City University of Hong Kong
香港城市大學

Annual Report on Knowledge Transfer for 2010-2011

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1 Executive Summary

Riding on the foundation built in year 2009-2010 whereby the University laid down a firm institutional policy to support and facilitate knowledge transfer, the Knowledge Transfer Office (KTO) dutifully and steadily executed its strategic plan as outlined in last year's report. We are happy to see some encouraging results in the year under review. Licensing income continued to enjoy a steady growth of 15% to a record high of HK$5.43m. The number of patent applications soared from 40 to 52 and the number of granted patents jumped from 13 to 17.

With the new Outside Practice Policy being brought into force, low level consultancy services were discouraged, resulting in a significant drop in the number of consultancy jobs. Despite this, the total revenue was maintained due to the high value-added nature of the services rendered.

In the area of technology incubation, the University continued to strengthen corporate governance and enhance transparency on one hand, and cultivate student entrepreneurship as the driving force for future technology startups on the other hand. New initiatives in student entrepreneurship included institution of a university-wide discovery-enriched curriculum, general education courses on innovation and entrepreneurship and a business plan competition. The University also provides support to students who want to set up their startup companies by advising them on fundraising, business model and equity structure.

We understand knowledge transfer extends beyond technology transfer. Therefore the University funded six non-technology knowledge transfer projects last year through an internal competitive proposal process. It is also gratifying to note that non-technology schools and colleges and some other academic supporting units such as the Library and the University Press also participated actively in a range of valuable knowledge transfer activities.

With the availability of more space in the newly built CityU Shenzhen Research Institute Building in Shenzhen, the University is poised to initiate more research activities in mainland China so as to capitalise on the conducive policy of the mainland 12th 5-Year Plan that champions research and development.

The University fared well in collaborative and contract research.

The student placement and internship schemes were well run by many Schools and Colleges and received enthusiastic support from businesses and industry.

2 Licensing

CityU's licensing strategies, devised and implemented by KTO, adhere to the strategic plan **FEEDS**, an acronym for **F**irm institutional commitment, **E**ducation program for staff, **E**nhance IP licensing channels, **D**evelop strategic collaboration & partnership, **S**pread out to China. We closely followed the plan and have made good progress in the year 2010-2011.

2.1 Licensing Result

Out of the 28 active licensing agreements, seven were signed during this reporting year. A cash-in licensing income of HK$5.43m was recorded. This level represent a healthy increase of about 15% over the income of 2009-2010.

2.2 Building Capacity in IP Management and Technology Transfer

2.2.1 Professional Development for Technology Transfer Personnel

To better equip our technology transfer executives, the University sent them to various training courses in IP and technology licensing for professional development. The training courses and conferences that they attended include:

(a) FICPI South East Asian Drafting (SEAD) Training Course

The FICPI, short for Fédération Internationale des Conseils en Propriété Industrielle, is an association of IP professionals from over 80 countries. The programme is a 10-day intensive patent drafting course.

(b) Workshop on the Application of Special Fund for Technology Projects

The four-day course was organised by the National Development and Reform Commission in Beijing in January 2011. The course aimed to help participants understand China's key technology planning and development under the National 12th Five-Year Plan, as well as the procedures of applying for national research grants.

(c) Asia Intellectual Property Exchange 2011

The event, hosted by the Asia Intellectual Property Exchange Council, aimed to connect buyers, sellers, brokers, investors, financiers, IP owners, IP officials and legal professionals.

(d) IP Symposium and Conference in Macao

KT executives were sponsored to participate in the "Mainland, Hong Kong SAR and Macao SAR Intellectual Property Symposium 2010".

(e) The Technology Transfer and Essential IP Strategies for European SMEs in Mainland China and Hong Kong seminar, co-hosted by the China IPR SME Helpdesk and the European Chamber of Commerce of Hong Kong.

(f) Patent Forum

Forum on the Future Development of Patent System in Hong Kong, hosted by the Hong Kong Commerce, Economic and Development Bureau and the Intellectual Property Department in February 2011.

(g) IP Strategy and Innovation Seminar, co-organised by the Hong Kong Institute of Patent Practitioners and Savantas Policy Institute.

(h) The BioBay Investor Forum in Suzhou.

2.2.2 IP Training & Exchange for Staff and Students

(a) Knowledge Transfer Conference

CityU together with other seven publicly funded institutions in Hong Kong organised the Knowledge Transfer Conference to promote Hong Kong as the regional hub for innovation, knowledge transfer and entrepreneurship. KTO invited six professors from various departments to share with industrial and business leaders their technologies and inventions.

