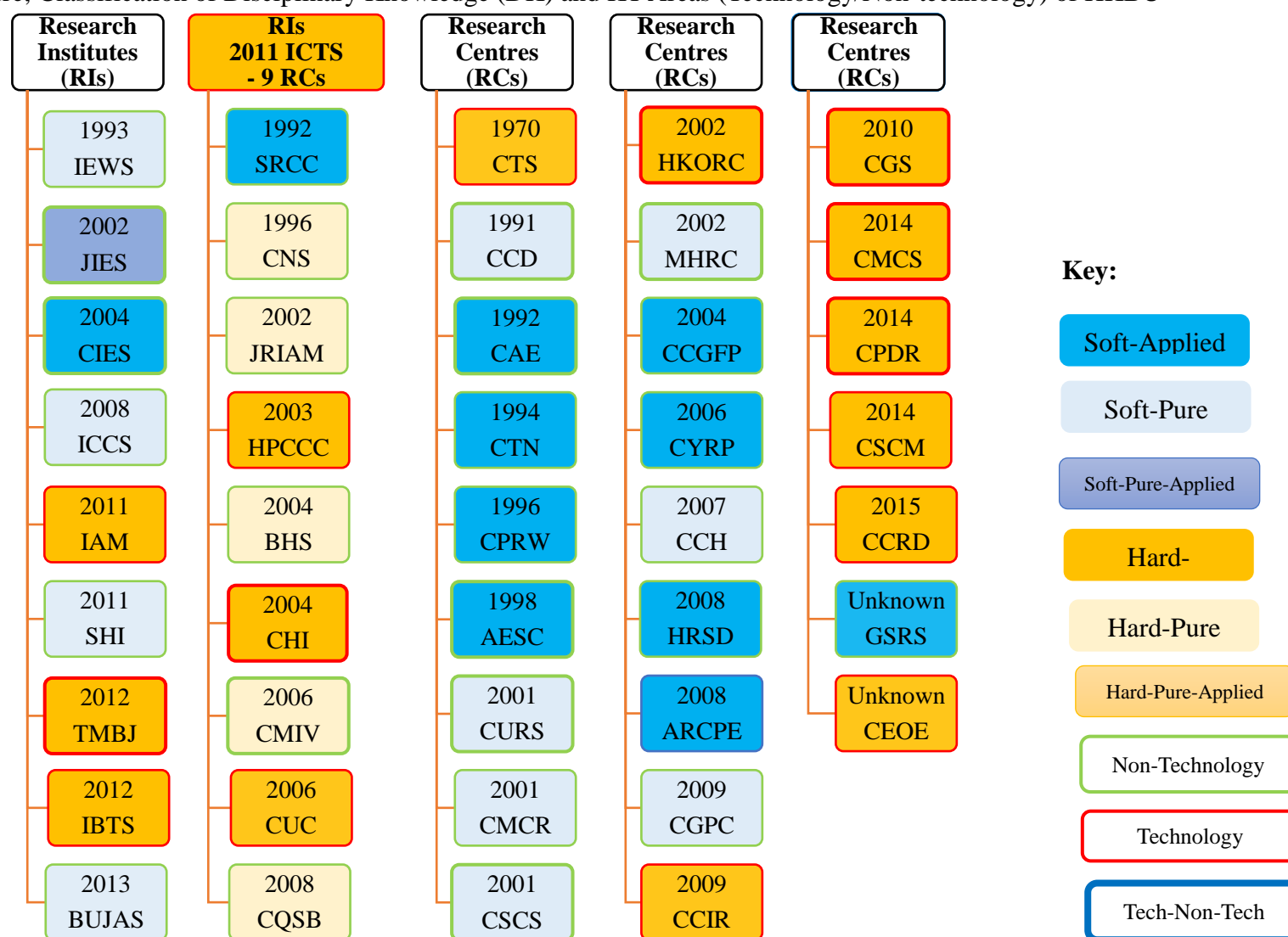


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Appendix 5.2

Research Infrastructure, Classification of Disciplinary Knowledge (DK) and KT Areas (Technology/Non-technology) of HKBU



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Appendix 5.2 (Cont'd)

Abbreviations

Research Institutes ²³

IEWS	David C. Lam Institute for East-West Studies
CIES	Croucher Institute for Environmental Sciences
ICCS	Advanced Institute for Contemporary China Studies
JIES	BU-RCEES Joint Institute of Environmental Sciences
JIES	Institute for Advancing Translational Medicine in Bone and Joint Disease
IAM	Institute of Advanced Materials
IBTS	Institute of Integrated Bioinformedicine and Translational Science
BUJAS	Jao Tsung-I Academy of Sinology
SHI	Mr. Simon Suen and Mrs. Mary Suen Sino-Humanitas Institute
ICTS	The Institute of Computational and Theoretical Studies - Interdisciplinary research platform comprises of 9 research centres)
SRCC	Statistics Research & Consultancy Centre
CNS	Centre for Nonlinear Studies
JRIAM	Peking University-HKBU Joint Research Institute for Applied Mathematics
HPCCC	High Performance Cluster Computing Centre
BHS	Beijing-Hong Kong-Singapore Joint Centre for Nonlinear and Complex Systems
CHI	Centre for Health Informatics
CMIV	Centre for Mathematical Imaging and Vision
CUC	Research Centre for Ubiquitous Computing
CQSB	Centre for Quantitative Systems Biology

²³ The disciplinary knowledge was classified with reference from Biglan's (1973) classification of academic disciplines whereby the introduction and/or research areas of the designated websites of the research institutes and centres have been reviewed and categorised accordingly.

Appendix 5.2 (Cont'd)

Research Centres

CTS	Chemical Testing Services
CCD	Centre for Child Development
CAE	Centre for Applied Ethics
CTN	Centre for Translation
CPRW	Dr. Stephen Hui Research Centre for Physical Recreation and Wellness
AESC	Asian Energy Studies Centre
CURS	Centre for China Urban and Regional Studies
CMCR	Centre for Media and Communication Research
CSCS	Centre for Sino-Christian Studies
HKORC	Hong Kong Organic Resource Centre
MHRC	Modern History Research Centre
CCGFP	Centre for Corporate Governance and Financial Policy
CYRP	Centre for Youth Research and Practice
CCH	Centre for Chinese Cultural Heritage
HRSD	Centre for Human Resources Strategy and Development
ARCPE	Sino-Forest Applied Research Centre for Pearl River Delta Environment
CGPC	Comparative Governance and Policy Research Centre
CCIR	Shum Yiu Foon Shum Bik Chuen Memorial Centre for Cancer and Inflammation Research
CGS	Centre for Geo-Computation Studies
CMCS	Hong Kong Chinese Medicine Clinical Study Centre
CPDR	Mr. & Mrs. Ko Chi Ming Centre for Parkinson's Diseases Research
CSCM	Research Centre for Standardization of Chinese Medicines
CCRD	Consun Chinese Medicines Research Centre for Renal Diseases
GSRS	Centre of Global Sport and Recreation Studies
CEOE	Research Centre of Excellence for Organic Electronics

Source: HKBU (2016f) with supplementary information provided by the Communication Office of HKBU in September 2016.

Appendix 5.3

Examples of 6W-element Immersed in the Data Presentation & Analysis Chapters under the Descriptive Framework for HKBU

The 6W-elements of Hong Kong Baptist University under the Heuristic Framework of Analysis						
Why	By Whom	To / With Whom	What to be Transferred	In What Way(s)	With What Effect(s)	Example of KT Project(s)
KT Aims	KT Key Stakeholders		Knowledge Transfer Strategy – its Scope, Mechanism, Results & Manifestation			
Rationale	Internal ²⁴	External / Internal	KT Areas	Core KT Strategies	Foreseeable KT Impacts	KT Showcases / Typical Examples
To cultivate literary creativity & enhance cultural atmosphere	Faculty of Arts	Community	Non-technology area e.g., literary creativity	Partnership strategy e.g., partner with writing scholars Interaction strategy e.g., Writer-in-Residence	- enhance cultural dimension - cultivate literary creativity	The International Writers Workshop
Improving the professional medical interpreting services for the ethnic minority communities		- ethnic minority communities - ethnic minority professionals - NGOs	Non-technology area e.g., professional medical interpreting services	Partnership strategy e.g., partner with social service and medical organisation	- improve professional medical interpreting services for the ethnic minority communities	Improving the Medical Interpreting Services in Hong Kong
				Train-the-trainer strategy e.g., train up ethnic minority medical interpreters	- set up a NGO formed by some professionally trained medical interpreters	
To benefit the community in public health through knowledge & expertise application	School of Chinese Medicine	- Members of the public - Chinese medicine professionals	Technology & Non-technology area e.g., patent herbal health improvement products e.g., online database of medicinal plants	Professionalization strategy e.g., advance the professionalism of the Chinese medicine industry Open source strategy e.g., disseminate knowledge through online database	- establish safety & quality ensured mechanism of proprietary Chinese medicine - enhance global recognition of Chinese medicine industry	The A-Mark Quality Chinese Medicines Authentication Scheme
To arouse interest & promote science in	Faculty of Science	- Secondary School	Technology area e.g., inter-	KT activity-based strategy e.g., promote science in daily life	- explore inter-disciplinary science & learn science in	The inter-disciplinary Science Summer

²⁴ Internal here is implied as within the institutional context where the key stakeholders are affiliated with the institution.

The 6W-elements of Hong Kong Baptist University under the Heuristic Framework of Analysis						
Why	By Whom	To / With Whom	What to be Transferred	In What Way(s)	With What Effect(s)	Example of KT Project(s)
KT Aims	KT Key Stakeholders		Knowledge Transfer Strategy – its Scope, Mechanism, Results & Manifestation			
Rationale	Internal ²⁴	External / Internal	KT Areas	Core KT Strategies	Foreseeable KT Impacts	KT Showcases / Typical Examples
daily life of the public		Students - The public	disciplinary science	by means of KT activity Participatory strategy e.g., participate in a series of science activities for experiential learning	daily life	Camp
To address issues of social concern thru research and expertise in social sciences related knowledge areas	Faculty of Social Sciences	- Community - Schools	Non-technology area e.g., social concern issues in education	Research-based knowledge strategy e.g., focus on social concern issues as thematic research	enhance public knowledge on thematic social issues	Study of Creative Education in Hong Kong Primary & Secondary Schools
			e.g., professional development in pedagogy	Professionalization strategy e.g., advance the professionalism of the education profession	improve practical teaching & learning elements in class	
“To match the needs of the community and work in partnership with members of HKBU to proactively contribute to the community” through KT	KT Office	- academic staff - students - community	Proposition area e.g., KT award criteria e.g., KT concept promotion	Fiscal/resource strategy e.g., Award the highest honour to KT project	promote KT through incentive & recognition	KT Award
				Proactive strategy e.g., proactively promote the concept of KT within HKBU	render support to the initiation of KT Partnership projects	KT Ambassador
			Procedure area e.g., patent application flowchart	Patent strategy e.g., develop comprehensive & quality assured procedure	Protect IPRs of HKBU & the inventors	Patent application & audit procedure

Sources: KTO/HKBU (2010, 2014, 2016j).