(b) IP Training Workshops

Two series of IP Training Workshops covering the fields of trademark law, patent law, copyright law and IP management were organised. The course providers were the Hong Kong Productivity Council (HKPC) and the Federation of Hong Kong Industries (FHKI). More than 60 students and staff members benefited from the workshops.

2.2.3 Entrepreneurship Training for Staff and Students

(a) Meeting with Venture Capitalists Programme

This innovative programme provided an opportunity for students and staff to meet with venture capitalists who would offer their professional advice on fundraising and commercialisation.

(b) Entrepreneurship Workshop

A two-day "Discovery – Innovation - Entrepreneurship Workshop" for students and staff was held on 12 May and 8 June. Participants were taught the essentials of business plan writing, the startup process, fundraising, marketing, business evaluation, and presentation skills.

2.3 Prospecting of Patentable IP

The University has created a wealth of knowledge, as evidenced by its documented and published research outputs. But there is always a possibility that a considerable amount of intellectual resources remain untapped. A good supply of IP is crucial to the success of knowledge transfer. Therefore it is imperative that we should create, identify and discover as much IP as we can. Here are some of the ways that KTO adopts to create or to excavate more IP for licensing:

2.3.1 Invention Disclosure for IP Protection

KTO staff proactively approach academic and research staff and encourage them to disclose their novel ideas, findings and inventions through the submission of Invention Disclosure Forms (IDF). Regular visits to academic departments were arranged to inform faculties of the benefits and latest developments of KT.

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2.3.2 I2RF Programme

The Innovation to Realization Funding Scheme (I2RF), open to both staff and students, provides funding support to projects that have the potential to be transformed into commercially viable products or services. Deliverables of I2RF will likely lead to patent applications and licensing opportunities. In the year under review, 10 projects out of 31 applications were selected, and they were awarded HK$3.87m worth of research funds drawn from the KT earmarked grant. Three projects have already secured industrial sponsorship at the application stage. Sponsors have shown keen interest in licensing the final research outputs.

2.3.3 Published Papers

With the collaboration of a global IP management firm, KTO attempted to identify patentable IP from published papers and turn them into patent applications. To date, four published papers have been selected as the basis for patent applications.

2.3.4 Collaborative Research with Industry

KTO provides supporting services on fundraising and business matching to researchers interested in embarking on contract research or bidding for public funds. Donations and sponsorship worth HK$1.57m were secured through the efforts of KTO's technology transfer team. A good example is the CityU e-book project that aims to promote e-learning among local students. The initial prototype of the e-book is ready while the hardware and software are still under development. The end-product will be rolled out for pilot testing in the near future.

2.3.5 Request for Invention (RFI)

We are also working with an international IP capitalist company to generate innovative solutions for specific problems by participating in the "Request for Invention" (RFI) programme initiated by the company. Invention topics are identified and researchers are invited to provide solution reports. So far, five solution reports relating to sustainable energy, wireless communication, network recovery, mobile internet service, and biotech sensors have been submitted, and two of them are being considered for licensing.

2.4 Marketing of IP

Marketing of IP is always the most challenging task to the licensing team. We strive to explore all possible channels to market our IP to the business and industrial sectors. Listed below are the marketing channels that we are currently utilising:

2.4.1 Direct Marketing

This year, KTO met with over 120 corporations interested in exploiting CityU's technologies. About 10% of those companies were based in mainland China.

2.4.2 Web Marketing

CityU's patents ready for licensing are posted on local and international IP platforms.

2.4.3 IP Agency

Six local and international IP or licensing agents are currently appointed to broaden CityU's IP licensing channels. To tap into the mainland market, KTO is exploring with the Shanghai Jiaotong University Science Park and certain IP agents in Shanghai, Fujian and Xiamen on licensing collaboration.

2.4.4 Publicity

We made use of the print and electronic media to promote our achievements, new inventions and commercialisation projects. Some examples of KTO's publications are *List of Patents* (brochure), *Guide to Intellectual Property and Technology Licensing* (brochure) and the *KTO Newsletter*. All of them can be downloaded from the KTO website. The public can also access KTO's online Technologies for Licensing database.

2.5 Outreach and Partnership

Through the CityU Business and Industrial Club (CUBIC), KTO forges close ties with business executives and industrialists. CUBIC regularly organises events for its members recruited from the industrial and business sectors. CUBIC membership has grown from 277 in 2009 to 746 in 2011, representing a remarkable 170% increase over the last two years.

2.5.1 Industrial Collaboration

CUBIC aligns industrialists and academics from CityU and other institutions to build platforms to advance technological development and promote cross-institution collaboration. Our partners include HKSTP, Shanghai Jiaotong University, Tsinghua University, IBM Global Cloud Labs, and the Shenzhen Chinese Academy of Sciences and Intellectual Property Investment Co Ltd.

2.5.2 Exchange with National and Overseas Institutions

KTO executives visited or received representatives from the following universities and organisations in the past year:

- Karlsruhe Institute of Technology (Germany)
- Intellectual Property Office of Tsinghua University (Beijing, China)
- Innovation and Enterprise Office of the Nanyang Technological University (Singapore)
- A*STAR - Agency for Science, Technology and Research, a counterpart of ASTRI (Singapore)
- University of Macau (Macao SAR)
- Karolinska Institutet (Sweden)
- Caspian State University of Technologies and Engineering (Kazakhstan)
- Kazakh Economic University (Kazakhstan)
- Kokshe Academy (Kazakhstan)
- Minsk Institutet of Management (Belarus)
- North-Eastern Federal University (Russia)
- The Science, Industry, Trade and Information Technology Commission of the Shenzhen Government (Shenzhen, China)

2.5.3 Seminars and Forums for CUBIC Members

- CityU Technology Transfer Forum: CityU's commercialisable technologies are featured in the Technology Transfer Forums. Two forums on wireless

communication and environmental pollution technologies were held in 2010–2011.
- Emerging Technologies Forum: Industrial and business executives are invited to talk about the latest market trends and technologies. Three forums on smart grid, UHF RFID and energy harvesting technologies were held in the period. The forum on UHF RFID took place in Shenzhen.
- Informal gatherings are regularly arranged for CUBIC's Special Interest Groups (IT & Telecom, Consumer Electronics, Life Science, and Manufacturing). Four gatherings were held in the year under review.

2.5.4 Exhibitions

KTO participated in a number of local, national and overseas exhibitions, including:
- The International ICT Expo 2011 held in Hong Kong.
- The 12th China Hi-Tech Fair in Shenzhen (CityU received five Excellent Product Awards and the Excellent Organizer Award).
- The Korea International Women's Invention Exposition (KIWIE) 2011 (CityU researchers received one gold, one silver, one bronze and one special prizes).
- The International Conference and Exhibition of the Modernization of Chinese Medicine & Health Products 2010 held in Hong Kong.

2.6 Mainland Development

Under the National 12th Five-Year Plan (2011–2015), research institutes set up by universities in Hong Kong are eligible to apply for government research grants. Through the Shenzhen Research Institute (SRI), CityU can lodge its applications for research grants in mainland China. We believe that more research will lead to more IP.

To boost research activities in Shenzhen, the SRI gives priority to CityU research centres and research project teams in the allocation of space within the SRI Building. At the same time, a new IP policy is put in place to encourage and administer patent applications generated from research projects in mainland China.

Starting from September 2011, the College of Business will begin to run executive training programmes and some of its MBA modules in the CityU SRI Building.

On licensing, KTO realized that it is not effective for the licensing team in Hong Kong to liaise with mainland enterprises. To overcome this difficulty, KTO is looking for academic institutions and companies to act as its IP agency in China. Currently the Office is liaising with the Shanghai Jiaotong University Science Park and certain IP agents in Shanghai, Fujian and Xiamen.

3. High-Level Consultancy Services

City University of Hong Kong is committed to contributing its expertise to support industry, commerce and the community. To fulfil this goal, faculty members are encouraged to engage in high-level consultancy services to benefit society and to raise the profile of the University. To provide better administrative support to faculty members undertaking consultancy projects, the University introduced a new set of Policy and Regulations on Outside Practice and Outside Work that came into effect on 1 January 2011. Since then, all consultancy projects have been centrally administered by the newly established Outside Practice Administrative Unit, rather than through CityU Professional Services Limited (CPS), a wholly-owned subsidiary of the University.

In the transitional year of 2010-2011, the University and CPS processed 128 consultancy projects with a total income of HK$19.2m.

One key project (HK$3.57m) in the area of science and engineering was commissioned by PCCW Limited, under the main contract of MTR Corporation Limited (MTRC), for development of an artificial intelligence system to optimise the scheduling of all MTRC's engineering works and related resource supply in all Urban Railway Lines, Airport Express, Tung Chung Line, Disneyland Resort Line, and the newly merged lines, i.e. the East Rail Line, West Rail Line, and Ma On Shan Line.

Another major project (HK$0.89m) was commissioned by the Planning Department to conduct a consultancy study on establishment of simulated site wind availability data for air ventilation assessments in Hong Kong. Three professors from the School of Energy and Environment and the Department of Building and Construction were engaged in this project.