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Appendix 5.4

Message Examples of the Disseminated KT Strategies of HKBU

Source of Dissemination	Message Example	Disseminated KT Strategy
KT staff	A1 mentioned that “community engagement...aims to encourage... staff and/or students...serving the community needs...by participating...through KTP Seed Fund and MPCF.” [processes]	Engagement in local community through incentive strategy
KT Website	“KTO aspires to become an enabling catalyst...”	Capacity building strategy
	“...a supportive bridge between the broader community and HKBU...”	Networking strategy
	“...do our best in ‘providing professional customer-oriented KT services’ to all whom we serve”	Professional customer-oriented strategy
KT Publications (e.g., KT Annual Reports, Teasers, Horizons, Annual Reports, On Campus, Buddy Magazine, We Talk)	“for effective KT activities, a deliberate strategy of using the KT partnership model is adopted”	Partnership strategy
	Expert Talk at HKBU Horizons has an interview with Dr. Lui talking about inclusive education and the importance of “playful parenting”	Expertise strategy
	“HKBU scholars are working on research that can significantly benefit human health”	KT impact strategy
	One of the examples contained in the On Campus of HKBU was the “board games to beat weather-induced boredom that they can enhance cognitive development and social engagement”	Accessibility strategy
	One of the examples contained in the Buddy Magazine of HKBU was the sharing of four alumni in “their ways of becoming visionary entrepreneurs and elites in the workforce” in the editorial themes of “Let’s Talk”	Networking strategy
	One of the examples contained in “We Talk” online at Eyes on HKBU was “Our Fears or Love: Humble Hug” of the series thematic topic of “Mind and Soul”, in which Dr, Chow wrote “hug is an important means of expression which cannot be replaced by words”	Thematic and knowledge carrier strategy
HKBUtube (Scholarly Talks, Teaching Videos)	Dr Hu of HKBU said this invention of a cloud-computing middleware intends to “combine proximity detection and distance visualization techniques to strike a balance between utility and privacy protection”	Technology transfer strategy
6W-element of ‘in what ways’ of the ‘dissemination of KT strategy’	Disseminated through the KT Award by awarding the highest honour to KT project of the year	Fiscal/resources strategy
	With assistance from KT ambassadors, they have proactively promoted the concept of KT within HKBU	Proactive strategy
	The project of Visual Arts Axis promotes the appreciation of visual arts through various community and school art-based activities	KT activity-based strategy

Sources: KTO/HKBU (2010, 2014, 2016b); HKBU (2010, 2014 (October), 2015a, 2015c, 2015d); Hu (2012).

Appendix 5.5

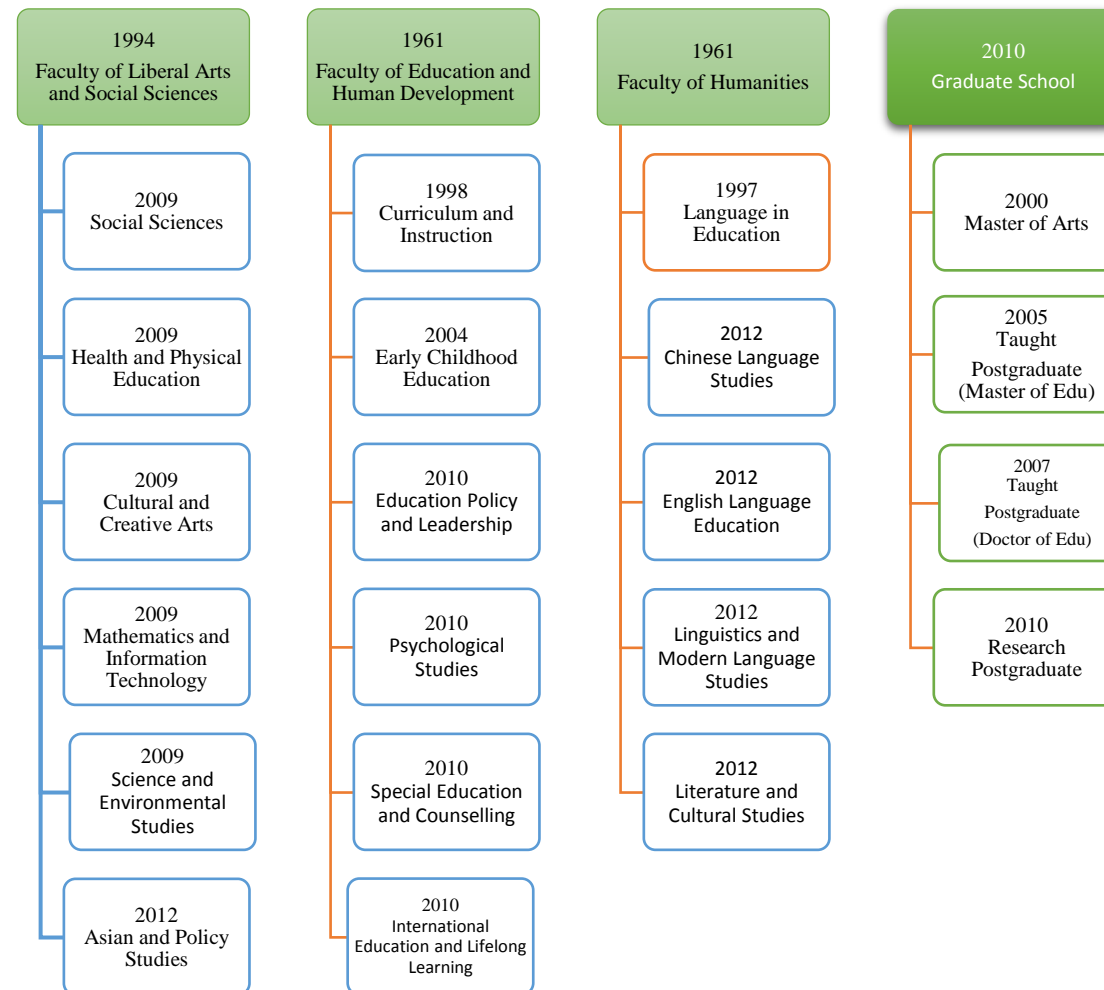
Specific Examples of Key Stakeholders for KT Strategy Implementation with Exemplar Examples and Rationales

KT Key Stakeholders		Core KT Strategies	Exemplar Examples and Rationales
Internal (By Whom)	External / Internal (To / With Whom)	In What Ways	
Academy of Visual Arts (AVA)	With K11 Art Mall	Partnership strategy	Nurturing Young Visual Artists (To cultivate students the concept of curating and art-making)
	To/with Secondary school students AVA students	Participatory strategy	
Department of Physical Education	With Special Olympics Hong Kong	Partnership strategy	Special Olympics Sand-shoeing (To develop mechanism for identifying potential athletes with intellectual disability)
	To/with Athletes with intellectual disability Community Association HKBU students	Train-the-trainer strategy	
Department of Chemistry	With the University of Macau	Collaboration strategy	Luminescent Metal Complex Rapidly Detects Lead Contamination in Water (To facilitate a convenience testing of lead ions in drinking water at home)
	To the general public	Technology transfer strategy	
KT Office	To/with HKBU students Entrepreneurs Business Organisations	Entrepreneurial strategy	Business Entrepreneurship Support and Training (BEST) (To promote student entrepreneurship through training, spin-out activity and intellectual property seminar etc.)
KT Officers	To/with Academic staff Students Community	Proactive strategy	The KT Ambassadors (To proactively promote the concept of KT within HKBU, engage KT participation and facilitate KT development)
KT Committee	To/with Academic staff Students Community KT Officers	Institutionalised strategy	Formation of KT Committee and KT Office (To institutionalise organisational structure facilitating for KT policy formulation and development)

Sources: KTO/HKBU (2010, 2011 & 2016k).

Appendix 6.1

Academic Structure of EdUHK with Year of Founding



Source: EdUHK (n.d.d) with supplementary information provided by the Communication Office of EdUHK in September, 2016.