Also, a team of three faculty members from the Department of Civil and Architectural Engineering was engaged to conduct a "Study of the Use of Anti-carbonation Paint for Protection of Housing Authority Buildings" (HK$0.75m). In the study, the team will examine and recommend cost-effective and practical application methods of using anti-carbonation paints for protecting Housing Authority buildings against carbonation induced corrosion of re-bars.

In the area of social sciences, one of the major projects (HK$0.78m) was commissioned by the Labour and Welfare Bureau to evaluate the effectiveness of the operation of the Community Investment and Inclusion Fund and individual projects' contribution to the overall objectives of social capital development. A research team of seven members from the Department of Applied Social Studies was formed to conduct this project. Local and international researchers were also invited to contribute to the evaluation study.

4. Research Incubation through Spin-off Companies

Research incubation and commercialisation of research outputs are important knowledge transfer activities at City University of Hong Kong. CityU Enterprises Limited (CityUE), established in 1991 as a wholly-owned subsidiary of the University, has been playing an important role in helping the University to formulate strategies for developing subsidiary companies and to establish strong links with the business and industrial sectors.

In the year 2010-2011, CityUE focused its effort on enhancing corporate governance and transparency in the administration of CityUE group companies. In compliance with the five-year exit policy as stipulated by the Finance Committee of the University, CityUE exited from two spin-off companies during the year. Currently there are seven spin-off group companies under the aegis of CityUE.

In its Strategic Plan 2010-2015, the University laid down its goal to nurture a culture of entrepreneurship and to enhance the development of subsidiary companies for research incubation and commercialisation of research outputs. Efforts will continuously be made to support the University in achieving this goal. From our past experience, we come to realise that students and graduates, rather than faculty members, turn out to be better candidates to fill the entrepreneur role. They are knowledgeable in the technology, and they can work full-time in the startup company. Most importantly, there is strong incentive for them to grow the company as it is their own career. The students do not have any potential conflict of interest because they

are not employees of the University. To support this area of development, CityU launched several initiatives in this year to nurture student entrepreneurship, such as the portfolio of training courses on IP and entrepreneurship covered in the previous sections, the New Business Adventure business plan competition, the General Education courses on innovation and entrepreneurship, and the Discovery-enriched Curriculum that emphasizes the creation of new knowledge. Students and graduates who want to form their startup companies can contact KTO for advice and support on:

- Business model of the startup
- Referral to angel investors and venture capitalists
- Availability of various government funding and support schemes e.g. Small Entrepreneur Research Assistance Programme, Life Science Acceleration Programme, and the incubation programme of the Hong Kong Science and Technology Parks
- Equity structure and corporate governance
- Leads to prospective customers
- Technology licensing

Two startup companies were formed by graduates and research assistants this year.

Three undergraduates who won the CityU New Business Adventure Competition went on to win the Hong Kong HSBC Young Entrepreneurship Award, the regional Best of the Best Award, and the Third Prize of the Lee Kuan Yew Global Business Plan Competition 2010. Their business plan proposed the use of CityU's transgenic fish technology to conduct environmental and food safety testing. It successfully obtained funding support from an angel investor. With the help of KTO, the team managed to attract HK$7.68m worth of funding support from the Hong Kong Innovation and Technology Fund and the Hong Kong Science and Technology Parks Corporation. Currently the company is an incubatee company under the Science Park Incubation Programme. Another company is an IT startup formed by a professor and his research team as shareholders. One of the key members of the research team left CityU and became the CEO of the startup. They licensed the 3G mobile surveillance technology that they developed at CityU. Their focus is on the mainland market. Although this company is struggling to stand on its feet, the young entrepreneurs were most appreciative of the opportunity to pursue their dream.

5 Knowledge Transfer in Non-technology Areas

5.1 Arts and Humanities

The University used part of the UGC KT Earmarked Fund to support KT initiatives proposed by the faculties of the College of Liberal Arts and Social Sciences (CLASS). An internal competition was held, and with recommendation from the Dean of CLASS, funding support for six projects was approved. Included in the funded portfolio are projects with a broad trans-disciplinary scope and applications reach. The projects are:

- Knowledge Transfer Website Development for CLASS
- Portable Knowledge: Portable Teaching: Creating a "Case Study Library" for Pedagogical Sharing in Liberal Arts and Social Sciences
  The project creates a case study library for students and practitioners of counselling and social work.
- Capacity Building for Hong Kong-Shenzhen Collaboration in Qianhai
  The project aims to promote public awareness of the issues raised by the Chinese Central Government's proposal to develop a "Qianhai Pilot Zone for Shenzhen-Hong Kong Collaboration in Developing Modern Service Industries".

Qianhai, located in Shenzhen, is designated by the Chinese Government as a Hong Kong/Guangdong modern service industry innovation and co-operation exemplary zone.

- Climate Policies : A Guide for Local Governments
  The project will publish an informative and concise guidebook for city officials and concerned citizens regarding climate change mitigation and adaptation, and low carbon and sustainable city policy.
- Action Counselling
  Action counselling is a group counselling approach which emphasises culturally specific counselling strategies and techniques. The project will train 40 social work/counselling students who shall disseminate the new counselling method among frontline counselling practitioners.
- An Interactive Human-Machine Dialogue System for Public Health in Hong Kong
  The project aims to develop a system that allows users to use a telephone or the Internet to interact with a computer system using natural spoken language to deliver public health information.

Most of the projects last for 12 months and an evaluation will be carried out after project completion.

5.2 K T by the Library

To automate the different book circulation processes such as book loans and returns and the processing of overdue fine payments, the Library designed and developed the EasyCheck and EasyPay Systems that employed RFID technologies. To promote and broaden the use of RFID technologies in local and mainland university libraries, CityU took the lead to form the Higher Education Libraries "UHF RFID Application" Working Group, with Tsinghua University Library, Shanghai Jiao Tung University Library and other libraries in Hong Kong and mainland China as members. This cross-border collaboration aims at creating a regional library data model standard for China, Taiwan and Hong Kong.

5.3 KT by the University Press

The University Press is actively involved in its contribution to the generation, application and dissemination of knowledge. It has to date published over 180 titles in both English and Chinese, including 57 titles for professionals in Hong Kong and elsewhere in a wide range of disciplines, including building science, business and economics, education, law, and social work.

The "Caring for Youth Series" is especially worth mentioning. Ten titles intended for professional social workers, counsellors and educators have been published and were well received. They include: *Theft and Delinquency – Juvenile Crime Prevention Theories and Practice* (in Chinese), *Youth Empowerment and Volunteerism – Principles, Policies and Practices*; and *Hikikomori and the Internet – Empowerment and Disempowerment* (in Chinese).

A pioneer of e-publishing in Hong Kong, the University Press regularly conducts seminars and training courses for local publishers. One of such courses is a series of three lectures on the opportunities and challenges brought on by the emergence of e-books. About 80 participants attended the lectures.

5.4 KT for Students

5.4.1 Discovery-enriched Curriculum

To help students better participate in KT, CityU introduced a Discovery-enriched

Curriculum (DEC) this year that offers each student a chance to create new knowledge. Integral to the DEC are CityU's unique Gateway Education (GE) courses that provide critical core skills and perspectives while setting the stage for students to participate in innovation. Of the various sets of GE courses, the most noteworthy one is perhaps the project-based Discover&Innovate GE courses. Students can take on a wide variety of projects, ranging from product design and marketing to evidence-based policy innovation projects that address social or environmental issues.

5.4.2 General Education Courses on Innovation and Entrepreneurship

These courses aim to promote entrepreneurial spirit and team collaboration skills in a multi-disciplinary learning environment. Students from engineering and sciences, social sciences, and management backgrounds will work together in their own mock companies to simulate the entrepreneurship process.

5.4.3 New Business Adventure

New Business Adventure (NBA) is an annual business plan competition that aims at nurturing entrepreneurship through helping students turn their creative ideas into feasible business plans. Participants have to attend a series of training workshops on business plan writing, team building, creativity and presentation skills. A total of 124 full-time students, divided into 26 teams, joined the competition this year. Twenty NBA participants were selected to join the seven-day study tour to the UK in May 2011.

5.4.4 Student Placement and Internship Schemes

CityU places strong emphasis on student placement and internship. Knowledge gained outside the classroom often turns out to be the most beneficial to students. Shown below is a table showing the various placement and internship schemes that CityU is running now.