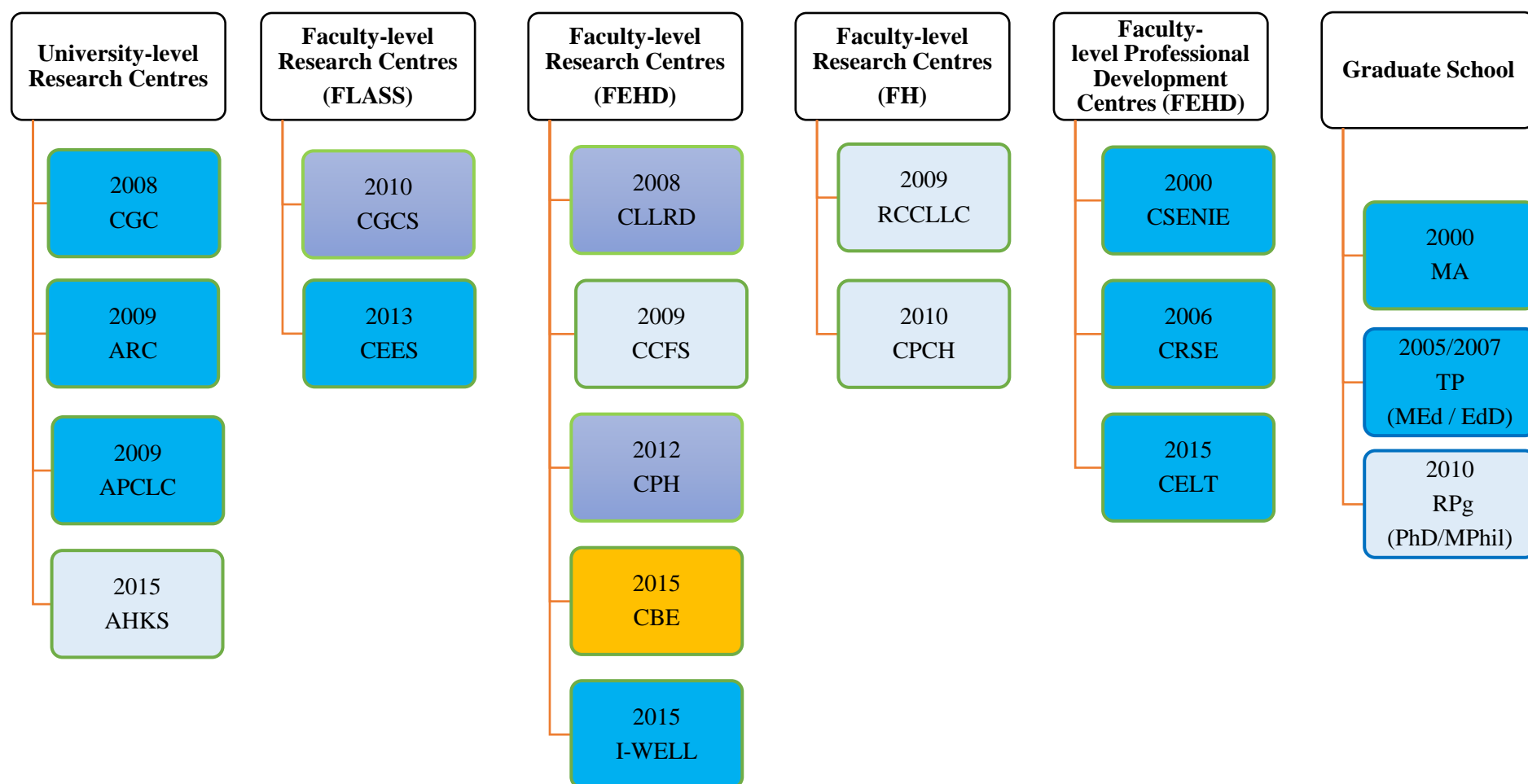


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Appendix 6.2

Research Infrastructure, Classification of Disciplinary Knowledge (DK) and KT Areas (Technology/Non-technology) of EdUHK



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Appendix 6.2 (Cont'd)

Abbreviations

University-level Research Centres

AHKS	The Academy of Hong Kong Studies (soft-pure & soft-applied / non-technology)
ARC	Assessment Research Centre (soft-applied / non-technology)
CGC	The Centre for Governance and Citizenship
APCLC	The Joseph Lau Luen Hung Charitable Trust Asia Pacific Centre for Leadership and Change

Faculty-level Research Centres

FLASS	Faculty of Liberal Arts and Social Sciences
CGCS	Centre for Greater China Studies
CEES	Centre for Education in Environmental Sustainability

FEHD Faculty of Education and Human Development

CBE	Centre for Brain and Education
CCFS	Centre for Child and Family Science
CLLRD	Centre for Lifelong Learning Research and Development
CPH	Centre for Psychosocial Health
I-WELL	Integrated Centre for Wellbeing

FH Faculty of Humanities

CPCH	Centre for Popular Culture in the Humanities
RCCLLC	Research Centre for Chinese Literature and Literary Culture

Faculty-level Professional Development Centres

FEHD	Faculty of Education and Human Development
CELT	Centre for Excellence in Learning and Teaching
CRSE	Centre for Religious and Spirituality Education
CSENIE	Centre for Special Educational Needs and Inclusive Education

Sources: EdUHK (n.d.f) with supplementary information provided by the Communication Office of EdUHK in September, 2016.

Appendix 6.3

Examples of 6W-element Immersed in the Data Presentation & Analysis Chapters under the Descriptive Framework for EdUHK

The 6W-elements of the Education University of Hong Kong under the Heuristic Framework of Analysis						
Why	By Whom	To / With Whom	What to be Transferred	In What Way(s)	With What Effect(s)	Example of KT Project(s)
KT Aims	KT Key Stakeholders		Knowledge Transfer Strategy – its Scope, Mechanism, Results & Manifestation			
Rationale	Internal	External / Internal	KT Areas	Core KT Strategies	Foreseeable KT Impacts	KT Showcases / Typical Examples
Design device to monitor and reduce pollutants	Science & Environmental Studies	Industries Educational sector	Technology areas e.g., Multifunctional molecular device to degrade pollutants	Innovation strategy e.g., explore feasibility of a new type of multifunctional supramolecular device to treat spent chemicals	degrade pollutants into harmless substances	Development & Application of Supramolecular Sensors for Detecting Water Pollutants
Incentives for cultural & behavioural changes among Faculties to become active in KT	EdUHK	academic staff or team	Proposition areas e.g., KT element added as assessment criteria in PAQPR in 2014/15 onwards	Incentive KT strategy e.g., reward outstanding research with significant community impact & highlight KT's importance & impact	leading to innovative, profitable, economic/ social improvements, & academic, social, professional, and policy impact on education & community	President's Award for Outstanding Performance in Research (PAQPR)
Enhance research with impact, KT activities for pursuing effective research & innovative scholarships for beyond educational changes	EdUHK	academic staff or team	Proposition areas e.g., support transfer of Institute-owned knowledge, technology and research findings that influence a wider community	KT impact strategy e.g., publish impact case histories in different disciplines	- enable wide range of KT activities and create impacts on the community - generate long-lasting impacts on professional innovation & practical improvement of school education	The KT Awards scheme
Enhance professional & staff developments on KT area	EdUHK	staff members	Proposition areas e.g. good practices & advanced knowledge	Capacity building KT strategy e.g., share success stories & practical experiences of KT among staff	enhancing staff capacity to engage in high-level KT activities	KT Sharing Sessions
Empower curriculum leaders to work with their staff in curriculum	The Centre for Childhood Research	curriculum leaders in the pre-primary institutions	Non-technology areas e.g., effective curriculum development and implementation	Partnership KT strategy e.g., partner with pre-primary institutions in school-based curriculum development	empower preschool staff in effective curriculum development & implementation	Empowering Early Childhood Institutions in Implementing

The 6W-elements of the Education University of Hong Kong under the Heuristic Framework of Analysis						
Why	By Whom	To / With Whom	What to be Transferred	In What Way(s)	With What Effect(s)	Example of KT Project(s)
KT Aims	KT Key Stakeholders		Knowledge Transfer Strategy – its Scope, Mechanism, Results & Manifestation			
Rationale	Internal	External / Internal	KT Areas	Core KT Strategies	Foreseeable KT Impacts	KT Showcases / Typical Examples
development & implementation	and Innovation (CCRI)				help to create a collaborative school network amongst 60 preschools derive a deliverable in the form of a book “Exemplary Practice on Effective School-Based Curriculum”	Effective School-based Curriculum
Serve as important channel for raising visibility of KT, demonstrating breadth of KT, & publicising KT policy matters	EdUHK	staff & community member	Tech-non-Tech areas e.g., disseminate KT related information & offer free and convenient services in relation to KT & research	Accessibility KT strategy e.g., easily accessible through internet channel	becoming a community channel between university & public in sharing knowledge and ideas	EdUHK’s KT Website
Develop and protect university’s owned intellectual properties and product licensing policy	EdUHK	academic staff or team	Procedure areas e.g., derive procedures to facilitate patent and product licensing applications	Protecting KT strategy e.g., procedures to protect university’s owned intellectual properties	establish policy & procedures for intellectual property protection	KT Task Force formed to formulate new policy for university’s owned intellectual properties

Sources: EdUHK (2010a, 2013a, 2014 and 2015b).



Appendix 6.4

Message Examples of the Disseminated KT Strategies of EdUHK

Source of Dissemination	Message Example	Disseminated KT Strategy
Staff Member	M2 mentioned that “KT as an important institutional policy has reinforced by the setup of KT unit and its coordination in disseminating and implementing KT policies” (M2, Summary of interview transcript) [outcomes]	Institutionalisation KT strategy
KT Website	“...long-lasting impacts on the profession and the community in education and related areas...”	Impact strategy
	“...gives priority to those KT activities...relevant to the research capacity building...”	Capacity building strategy
KT Publications (e.g., KT Annual Reports, Annual Reports, R&KT Newsletter, Transforming People, Transforming Knowledge, Joy of Learning online magazine)	“Professional and staff developments on the KT area have received a boost through sharing sessions” (KT report 14/15)	Capacity building strategy
	“expert team provided innovative front-line assistance to mainstream HK schools...for the diverse learning needs of ...SEN” (KT report 13/14)	Expertise strategy
	“...MGS supports organization of professional development courses in new knowledge areas...” (KT report 09/10)	Professionalisation strategy
	“To enhance the internal culture for KT...provided funding incentives and fostered public recognition to support...KT activities and initiatives...” (KT report 12/13)	Cultural change strategy
EDUHK R&KT Videos	“...multi-media videos were produced to showcase successful KT stories on academic staff...” (KT report 14/15)	Marketing strategy
6W-element of ‘in what ways’ of the ‘dissemination of KT strategy’	“allow application for extra responsibility payment of KT activities” (KT report 14/15)	Fiscal/resources strategy
	“creativity and integration of KT activities into R&D agenda” (KT report 09/10)	Enabling environment strategy
	“positioning EdUHK’s teaching and services as research-based with high added value in intellectual capital” (KT report 09/10)	Applied research strategy
	“provide a KT Matching Grant Scheme which gives priority to KT partnership projects” (KT report 10/11)	Partnership strategy
	“website offers free and convenient services...online portal to research information...” (KT report 12/13)	Accessibility strategy

Sources: EDUHK (2016a); EDUHK (2010a, 2011a, 2012, 2013a, 2014, 2015b).

Appendix 6.5

Specific Examples of Key Stakeholders for KT Strategy Implementation with Exemplar Examples and Rationales in EdUHK

KT Key Stakeholders		Core KT Strategies	Exemplar Examples and Rationales
Internal (By Whom)	External / Internal (To / With Whom)	In What Ways	
Department of Cultural and Creative Arts (CCA)	To/with School teachers / artist	Partnership strategy	Teachers' Transformation as Learning: Teaching Cantonese Opera (To transform the value perception on teaching and learning Cantonese opera in schools) 2014
Centre for Education in Environmental Sustainability (CEES)	To/with Pupils and teachers from Hong Kong, Macau and the Mainland EDUHK students	Thematic strategy	Innovation of Science and Environmental Studies (To enhance knowledge in science and the environment, and develop a habit of innovation) 2015
Faculty of Humanities (FH)	With Chinese literature scholars	Collaborative strategy	Compendium of Hong Kong Literature 1919–1949 (To preserve dated texts with significant literary value in the cultural history of Hong Kong) 2015
	To/with Education sector Teachers Public		
KT Director and KT Task Force	To/with Academic staff	Capacity building strategy	Implementation of regular systematic workshops, seminars, and sharing of good practices and advanced knowledge (To facilitate staff for increasing outputs of qualitative knowledge with core elements of applicability, innovation, legitimacy and creativity)
Committee on Research and Development (CRD)	To/with Academic staff/ Senior management KT staff	Leadership engagement strategy	Appointment of KT Director and leadership engagement (To appoint a KT Director and engage senior staff and faculty representatives facilitating KT development)

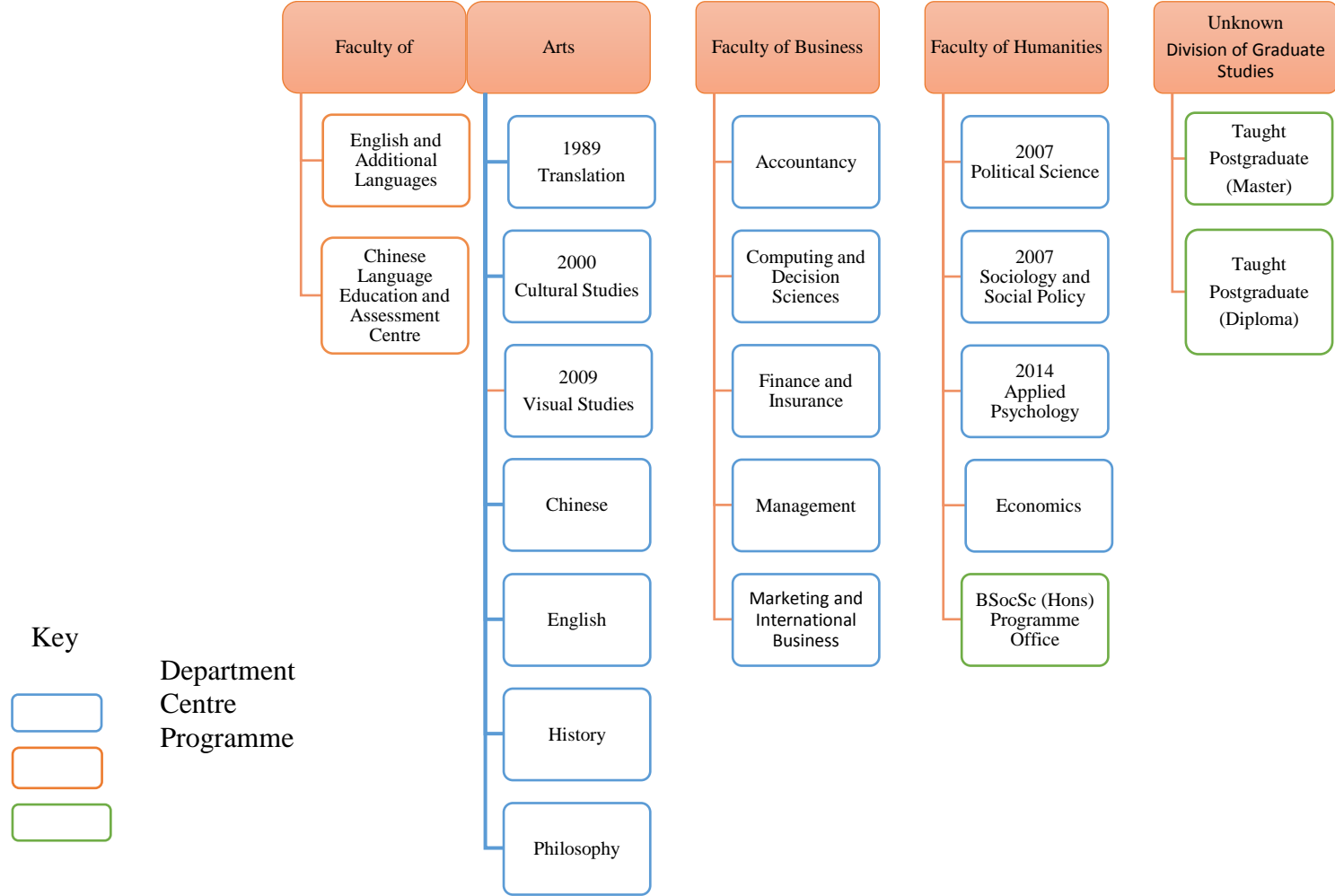
Sources: EdUHK (2010a, 2014 & 2015b).



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Appendix 7.1
Academic Structure of LU with/without Year of Founding



Source: LU (2016e) with supplementary information provided by the Office of Communications and Public Affairs in October 2016.

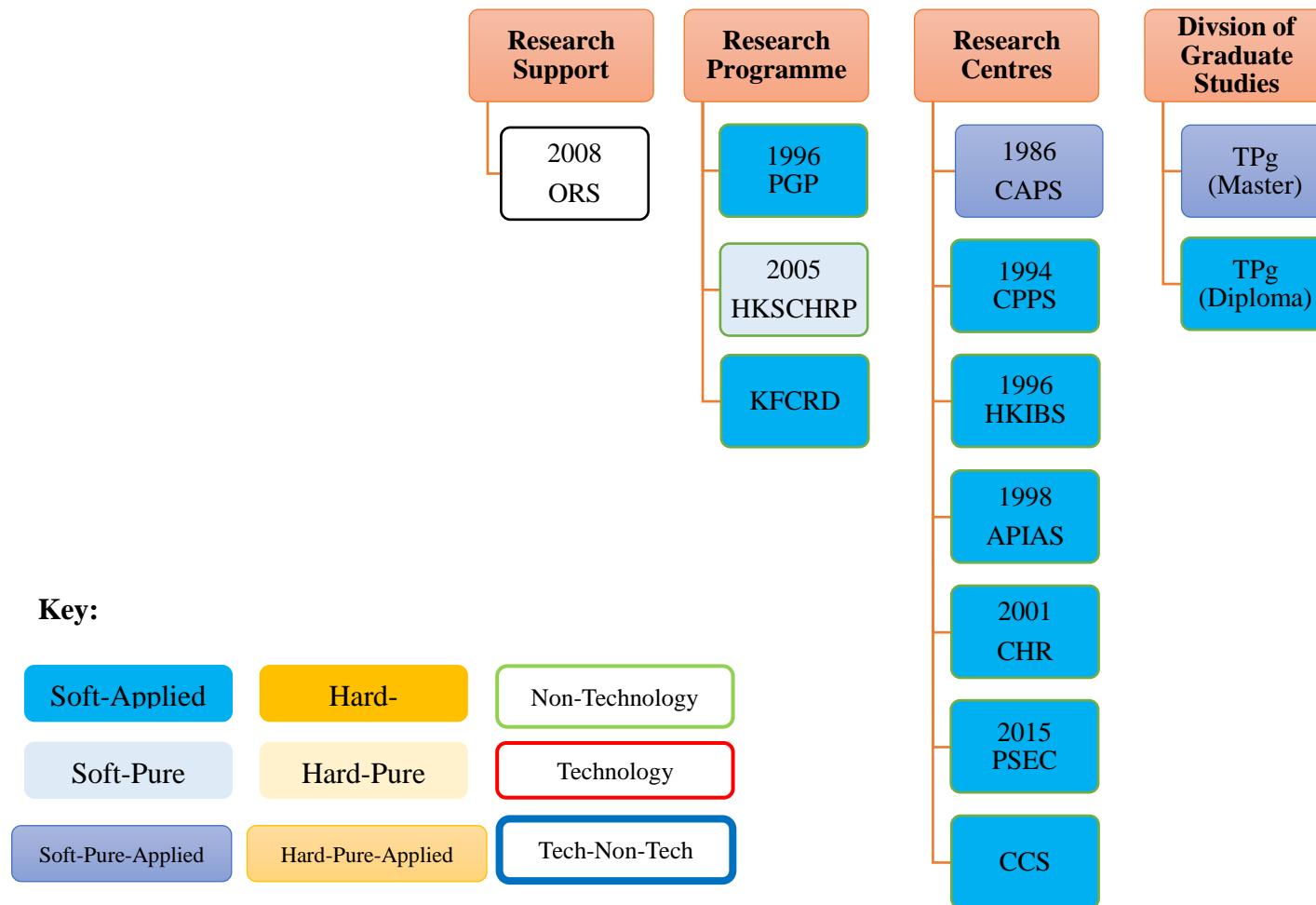


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Appendix 7.2

Research Infrastructure, Classification of Disciplinary Knowledge (DK) and KT Areas (Technology/Non-technology) of LU



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Appendix 7.2 (Cont'd)

Abbreviations

Research Centres

APIAS	The Asia-Pacific Institute of Ageing Studies
CAPS	The Centre for Asian Pacific Studies
CCS	The Centre for Cinema Studies
CHR	The Centre for Humanities Research
CPPS	The Centre for Public Policy Studies
HKIBS	The Hong Kong Institute of Business Studies
PSEC	Pan Sutong Shanghai-Hong Kong Economic Policy Research Centre

Research Programme

HKSCHRP	The Hong Kong and South China Historical Research Programme
KFCRD	Kwan Fong Cultural Research and Development Programme
PGP	The Public Governance Programme

Division of Graduate Studies

TPg (Master)	Taught Postgraduate (Master)
TPg (Diploma)	Taught Postgraduate (Diploma)

Research Support

ORS	Office of Research Support
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Sources: LU (2016i) with supplementary information provided by the Office of Communications and Public Affairs in October 2016.