	Organiser	Name of programme	Duration and brief description	No. of students and partner companies involved
1	Co-operative Education Centre, College of Science and Engineering	Industrial Attachment Scheme	Minimum nine weeks during summer holiday. It is a training programme for students who have completed their second year of study. Students are supervised by mentors of the hosting companies and CityU teachers.	169 / 88
2	Same as above	Co-operative Education Scheme	Eight to 12 months full-time internship. Students take university courses on a day-release basis during internship. They are also guided by their industrial co-supervisors in their	53 / 24

			final-year projects.	
3	Same as above	Internship Programme for Exchange Students	Summer holiday. The programme offers industrial and research internships at overseas institutions and companies.	44 / 22
4	College of Business	Business Practice Internship	Six to 13 weeks plus a two-day skills training workshop. Students work full-time at multi-national corporations during internship.	[1]135 / 46
5	College of Liberal Arts and Social Sciences	Summer Professional Internship	Six to eight weeks during summer holiday. Students participate in summer internship at selected organisations in China and Singapore.	24 / 9
6	Department of Computer Science	IT Professional Placement	10 months. Students who have completed their second year of study spend one year working at an IT company.	128 / 60
7	School of Creative Media	Internship Programmes	Students work full-time in digital and traditional media, art, and cultural companies and organisations during summer term.	51 / 44
8	School of Law	Legal Placement for LLB and JD students	Students work a minimum of 160 contact hours for full-time or part-time legal placement within two semesters of an academic year.	36 / 17
9	School of Law	Internship for LLM students	Chinese judges in the LLM programme join a 10-day court internship to be supervised by Hong Kong judges.	30 / 2

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[1] *Data for 2009/10*

6 Summary of KT Performance Indicators
(Amounts are in Hong Kong dollars)

Performance Indicators	2009/10 (actual)		2010/11 (actual)		2010/11 (target)	2011/12 (target)
No. of patents filed in the year	40		[2]52		42	46
No. of patents granted in the year	13		[3]17		14	16
No. of prospective licensees contacted	200		128		120	120
[4]No. of active licenses during the reporting year (inclusive of newly granted ones)	Type	No.	Type	No.	9 / (18)	16/(20)
	Exclusive	2 / (4)	Exclusive	3 / (5)		
	Non-exclusive	5 / (12)	Non-exclusive	7 / (13)		
	Total	7 / (16)	Total	10 / (18)		
Income (on cash basis) generated from intellectual property rights	$4.73m		$5.43m		$5m	$5m
Expenditure involved in generating income from intellectual property rights	$4.5m		$5.48m		$4.5m	$4.5m
Number of economically active spin-off companies	9		[5]11		9	11
Net income generated (or net loss arising) from spin-off companies	$3.58m		-$0.28m		$1.68m	$2.55m
[6]Number of collaborative research projects and income thereby generated	11 / $15.33m		15 / $19.52m		11 / $16m	18 / $22m
[7]Number of contract research projects (other than those included in "collaborative researches" above), and income thereby generated	69 / $17.56m		69 / $13.61m		70 / $18m	70 / $15m
Number of consultancies, and income thereby generated	202/$17.3m		128 / $19.2m		200 / $17m	100 / $19m
Number of pro bono projects or consultancies	0		6		0	0

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[2] See breakdown by country and type in Appendix 2

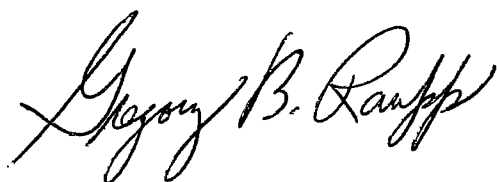[3] See breakdown by country and type in Appendix 3

[4] Figures in brackets show the number of licenses of IP not protected by patents

[5] See breakdown by type in Appendix 4

[6] Both on-going and new projects are counted

[7] Both on-going and new projects are counted

Number of student contact hours in short courses or e-learning programmes specially tailored to meet business or CPD needs	1.73 m	**1.62m**	1.8m	1.45m
Number of equipment and facilities service agreements, and income thereby generated	572 / $2.05m	**428 / $0.95m**	500 / $2m	400 / $0.8m
Number of jobs created through the new Knowledge Transfer funding	2	**20**	2	25
No. of clients served in consultancy	122	**70**	120	60
No. of manhours staff spent on consultancy	13,328	**6,777**	13,000	6,000
No. of staff participated in consultancy	193	**147**	200	150

Professor Gregory B Raupp
Vice-President (Research and Technology)

Date : 29 July 2011

Summary of Knowledge Transfer (KT) Activities Undertaken by Colleges and Schools

1. College of Business

The College of Business (CB) and its member departments continued to involve in a wide range of KT activities relevant to the business communities both locally and globally. These activities include collaborative research, collaborative programmes, professional development programmes, executive education programmes, internship programmes, volunteer work abroad programme, cultural and language immersion scheme, enterprise diagnostic residential trips, and consultancy and community services. The College partnered with world-leading accounting, financial and banking institutions/professional bodies to deliver professional training and senior executive education programmes to their employees and members. Its first research and teaching point in mainland China, the new Centre for Advanced Business Research and Executive Education inside the CityU Shenzhen Research Institute Building, is designed to act as a strategic focal point for the College's KT activities in the Pearl River Delta. The centre also helps to boost the professional education co-operation between Hong Kong and the mainland, optimisation of Hong Kong & mainland KT resources, and creation of applicable knowledge to support social and economic advancement.