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Appendix 7.3

Examples of 6W-element Immersed in the Data Presentation & Analysis Chapters under the Descriptive Framework for LU

The 6W-elements of Lingnan University under the Heuristic Framework of Analysis						
Why	By Whom	To / With Whom	What to be Transferred	In What Way(s)	With What Effect(s)	Example of KT Project(s)
KT Aims	KT Key Stakeholders		Knowledge Transfer Strategy – its Scope, Mechanism, Results and Manifestation			
Rationale	Internal	External / Internal	KT Areas	Core KT Strategies	Foreseeable KT Impacts	KT Showcases / Typical Examples
Develop KT models to build LU & community capacity with positive impacts on humanity betterment	Asia-Pacific Institute of Ageing Studies (APIAS)	Macao SAR Government	Non-technology areas e.g., Old-Age Security	KT impact strategy e.g., Commission project for studying and developing a 10-year ageing policy framework for Macao	Derive direct impact on the well-being of elderly in Macao Establish the first ageing policy blueprint in Asia based on World Health Organisation's Active Ageing Policy Framework	Macao Old-Age Security Inter-Departmental Study
		Public Foundation	Non-technology areas e.g., raise the quality of life of old age disabilities	e.g., Commission project for helping old age disabilities to enhance the quality of life through a train-the-trainer approach	Enhance better understand of end-of-life issues for a positive life towards the later stage of life	
Promote understanding & easy accessible Chinese cultural life aspects	Kwan Fong Cultural Research and Development Programme (KFCRD)	- Opera practitioners - Public audience - Academics	Non-technology areas e.g., Chinese traditional culture, intangible cultural heritage	Accessibility KT strategy e.g., making arts in various forms, such as English translation of traditional Chinese culture and annual arts festival, widely accessible to professionals and the general public	With the English translated version, the traditional Chinese culture of Cantonese opera becomes easily accessible with the faithful and easy-to-read for general readers and college students in inter-cultural contexts	A new book entitled "Anthology of Hong Kong Cantonese Opera, The Fong Yim Fun Volume"
Enrich cultural well-being through participation in various arts	Faculty of Arts	- Students - Community members - artists	Non-technology areas e.g., arts appreciation, liberal arts education, Chinese and Western civilizations		Enrich participants' cultural well-being through enjoying and taking part in a variety of arts and cultural activities during a 4-week public event	Lingnan Arts Festival
Adopt S-L as multiple-way transfer of knowledge, expertise and service	Office of Service Learning (OSL)	- U Students - Community - NGOs - Government departments	Non-technology areas e.g., subject related knowledge in social sciences, liberal arts and business	Service-learning KT strategy e.g., U students participate in S-L projects and apply subject knowledge in various disciplines in the project communities for the transfer of respective knowledge to	- Contributes to the well-being of individuals and communities through S-L projects for knowledge transfer, community development and tackling social issues	- Village Adoption Project in Yunnan, China - Elder Academy - Ethnic minority related projects



The 6W-elements of Lingnan University under the Heuristic Framework of Analysis						
Why	By Whom	To / With Whom	What to be Transferred	In What Way(s)	With What Effect(s)	Example of KT Project(s)
KT Aims	KT Key Stakeholders		Knowledge Transfer Strategy – its Scope, Mechanism, Results and Manifestation			
Rationale	Internal	External / Internal	KT Areas	Core KT Strategies	Foreseeable KT Impacts	KT Showcases / Typical Examples
Through partnership while serve as teaching & learning model		- Commercial sectors - deprived populations		benefit and/or induce changes amongst the targeted groups	- Community engagement - enhance the university-community cooperation and collaboration - reciprocal and mutual benefits for the academics and society	- Community Engagement through S-L - Service-Learning and Research Scheme (SLRS)
Engage academics in KT	Office of Research Support (ORS)	Academic staff	Proposition area e.g., competitive criteria for KPF	Incentive strategy e.g., establish KT Project Fund to support initiatives & recognize KT efforts	Share research outputs and expertise beyond publications	KT Project Fund
To sustain KT practice & multiply effect of replication KT process via KT models	APIAS	Academic staff Community stakeholders	Procedure area e.g., develop KT Manual procedure through	KT model building strategy e.g., build up a “Lingnan’s model for KT programs”	Developed KT Manual guiding for KT programmes' preparation and implementation	Develop health and ageing from a life course perspective as a model of thematic knowledge transfer

Sources: LU (2010 and 2015b); Faculty of Arts/LU (2015); Office of Service Learning/LU (2015b).



Appendix 7.4

Message Examples of the Disseminated KT Strategies of LU

Source of Dissemination	Message Example	Disseminated KT Strategy
KT staff	A3 mentioned that “OSL has already adopted the S-L model to promote KT and implement KT projects.” (Summary of interview transcript) [outcomes]	Service-learning KT strategy
KT Webpage within the Website of ORS	Showcasing KT Project Fund (KPF) on-going and completed projects with categorized themes, e.g., revitalizing heritage, arts and culture outreach, and raising professional standards	Implementation KT through thematic strategy
LU Website	One of the new mission statements are “encouraging faculty and students to contribute to society through original research and knowledge transfer” endorsed in 2015	Applied research strategy
KT Publications (e.g., KT Annual Reports, Annual Reports, OSL Newsletters)	“activities that promotes intergenerational solidarity and cooperation...better understanding between generations”	Interaction strategy
	“...consolidation of collaborative relationships with business and professional organizations to transfer research findings and managerial implications to relevant communities and industries”	Collaboration strategy
	To engage faculties and students to serve and contribute the society “through KT based on original research” by means of “the new KT Project Fund and the Service-Learning Research Scheme”	Engagement strategy
	In the Feature Story of the OSL Newsletters (SLant), each issue would have a specific theme of knowledge, say “Life and Death Education”, that it would like to share and transfer from S-L students.	Thematic strategy
6W-element of ‘in what ways’ of the ‘dissemination of KT strategy’	Making arts in various forms, such as arts festival, that can widely accessible to professionals and the general public	Accessibility strategy
	Partner with NGO to promote art inclusion and showcase different abilities of disabled artists	Partnership strategy
	Commission project for the development of Happiness Index in Hong Kong	KT impact strategy
	Students participate in S-L projects and apply subject knowledge...transfer of respective knowledge to benefit and/or induce changes...	Service-learning strategy

Sources: LU (2011, 2015a, 2015b, 2016b, 2016d, 2016e, 2016h).

Appendix 7.5

Specific Examples of Key Stakeholders for KT Strategy Implementation with Exemplar Examples and Rationales

KT Key Stakeholders		Core KT Strategies	Exemplar Examples and Rationales
Internal (By Whom)	External / Internal (To / With Whom)	In What Ways	
Department of Economics	Community partners in Ethiopia - Insurance company and NGO	Partnership strategy Applied research strategy	Social Protection in Ethiopia through Weather Index Insurance (To generate policy impact on aspects of the productive safety net in Ethiopia)
Department of History	General public	Accessibility strategy	Oral history database of Hong Kong (To facilitate accessing to and sharing of the historical research experience and oral history database of Hong Kong with the general public)
Department of Visual Studies	HKU Kadoorie Institute Local students	Collaboration strategy	Touching the Earth – Environmental Art Workshop at Lai Chi Wo (To engage students' observation and exploration of Lai Chi Wo's natural and cultural heritages through environmental art workshops)
APIAS	LU students LU Staff	KT model building strategy	Production of theoretical-based KT Manual (To develop LU's KT operative model for sustaining KT practice & multiplying effect of replication KT process)
Office of Service-Learning (OSL)	LU students LU Staff Community stakeholders	Service-learning strategy	Service-learning and Research Scheme (To engage faculties and students participation in KT through S-L and transfer of applied research knowledge through community services and collaborative projects)
Office of Research Support (ORS)	Academic staff	Incentive strategy	KT Project Fund (KPF) (To engage academics in KT by the establishment of KPF to support initiatives from and recognize KT participation to all academics)

Sources: LU (2010, 2011, 2014, 2015b).



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Appendix 8.1

Table A

Comparing Dimensions of Knowledge Transfer Strategies by Institution, Time Series and Code Frequency

Dimensions of KTS	2014-15			2013-14			2012-13			2011-12			2010-11			2009-10			Total by Dimension		
	BU	EdU	LU	BU	EdU	LU	BU	EdU	LU	BU	EdU	LU	BU	EdU	LU	BU	EdU	LU	BU	EdU	LU
Implementation	10	12	17	21	16	14	12	12	10	14	8	8	23	21	12	24	20	19	104	89	80
KT engagement	10	17	12	10	13	11	12	13	0	5	15	5	6	14	1	5	26	0	48	98	29
Enabling environment	6	4	6	3	5	2	9	12	1	15	10	0	14	11	0	12	13	0	59	55	9
Capacity building	4	7	2	6	5	2	1	5	1	0	5	3	5	10	4	9	11	3	25	43	15
Dissemination	4	16	5	8	12	3	1	7	0	4	4	1	3	4	0	2	3	0	22	46	9
Formulation	0	3	1	0	2	1	1	0	0	0	0	16	1	0	8	0	0	10	2	5	36
Protecting	3	1	0	5	0	0	3	0	0	7	0	0	2	0	0	3	1	0	23	2	0
Total by Year	37	60	43	53	53	33	39	49	12	45	42	33	54	60	25	55	74	32	283	338	178

Key: BU = Hong Kong Baptist University (HKBU) / EdU = The Education University of Hong Kong (EdUHK) / LU = Lingnan University (LU)

Table B

Comparing Differences, Similarities and Characteristics of the Dimensions of the Formulated KT Strategies by Code Frequency Ranking of Respective Institutions (Reconstruction with reference from Table A above)

HKBU		EdUHK		LU	
Implementation	104	Engagement	98	Implementation	80
Enabling Environment	59	Implementation	89	Formulation	36
Engagement	48	Enabling Environment	55	Engagement	29
Capacity Building	25	Dissemination	46	Capacity Building	15
Dissemination	22	Capacity Building	43	Enabling Environment	9
Protecting	23	Formulation	5	Dissemination	9
Formulation	2	Protecting	2	Protecting	0
	283		338		178



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Appendix 8.2

*Comparing the Overview of Formulated KT Strategies over the Years by Code Frequency
Ranking of Respective Institutions*

HKBU	CF	EdUHK	CF	LU	CF
Sub-categories of KT Strategies					
Enabling Environment	26	Enabling Environment	34	KT Model Building	22
Institutionalisation	22	Incentive	31	Impact	18
Entrepreneurial	20	Applied Research	30	Engagement	13
Incentive	18	Capacity Building	27	Collaboration	13
Partnership	16	Engagement	23	Thematic	12
Impact Assessment	14	Accessibility	22	Service-Learning	10
Organisation Structure Establishment	10	Marketing	22	Applied Research	9
Capacity Building	10	Fiscal or Resources	20	Institutionalisation	8
Fiscal or Resources	9	Impact	20	Capacity Building	8
Accessibility	9	Institutionalisation	14	Engagement in Local Community	8
Commercialisation	9	Information Technology	11	Train-the-trainer	7
Impact	9	Partnership	10	Theoretical-based	7
Engagement in Local Community	8	Collaboration	10	Partnership	6
Applied Research	8	Networking	10	Non-technology	6
Collaboration	8	Leadership Engagement	9	Fiscal or Resources	5
Leadership Engagement	7	Incentive - Recognition	8	External Engagement	5
Student Engagement	7	Professionalisation	7	Accessibility	5
Marketing	7	Cultural Change	6	Progressive Development	5
Technology Transfer	7	Academic & professional capacity building	6	Interaction	5
Institutionalisation – Culture Establishment	6	Engagement in Local Community	6	Community education KT	5
Professionalisation	6	Student Engagement	6	Organisation Structure Establishment	4
Patent	6	Performance Indicator Guided KT	6	Mission-vision Driven	4
Cultural Change	5	Dissemination	5	Enabling Environment	3
Proactive Approach in Promoting KT	5	KT model building	5	Incentive	3
Intellectual property Right	5	Organisation Structure Establishment	4	Leadership Engagement	3
Non-technology	5	Encourage	4	Proactive Approach in Promoting KT	3
Progressive Promotion and Cultivation	4	Bottom up KT	4	Cultural Change	2
Communication	4	Protecting	4	Incentive - Recognition	2

HKBU	CF	EdUHK	CF	LU	CF
Sub-categories of KT Strategies					
Networking	4	Thematic KT	3	Long-term commitment	2
Protecting	3	Interdisciplinary	3	Networking	2
Professional customer-oriented	3	Proactive Approach in Promoting KT	2	Interdisciplinary	2
Interdisciplinary	3	Impact Assessment	2	Participatory	2
Interaction	3	Expertise	2	Knowledge Carrier	2
Encourage	2	K-based Regional and Int'l Development	2	Transformation	2
Dissemination	2	Interaction	1	Professionalisation	1
Mission-vision Driven	2	Sustainable	1	Student Engagement	1
Expertise	2	Innovation	1	Encourage	1
Participatory	2			Dissemination	1
Sustainable	2			Impact Assessment	1
KT activity-based	2			Expertise	1
Information Technology	1			Sustainable	1
Train-the-trainer	1			KT activity-based	1
Engagement	1				
Incentive - Recognition	1				
External Engagement	1				
Long-term Commitment	1				
Knowledge Carrier	1				
K-based Regional and Int'l Development	1				
Innovation	1				
Total Code Frequency (CF) and Average CF of Each Case					
<u>309</u>		<u>381</u>		<u>221</u>	
<u>5</u>		<u>5</u>		<u>4</u>	
Total Numbers of KTS for Each Case					
<u>49</u>		<u>38</u>		<u>42</u>	

Appendix 8.3

Comparing 'Differences' of Sub-category of KT Strategy – Entrepreneurial versus KT Model Building

Thematic sub-category (KT strategy)	Entrepreneurial	KT Model Building
HKBU	Students' entrepreneurship is an <u>effective mechanism of and inseparable from KT</u> that it is one of the KT strategies aims at encouraging HKBU students to transfer their knowledge and creativity into startup ventures and to become <u>social entrepreneurs</u> with corporate social responsibilities for sustaining beneficial impact to the community and supporting Hong Kong's knowledge-based economy. To actualise entrepreneurial KT strategy, HKBU has established the BEST Programme under a Strategic Development Fund to <u>engage student participations</u> and nurture them into innovative, socially responsive, and local to global entrepreneurs benefiting for economic and social sustainability.	Nil
EdUHK	Nil	EdUHK intends to advance the development of KT by <u>benchmarking</u> against a world-class centre of excellence for research, teacher training, and consultancy in education and education-related areas of social science for establishing a strategic research and KT model. Henceforth, EdUHK considers to expand KT with multi-purposes as a form of service to the community and as a profession while as priority for generating income from various KT activities. It targets to develop and extend their high-quality, high-impact research and innovative scholarship for benefitting the education profession and the community.
LU	Nil	The objectives for the adoption of KT model building strategy in LU were to derive an overall conceptual framework and operative model by reviewing the principles, process and outcome assessment of KT for the construction of Lingnan's Knowledge Transfer Model, such as the Community Education Approach, Thematic Life-course Approach (e.g., ageing: from a life course perspective) , and S-L Model. This strategy is indeed an exploratory journey in search of how KT should be approached in Lingnan whereby KT is a philosophy of education, a process of applying expertise, and a dynamic process of knowledge internalisation, sharing, creation and application. Henceforth, constant interaction and reinforcement through different training



Thematic sub-category (KT strategy)	Entrepreneurial	KT Model Building
		activities and KT projects are essential for pilot model deriving into more sophisticated and sustainable community KT model with the establishment of outcome-based and/or performance-based KT assessment tools for effectiveness measurement and enhancing teaching and learning.

Sources: HKBU, EdUHK and LU's KT Reports and Interview Transcripts.



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Appendix 8.4

Comparing Brief Background and Context of the Three Cases

Background/ Context	HKBU	EdUHK	LU
Founding Year	1956	1994	1967
Entitled University Status	1994	2016	1999
Funding Mode, Major Source of Funding	Publicly-funded by UGC		
Academic Profile	3 Faculties and 22 Academic Units	3 Faculties and 19 Academic Units	3 Faculties and 18 Academic Units
University's Population			
Staff Strength	940	818	282
Enrolled Students/Graduates	7,174 / 5,295	8,661 / 3,221	2,614 / 986
Research Infrastructure (RI / RC)	11 research institutes (RI) 25 research centres (RC) 3 offshore RI	4 university-level RCs 12 faculty-level RCs	10 research units (including RI, RC and research programmes)
Vision	Providing broad-based and creativity-inspiring education	Be leading in Education and complementary disciplines with excellent impacts	Distinguish by liberal arts education
Mission	Whole Person Education	Creates knowledge, understanding and transformation capacity thru multidisciplinary learning and research beyond Education	Education for Services Contributes thru original research and KT
Year of Formal KT Participation	2009-2010 Financial Year with allocated recurrent KT funding from UGC for new KT initiatives		
KT Funding	UGC KT Fund PIT Fund R&D Licensing Limited ITF	UGC KT Fund Institutional funding	UGC KT Fund KT Project Fund
KT Organisation Structure	KTC and KTO	CRD, KT Task Force and KT Unit under RDO	0910-1213 Registry, APIAS and OSL 1314-1415 URC and ORS
KT Objectives	Empowerment Enhance impacts Facilitate KT via IPR	Link research & teaching Develop intellectual capacity and capital	No explicit objectives Build effective KT model Serve thru S-L and applied

Background/ Context	HKBU	EdUHK	LU
	management Enable student entrepreneurship	Serve education development needs	research Exert impacts Contribute thru original research and KT
KT Institutionalisation (Establishment of KT Office)	Separated KT Office	Coordinate by KT Task Force and support by KT Unit under RDO	ORS as coordinating unit at university level
KT Staff	11 staff leading by a Head of KTO	Appointed KT Director with concurrent roles and support by 2 staff to serve the KT Task Force	Head of ORS support by an administrative team of 4 staff
KT Strategy Priorities	<ul style="list-style-type: none"> - KT promotion - Facilitates collaboration - Impact assessment - Commercialises innovation - Cultivates IP awareness - Nurtures and develops entrepreneurship 	<ul style="list-style-type: none"> - Applied research with impacts - Builds strong partnerships - Emphasises research capacity building - Prioritised thematic knowledge - Raise revenues while serving the community 	<ul style="list-style-type: none"> - Emphasizes nexus between research and KT - Engage academics with KT ownership - Recognises and supports KT thru internal structure - Transform knowledge with socio-economic benefit

Sources: Websites of HKBU, EdUHK, LU, and UGC.

Appendix 8.5

Comparing 'Why KT' through the Thematic Matrix for Case-related Main Thematic Summaries and Category-based Overviews

Main Thematic Category on Why KT	Thematic Category-based Summary		Case-related Thematic Summary
	Purposes of KT	Rationales of KTS	
HKBU M1	Facilitates staff/student participation and assist achieving whole person education	Nil	M1 specified that KT is a means of staff/student participation for the ultimate goal of whole person education
HKBU A1	Implements impacts to generate strategic innovations	For 'whole person development' in research, teaching, and/or learning enhancements for staff and students	A1 mentioned that rationales of KTS have to associate with research, teaching, and/or learning enhancements for 'whole person development' while KT impacts for stimulating innovations
EdUHK M2	Inform student learning through research, transform society, and social advancement thru student services	<ul style="list-style-type: none"> - domination in the context of education, arts and humanities and assumes a leading role to create impacts on education-related development - derives based on own's strengths - emphasise a bottom-up approach of defining, understanding and developing KT - people perform well and be motivated under reward mechanisms - promotes research strength and impacts through internationalisation 	M2 suggested that learning and transformation capacity achieving through research and services while KTS needs to adhere to the context of education-related development, university's strengths, participatory engagement, incentive mechanisms, and internationalisation in research strength and impacts.
EdUHK A2	Applies research-related knowledge for facilitating improvement in and connecting with the community	Nil	A2 emphasised applied research knowledge is key to community connection and improvement
LU M3	Knowledge created by the university should be transferred to and applied by the community contributing to the social policy and professional development instead of confining within the academic community	Research and learnt knowledge should be practical and users' needs oriented for application in the community transferring through collaboration and/or S-L KT strategy. Moral and humanity considerations should be addressed under technology advancement thru incorporation of social sciences knowledge to avoid arbitrarily	M3 stressed that university-created knowledge is to benefit society development through collaboration and/or S-L KT strategy addressing users' needs and practicalities while moral and humanity considerations should be addressed thru social sciences knowledge to balance technology advancement