On the forefront of teaching and learning, the College continued collaborating with notable universities in North America, India, and Europe to provide global EMBA modules and programmes. Good practices and strategic development of KT were discussed during the College Retreat and also at monthly lunch meetings with department heads. CB faculty members also served as members of various government advisory bodies and as directors of publicly listed companies, engaging in KT at very high levels.

2. College of Liberal Arts and Social Sciences

During the reporting period, faculty members of all departments undertook a wide range of KT activities in their own areas.

In terms of contract and collaborative research, 107 projects were concluded during the reporting period. In terms of knowledge engagement, 558 students secured local or offshore placements through various internship programmes coordinated by the College and the departments. Faculty members also conducted 44 consultancy projects, over 100 community services projects, and served on about 160 advisory/editorial boards or examination boards. In addition, faculty members actively organised and participated in conferences and seminars, delivered continuing professional development programmes, presented at press conferences, and contributed articles to newspapers etc.

The College and individual departments have included KT in their strategic plans and will continue to devote resources to encouraging and supporting members' KT initiatives. Recently, the College has established the Committee on Cross-Disciplinary Studies (CCDS), which serves as a platform for cross-disciplinary, cross-departmental collaboration through the operation of a group of Clusters. The Committee currently contains six Clusters – Global Studies Cluster; Literary, Visual, Sound Cultures Cluster; Health and Environment Cluster; Cultural Administration Cluster; Gender Studies Cluster and China Studies Cluster. The Clusters are in the process of developing professional postgraduate programmes on individual themes. Departmental KT Coordinators have been appointed to promote and support KT activities in departments and coordinate the College's KT initiatives.

3. College of Science and Engineering

In the year under review, the College of Science and Engineering (CSE) continues to actively participate in collaborative and contract research, patent prosecution, licensing activities, consultancy activities, internship programmes, community services, and industrial networking activities, etc. A substantial portion of the KT outcomes reported in section 6 was attributed to the concerted efforts of CSE faculties.

Of the new KT initiatives introduced by the member departments, one particularly worth mentioning here is the pilot-run of an Industrial Placement Scheme (IPS) launched by the Department of Electronic Engineering (EE). The IPS, introduced in semester B of 2010 - 2011, aims to provide students with hands-on experience in real work settings throughout the students' course of study. The IPS is composed of three interrelated stages, starting with a group industrial project in year two, followed by a summer placement, and ended with a final year project. The CityBook, a new type of e-book for local primary and secondary school students, is one of the projects under the IPS. The initial prototype of the CityBook is ready, while the hardware and software are still under development. Apart from the IPS, the EE Department is planning the setting up of the Departmental Technology Exhibition Centre, targeted for opening in 2012, to provide an avenue for display of the department's research outputs and state-of-the-art technologies.

4. School of Energy and Environment

The School of Energy and Environment (SEE) was formed in July 2009 with the mission to deliver cutting-edge research and professional education in energy and environment field. Within a short span of two years, SEE has actively conducted different knowledge transfer activities in energy and environment-related areas, such as sustainable energy.

One example is a project titled "Hong Kong Sustainable Energy Future: Technological and Policy Options for Hong Kong – Pearl River Delta Energy Collaboration" jointly conducted with the Kadoorie Institute of Hong Kong University for Greenpeace China. A joint academic paper will be submitted to an energy policy journal. K ey topics to be covered in the report include smart grid, building energy efficiency, renewable energy, and smart transport, as well as two case studies on green electricity market and public private partnerships respectively.

As for capacity building, SEE was involved in bridging the connection between the organiser and CityU students in the C40 Dialogue organised by the Civic-Exchange. C40 is a partnership formed by leading world cities that pledges to reduce carbon emissions and increase energy efficiency with an aim to tackling global warming and climate change.

5. School of Creative Media

The purpose of the School's KT strategy is the engagement with the community, especially its key stakeholders, around important societal issues. The medium for KT is the development and exhibition of artefacts that encourage the discourse, as well as publication of research that frames the discourse theoretically and practically. The artistic and professional works of the faculty and teaching staff are shown and published in prestigious and accessible venues, which contributes to the promotion of creative and digital media art to a wider audience, while raising the public profile of the School as well as the entire University. Faculty members' presence in events such as exhibitions and art fairs receive prominent local and international press coverage as well as critical acclaim from the public. The School's publications include books, book chapters, articles in academic and professional journals (not refereed but of high relevance to practitioners), as

well as conference proceedings. In addition, the School fosters knowledge exchange whereby School members serve as agents of knowledge transfer, such as through consultancies, research and artistic partnerships, exchanges, and internships.

a. SCM's KT Indicators

No. of Collaborative Research Projects	3
No. of Consultancy Projects	2
No. of Community Service Projects	18
No. of Publications	14
No. of Students participating in Internship Programmes	51
No. of Companies participating in Internship Programmes	44

b. SCM's KT Strategy for 2011-2012

Goals
1   Foster collaborative, transdisciplinary projects, which demonstrate not only the application of existing media technologies but also the development of new technical concepts and platforms
2   Strengthen the link between artistic creation and technological innovation
3   Develop strong international connections

Strategies
1. Develop ALiVE (Applied Laboratory for Interactive Visualization and Embodiment) as an active centre for research within the SCM faculty, based on its existing strengths.
2. Develop new linkages in the areas of cultural heritage and digital humanities with UC Merced, UC Berkeley, and other international universities with a strongly interdisciplinary focus.
3. Strengthen and consolidate existing alliances with existing partners and explore potential synergies with new partners to develop innovative and interdisciplinary projects.

6.   School of Law

The School of Law introduced postgraduate courses for mainland judges in 2009 as a result of the agreements signed between the National Judges College, the Supreme People's Court of China and Columbia Law School. By January 2012 there would be 89 graduates from its Masters of Law (LLM) Programme. Three rounds of Advanced Programme for Chinese Senior Judges were held from June 2009 to April 2011, and a total of 96 Senior Judges joined the Programme. Starting from September 2011, 20 Chinese Senior Judges will study in our Doctor of Juridical Science (JSD) Programme.

Number of Patents Filed in the Year 2010-2011 (with breakdown by country and type following the Common Data Collection Format (CDCF))

Country	Type	Number
Europe	C12	1
	H02	1
Hong Kong	G06	1
Countries not yet decided	C07	1
	C08	1
	G06	2
	H01	2
	H02	1
	H03	1
	H05	2
Taiwan	H05	1
PRC	A61	1
	C02	1
	C07	1
	C12	1
	G02	1
	G06	3
	H01	4
	H02	1
	H03	1
USA	A61	1
	B01	2
	C08	1
	F16	1
	F21	2
	G02	1
	G06	5
	H01	5
	H02	1
	H03	3
	H04	1
	H05	1
Total		**52**

Number of Patents Granted in the Year 2010-2011 (with breakdown by country and type following the Common Data Collection Format (CDCF))

Country	Type	Number
Europe	A61	1
PRC	G01	1
	H01	1
	H02	1
UK	H02	1
US	C22	1
	C23	1
	E04	1
	G06	1
	H01	5
	H03	3
	Total	**17**

Economically Active Spin-off Companies and Jobs Created

Type	Name	Business	Year of formation
Software / Solution Integration	Etin Group: Etin City Limited (BVI) & TeleEye Holdings Ltd	Design and develop advanced signal processing technologies	2000
Software / Solution Integration	CITINet Group: CITINet Systems Ltd & IRIS Systems (Shenzhen) Ltd	Specialise in providing web-based R&D project management systems and telecomm software	2000
Software / Solution Integration	MaCaPS International Ltd	Focus on development of smart-card systems	1996
Software / Solution Integration	Active & Independent Education Ltd	Design and develop educational software	2006
Bio -technology	Genetel Group: Genetel Pharmaceuticals Ltd, Jetlink International Ltd & Multigene Diagnostics Ltd	Develop novel, proprietary therapeutic and diagnostic products for medical use	2001
Bio -technology	Vitargent (International) Biotechnology Limited	Specialise in biosensor technologies for providing testing services for food, pharmaceuticals, cosmetics and the aquatic environment	2010
Mechanical Engineering/ Automation	DynaCity Technology (HK) Ltd	Specialise in the development of a range of advanced motion controller and driver products	2003
Film Industry	DCDC Ltd (BVI)	Offer services in all aspects of digital content development	2000
Mobile Technology	Shenzhen Goldradio Communication Co Ltd	Design and develop high-performance and low-cost micro-wave and RF products for wireless communication	2002
Mobile Technology	Weecall Technology Ltd	Specialise in 3G mobile surveillance technology	2009
Innovation Technology Solutions	e.Energy Group: e.Energy Technology Ltd , e.Energy Lighting Ltd & e.Energy Double Tree Ltd	Design and develop environmental friendly energy saving devices	2000