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Main Thematic Category on Why KT	Thematic Category-based Summary		Case-related Thematic Summary
	Purposes of KT	Rationales of KTS	
		KT	
LU A3	KT should not confine to one-way relationship building while university has multi-roles in KT for impacting community policies	In need of reviewing existing rationales of KTS for deriving a new set by linking existing work in higher education	A3 addressed the needs to review existing rationales of KTS under higher education context while KT aims for impacting community policies
LU A4	KT relates to research and development and should be outbound in nature, reachable, practical and exerted impacts on public's quality of life, professional knowledge, and policy impacts emphasising with long-term and in-depth social and/or economic benefits for transformation	<ul style="list-style-type: none"> - impact strategy is closely related to research impacts with a process of transformation - participatory partnership thru KT projects is to enhance quality of life of specific group 	A4 suggested that KT is R & D related and should be outbound in nature, reachable, practical and exerted impacts on public's quality of life, professional knowledge, and policy impacts emphasising with long-term and in-depth social and/or economic benefits for transformation
Overview	KT are closely related to R & D of the University whereby it should be outbound in nature, reachable, practical and exerted impacts on human society, policies, professional knowledge and development through multiple stakeholders' participation and contributions in achieving different specific purposes of respective universities while transformation in general	Different KTS may have various rationales for achieving different purposes connecting with specific needs and context of the university	In general, KT and its strategies associate with research, teaching, learning, and services whereby innovative and practical knowledge are generated with long-term and in-depth socio-economic benefits for the advancement and transformation of the individual, society, different professions, and policies while adhering to the context of respective universities in specific and the higher education at large



Appendix 8.6

“In what ways” - Comparing Dissemination Channels and Core KT Strategy Examples of the Three Cases

Dissemination Channels	HKBU	EdUHK	LU
	Core KT Strategy Examples and Disseminated Messages		
Roles and Functions of KT Organisation	<u>Institutionalisation</u> Established KT Office and development of teams with designated functions and roles	<u>Capacity building</u> KT Task Force and KT Team facilitate for capacity building	<u>Impact</u> Launching of KT Project Fund
Prioritized KT Activities	<u>Partnership, TT and entrepreneurial</u> Implementing flagship KTP projects, MPCF, and BEST Programmes	<u>Partnership</u> Building KT partnerships and collaborative networks	<u>Thematic</u> Showcasing KPF with categorized themes
KT Staff	<u>Incentive for community engagement</u> Encourages participation thru KTP Seed Fund and MPCF in community projects	<u>Marketing</u> Promotes strengths, research potential and impacts for brand building	<u>Service-learning</u> S-L model to promote and implement KT
KT Website	<u>Networking</u> As supportive bridge between the broader community and HKBU	<u>Impact</u> Gives priority to KT activities with long-lasting impacts	<u>Applied research</u> Encourages contribution thru original research and KT
KT Publications	<u>Expertise</u> Expert Talk about inclusive education	<u>Marketing and recognition</u> Features research and KT achievements	<u>Engagement</u> Engages faculties and students to serve and contribute thru KTF and SLRS
Multi-media	<u>Technology transfer</u> Promotes invention through HKBUtube	<u>Academic & professional capacity building</u> Sharing experiences and philosophies in education by distinguished individuals	<u>Engagement in local community</u> Video introduction of S-L for community engagement
6W-element of ‘in what ways’	<u>Proactive</u> KT ambassadors promote KT proactively	<u>Applied research</u> Research-based with high added value in intellectual capital	<u>Partnership</u> Partner with NGO to promote art inclusion



Appendix 8.7

“In what ways” - Comparing Types of Dissemination Channels of the Three Cases

Dissemination Channels	HKBU	EdUHK	LU
	Types of Dissemination Channels		
KT Website	KT website of KT Office within category of Research in HKBU at http://kto.hkbu.edu.hk/	KT website under RDO within category of Research in EdUHK at http://www.edu.hk/rdo/KnowledgeTransfer	KT website under ORS within category of Research in LU at https://www.ln.edu.hk/ors/kt.php
KT Related Publications	<ul style="list-style-type: none"> - KT Annual Reports - Teasers on technology and inventions - HKBU Horizons - Annual Reports - On Campus - The Buddy Magazine 	<ul style="list-style-type: none"> - KT Annual Reports - Annual Reports - R&KT Newsletters - Transforming People - Transforming Knowledge 	<ul style="list-style-type: none"> - KT Annual Reports - Annual Reports - OSL Newsletters
Electronic Newsletters	<ul style="list-style-type: none"> - HKBU eNews - Eyes on HKBU - We Talk 	<ul style="list-style-type: none"> - EdUHK News - Joy of Learning online magazine 	<ul style="list-style-type: none"> - LU e-News - Lingnan Chronicle - Research & Impact Newsletter
Multi-media	HKBUtube <ul style="list-style-type: none"> - Scholarly Talks - Teaching Videos 	<ul style="list-style-type: none"> - EDUHK R&KT Videos - Little Stories, Big Dreams in Education Video Series 	University Videos under Quality Teaching and Learning

Sources: Websites of HKBU, EdUHK and LU.



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Appendix 8.8

Comparing 'In what ways' – Dissemination Strategy through Case-related Thematic Summaries and Category-based Overviews

Thematic sub-category (KT strategy)	Accessibility	Marketing	Case-related Thematic Summary
HKBU	Accessibility to knowledge capitals through easily accessible channels and interactive platform for enhancing visibility and awareness of KT while establishing KT culture.	Marketing strategy in HKBU was applied for both internal and external community whereby showcasing high-impact inventions and research through multi-media and participating in international exhibitions and forums aim to increase awareness of KT among the HKBU community, raise good reputations, enhanced publicity on research achievements and attract commercial interests and partnerships.	HKBU's accessibility strategy aims to enhance KT visibility, awareness, and establish KT culture through accessible and interactive channels. Marketing is proactive publicity on high-impact inventions and research achievements for attracting commercial interests and partnerships, and enhancing reputations.
EdUHK	Accessibility to knowledge capitals and KT activities through highly visible channels facilitating for knowledge exchange and strengthening KT between university and the education community.	Marketing as one of the dissemination strategy in KT was adopted through multi-media to increase publicity of EdUHK's efforts in KT and proactively to promote their strengths, research potential and impacts. The strategic purposes are to increase publicity and media exposure for brand building, easy access to university-owned intellectual resources by the public, and disseminating their enhanced capacities in research, KT and serving the community.	EdUHK's accessibility strategy aims to facilitate knowledge exchange and strengthen KT between university and the education community. Marketing is proactive publicity of EdUHK's efforts in KT and promotion of their strengths, research potential and impacts for brand building, easy access to university-owned intellectual resources, and disseminating enhanced capacities in research, KT and community services.
LU	LU attempted to establish and revamp a KT website for LU's staff, the public, students, and educators to access, share and exchange knowledge derived from KT projects. Outreach approach for increasing accessibility of university- or expert-owned knowledge to the community and professionals for showcasing the strengths of LU.	Nil	LU's accessibility strategy aims to increase accessibility and exchange of the university- or expert-owned knowledge by/with the community and professionals for showcasing its strengths.
Overview	Accessibility through multiple channels aims for facilitating knowledge exchange, strengthening KT, and establishing KT culture with the external and internal community.	Marketing strategy is proactively promoting university's research achievements, impacts and inventions for brand building, increasing KT awareness, and attracting commercial interests and partnerships thru multi-media and publicity.	Accessibility aims to enhance KT awareness and facilitate knowledge exchange thru interactive platforms while marketing is proactive publicity of research achievements, impacts and inventions for brand building and attracting commercial interests and partnerships thru multi-media.



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Appendix 8.9

Comparing Notable Differences and Characteristics of 'What to be transferred' among the Three Cases

KT Related Areas	HKBU	EdUHK	LU
Research Focus	<ul style="list-style-type: none"> - Chinese and China studies - Cross-cultural studies - Environment - Health 	<ul style="list-style-type: none"> - Early Childhood and Well-being Studies - Educational Development, Policy, and Leadership - Humanities, Creative Arts and Culture - Literature and Historical Studies - Science Education and Environmental Studies - Social and Policy Studies - Special Education and Applied Psychology 	<ul style="list-style-type: none"> - Aesthetics and the Arts - Conflict Management in Chinese Business - Cultural Research and Development - Hong Kong Studies through History - International Financial Markets and Economic Performance - Modern Literature in Chinese - Public Policy and Governance - Social Gerontology - Taxation in China
Category of Thematic Knowledge	Technology Areas Alzhime / Biotechnology / Cancer Chinese Medicine / Display / Drug / Herb Information & Communication Technology Medicine / Nanotechnology /Neurodegenerative Partinson/ TCM / Tumor		<ul style="list-style-type: none"> - Revitalizing Heritage - Raising Professional Standards - Business Development - Arts and Culture Outreach - Building a Caring and Understanding Society
	Knowledge Areas (Non-technology areas) Biology / Chemistry / Chinese Literature Chinese Medicine / Computer Science English Literature / Health Informatics Mathematics / Marketing / Physics / Science Translation / Visual Arts		
Notable Differences and Characteristics of KT Areas	Multi-disciplinary KT areas in technology with health-oriented and non-technology with multiple disciplines	KT areas in education and beyond education with arts, humanities and social sciences focus	KT areas in liberal arts with arts, humanities, and social sciences focus

Sources: HKBU, 2016g; KTO/HKBU, 2016m; EdUHK, 2015d; Lingnan, 2016i & 2016h.



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Appendix 8.10

Comparative and Interpretative Analysis of the Aspects of KT Strategy among Three Cases – Conceptual Understanding

Manifestation	Aspect of KT Strategy	Locational Level (i.e., HEIs)		
		HKBU	EdUHK	LU
		Conceptual understanding and interpretation of Knowledge Transfer (KT)		
Policy documents		<ul style="list-style-type: none"> - Knowledge for society betterment and advancement - Community needs matching with HKBU's strengths are essential for community contributions thru KT 	<ul style="list-style-type: none"> - KT is actualised thru promotion of applied research with contributions to teaching and learning, professional practice, and impact on different aspects - Strengthening KTS and its impacts may facilitate education and social advocacy and transformation - KT is “contribution to communities and professions through activities that disseminate our Institute-owned and research-based knowledge” (p. 7) 	<ul style="list-style-type: none"> - Teaching based KT thru Integration S-L - KT thru expertise and professional training
KT reports		<ul style="list-style-type: none"> - Cultivating entrepreneurial culture is important as entrepreneurship is a KT activity - As the third pillar - For community engagement - Intellectual-based for community needs - Inform research and teaching for advancement 	<ul style="list-style-type: none"> - KT as the third pillar linking to the development of research and teaching - KT is a university-wide mission and involvement - KT as services contributing to the community and profession advancement 	<ul style="list-style-type: none"> - KT as a “drip-drip business” that involves much effort to engage academic staff and build up partnership base in support of KT - To engage faculty and students to extend the value and impact of their knowledge and research outcomes to the community in need
Interview transcripts Management perspective		<ul style="list-style-type: none"> - KT as essential elements of teaching, learning and research - natural extension of research - applies research and contributes to the community - facilitates teaching and learning into practice - Best fit-for-purpose channel 	KT is bilateral as in terms of internal and external collaboration through services and applied research with impacts for transformation and social changes	All university created knowledge should be transferred to and applied by the community for benefitting social and professional development
Interview transcripts Administration perspective		<ul style="list-style-type: none"> - KT for research-based or professional knowledge 	<ul style="list-style-type: none"> - institution-owned knowledge embeds with legitimacy, innovation, and creativity for transferring to society - comparatively a new concept in EdUHK 	<ul style="list-style-type: none"> - involves two-way process more with the concept of ‘knowledge exchange’ - bases on needs assessments and platforms building



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			<ul style="list-style-type: none"> - experience a cyclic transformation process - transformation of academic or research knowledge into applicable practices
Case Summary	<p>HKBU's overall conceptual understanding and interpretation of KT was defined as mission (i.e., the third pillar) and mostly as means (e.g., community contributions thru KT) driving and facilitating to achieve the designated purposes of KT (e.g., for community needs) through different strategies (e.g., cultivating entrepreneurial culture) and KT initiatives (e.g., entrepreneurship).</p>	<p>EdUHK's overall conceptual understanding and interpretation of KT was defined as mission (i.e., the third pillar and university-wide) driving and facilitating to achieve the designated purposes of KT (e.g., facilitate education and social advocacy and transformation) through different strategies (e.g., promotion of applied research) and KT initiatives (e.g., collaboration through services).</p>	<p>LU's overall conceptual understanding and interpretation of KT was defined as mission (i.e., "drip-drip business") driving and facilitating to achieve the designated purposes of KT (e.g., for benefitting social and professional development) through different strategies (e.g., engage academic staff and build up partnership base) and KT initiatives (e.g., integration S-L).</p>

Sources: KTO/HKBU (2012a, 2012b, 2014, 2016k) HKBU (2014); HKBU A1's interview transcript, August 3, 2015; EdUHK (2009, 2010a, 2015d); LU (2009, 2015b, 2014).



Appendix 8.11

Comparative and Interpretative Analysis of the Aspects of KT Strategy among Three Cases – KT Strategy Formulation

Manifestation	Aspect of KT Strategy	Locational Level (i.e., HEIs)		
		HKBU	EdUHK	LU
		KT strategy formulation		
Policy documents		The ‘whole person education’, strategic focus areas of innovative research and community engagement are the guiding framework for KT strategy formulation	<ul style="list-style-type: none"> - adopts and guides by “Education Plus” - benchmarked against IOE - embraces applied research strategy with impacts 	<ul style="list-style-type: none"> - Teaching based KT thru Integration S-L - KT thru expertise and professional training
KT reports		Refer to Appendix 5.3	Refer to Appendix 6.3	Refer to Appendix 7.3
Interview transcripts Management perspective		<ul style="list-style-type: none"> - guides by principles embed in the mission and vision of KTO - for enabling and facilitating KT - for and with the community - bases on rapport building - for transforming motivation and mindset - be realistic to attract and facilitate student participation 	<ul style="list-style-type: none"> - guides by the core positioning of educational related research - institutionalisation for KTS formulation, coordination and implementation - bottom-up approach for staff engagement and participation in KT - regional and international partnerships are key to establish research impacts - Needs for proactive promotion and marketing for brand building - needs commercialising its service impacts - recognition as incentives to motivate and perform 	<ul style="list-style-type: none"> - adheres practical and users' needs - positioning through close contact with the community - incorporates KT into teaching - could encourage and recognize the KT efforts
Interview transcripts Administration perspective		<ul style="list-style-type: none"> - provides professional customer-oriented KT services - encourages community engagement - informs teaching and enhances innovative research - mobilises student participation and commitment 	<ul style="list-style-type: none"> - aims to apply research-related knowledge contributing to the community is fundamental to derive KTS - staff development is of paramount importance for KT engagement - incentives are essential to facilitate more participation and qualitative KT projects - institutionalisation for KTS formulation - formulate KTS by 13 KT performance indicators - subsequent consideration of KT impacts, 	<ul style="list-style-type: none"> - adheres to “Education for Service” - Service-Learning as core element of KT ready for adoption - embraces the needs of community and applicability of knowledge - synergies deriving through reciprocal communication and key stakeholder engagement - bases on mutual trust and sustainable relationships - essential in understanding of KT concept



Manifestation	Aspect of KT Strategy	Locational Level (i.e., HEIs)		
		HKBU	EdUHK	LU
		KT strategy formulation		
			protection and promotion	and process - emphasises the linkage of research impacts to KT - perform with one's own characteristics and specialties for diversification and strength maximisation - reaching out and participatory partnership are essential - encourages contributions to the society - adopts a balance development approach - facilitates thru commitment, institutional structure and participation - resources and funding support are in need

Sources: HKBU (2014); EdUHK (2015d); LU (2009).



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Appendix 8.12

Comparative and Interpretative Analysis of the Aspects of KT Strategy among Three Cases – KT Strategy Dissemination

Manifestation	Aspect of KT Strategy	Locational Level (i.e. HEIs)		
		HKBU	EdUHK	LU
		KT strategy dissemination		
Policy documents		Strategic Plan of Vision 2020	Research and KT Strategy 2015-18 Strategic Plan 2009-12 beyond and 2013-16	Strategic Plan for 2009-2016
KT reports		Refer to Appendix 5.3	Refer to Appendix 6.3	Refer to Appendix 7.3
Interview transcripts Management perspective		- thru relationship and trust building - thru award and incentive mechanism - thru professional and supportive KT services	- thru KT promotion via multi-media - thru coordination by KT team/unit - thru global collaboration in research - thru proactive marketing of KT and research products - thru incentive award and recognition	- thru collaboration projects - thru service-learning
Interview transcripts Administration perspective		- thru promotion of KTP Seed Fund and MPCF - thru professional KT services - thru consultation by KTO - thru IPR management	- thru organising professional development workshops and seminars - thru internal consultation services - thru coordination by KT unit - thru KT promotion via multi-media - thru recognition policy in KT participation	- thru central coordinating unit - thru onsite observation and needs assessment - thru community services - thru community network and sharing - thru KT initiatives organises annually - thru networking and partnership



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Appendix 8.13

Comparative and Interpretative Analysis of the Aspects of KT Strategy among Three Cases – KT Strategy Implementation

Manifestation	Aspect of KT Strategy	Locational Level (i.e., HEIs)		
		HKBU	EdUHK	LU
		KT strategy implementation		
Policy documents	KT commitment through the strategic focus of ‘dedicated service to the community’ by community needs identifications and university’s strengths matching as well as collaboration with key stakeholders		<ul style="list-style-type: none"> - promotes KT through mass media - increases incentive to engage staff participation and develop innovative KT projects - more support and resources for multi-disciplinary KT projects - Review and establish new policies in human resources and intellectual properties protection - student engagement through participation, internships and KT entrepreneurs 	<ul style="list-style-type: none"> - Integrates S-L components into the general courses as a teaching based KT - Fosters KT thru LU’s expertise and professional training
KT reports		Refer to Appendix 5.3	Refer to Appendix 6.3	Refer to Appendix 7.3
Interview transcripts Management perspective	<ul style="list-style-type: none"> - provides ‘people-oriented’ services for staff/student engagement - consistent communication for trust building and engagement - motivates thru incentive mechanisms 		<ul style="list-style-type: none"> - actualises KT impacts thru collaborative impact research with global partners - implements KTS thru KT Team - branding building and marketing thru traditional and contemporary media - Outstanding Performance Award as incentive and modelling demonstration of KT participation 	<ul style="list-style-type: none"> - collaboration with community stakeholders through KT projects - impacts by applied or community-related research through S-L and collaboration projects
Interview transcripts Administration perspective	<ul style="list-style-type: none"> - community engagement thru KTP and MPCF - commercialisation thru IPR management - proactively promotion thru professional KT services 		<ul style="list-style-type: none"> - capacity building to facilitate understanding of and participation in KT - actualises KT impacts thru consultancies, PDC, commissioned R&D projects - Promotion through publications and multi-media - clear guideline with top management’s staunch support in KT recognition policy for staff engagement 	<ul style="list-style-type: none"> - engagement through central KT coordination, administration and funding support - engages through Service-Learning model to promote and implement KT - enrich cultural life and understanding through annual Arts Festival - realises collaboration through networking and partnership participation

Sources: HKBU (2014); EdUHK (2015d); LU (2009).



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Attached Compact Disc for Appendices 4.5 to 4.11

Translation Summaries of Interview Transcripts of seven interviewees

Appendix 4.5	HKBU A1 - Translation Summary of Interview Transcript
Appendix 4.6	HKBU M1 - Translation Summary of Interview Transcript
Appendix 4.7	EdUHK A2 - Translation Summary of Interview Transcript
Appendix 4.8	EdUHK M2 - Translation Summary of Interview Transcript
Appendix 4.9	LU A3 - Translation Summary of Interview Transcript
Appendix 4.10	LU A4 - Translation Summary of Interview Transcript
Appendix 4.11	LU M3 - Translation Summary of Interview Transcript