THE CHINESE UNIVERSITY OF HONG KONG

Annual Report
on
Recurrent Funding for Knowledge Transfer
in the 2009-12 Triennium

for the period 1 July 2009 – 30 June 2010

<u>Annexes:</u>

1. Knowledge Transfer Project Fund (KTPF) Projects

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Section A
Taking the Culture to a New Front
Bringing out the Institutional Character

With its outstanding research strength of international repute and the enthusiasm of its faculty in serving society, The Chinese University of Hong Kong (CUHK) has a long and good track record of engaging in Knowledge Transfer (KT). We have continued to build on a strong base of the conventional type of technology transfer (TT) – patents, licensing, contract research and consultancies, partly with the use of the funding from the University Grants Committee (UGC) for KT. In addition, we seek to achieve, not only by what we can do with the funding, but also what we can CHANGE with it. Hence the use of fund is more than a matter of implementation, but importantly, a process of innovation.

This report will provide an account of the new grounds we have sought to break, with an aim to give full play to the innovations and professional knowledge of all our Faculties in generating benefits to the wider community. The result has been more all-round KT, in both the technology based and non-technology based disciplines, which is possible only with the combined strengths of CUHK as a research-based comprehensive University.

New endeavors require some change. One of the pressing tasks is to change the internal culture for KT, which is much embedded in the environment. The new funding for KT (UGC KT Fund) has enabled us to create a new environment, new performance indicators, and thus new and stronger impact and visibility. We would like to see that KT will bring out the character and edge of the institution, in its ability to achieve:

❖ Social care;

❖ Support for the economic development of Hong Kong and beyond;

❖ Reinforcement of teaching and research.

Section B
New Environment Conducive to KT

Before the UGC KT Fund, the University has already been using its own or external resources to conduct KT. With the new funding, we should expect that the use of it will generate new or extra output, and/or a new environment encouraging and supporting KT, which did not exist before. In respect of the University's Initial Statement to UGC in July 2009, we have seen new outcomes both within and beyond what has been covered in it.

1. New Infrastructure

#### (a) Committee on Knowledge Transfer (KT Committee)

The committee has been specially set up to devise strategies, set goals and measurements, and make allocations out of the Knowledge Transfer Project Fund

(KTPF) which has been established with the UGC KT Fund. It is a high-level committee with the Pro-Vice-Chancellor (Research) as the Chairman, and comprising Associate Deans with responsibility for KT from all the eight Faculties.

KT, as the third functional pillar of the University, apart from teaching and research, is reinforced by the establishment of the committee and the commitment of the Faculties through the committee. This formal structure is a manifestation of the University's determination in conducting KT at the corporate and policy level.

(b) Knowledge Transfer Unit

A new Knowledge Transfer Unit (KTU) was established under the Pro-Vice-Chancellor (Research) and has been in operation since October 2009.   There were two staff members to start with - Manager of the Unit, and a Project Coordinator. Recruitment for other staff soon began and the new recruits have assumed duty recently in May/June/July. The new organizational structure and KTU staff are appended as follows:
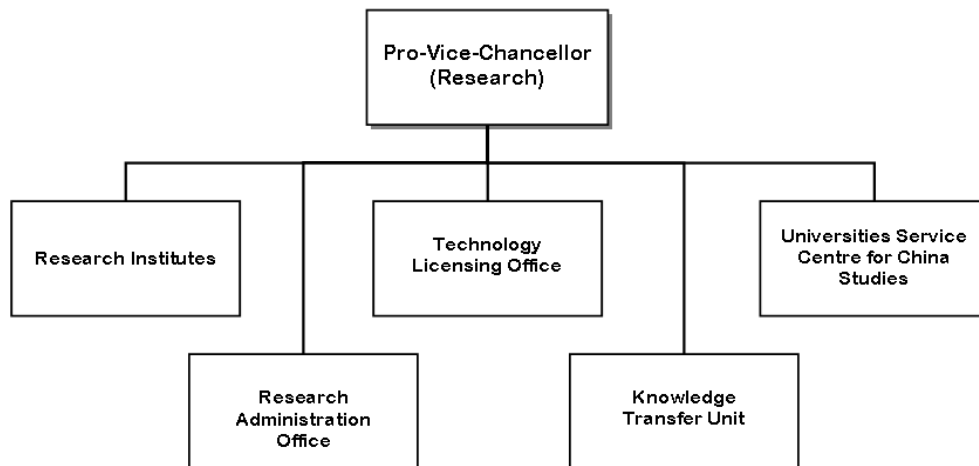
KTU Staff
   ❖ Manager, Knowledge Transfer Unit
   ❖ Intellectual Property Manager
   ❖ Business Development Officer
   ❖ Technology Development Officer
   ❖ Project Coordinator
   ❖ Project Coordinator

The whole Unit together helps devise and implement the strategies and targets set by the KT Committee, as well as coordinates all endeavors and activities for KT. Within the Unit, a team led by the Intellectual Property Manager specializes in the exploration and development of IP, seeking industrial partners and business opportunities for the University's flagship KT initiative in the Biomedical, Health and Life Sciences, as stated in the Initial Statement.

KTU offers the drive and support for KT that did not exist before. The new culture begins with the KTU staff themselves who take a proactive role to reach out to Faculties, inventors, and industrial partners. Promotion of KT through

internal and external endeavors, coordination of activities, identifying and supporting new opportunities - all form an important part in the extra output in KT to be detailed in the ensuing sections of this report.

(c) Website and Databases
http://www.cuhk.edu.hk/ktu/

A fully functional website of KTU has been set up since the early start-up of the Unit. It not only serves as an important link between CUHK/KTU and the stakeholders, and promotes KT internally and externally; but also contains two databases with constant updating that show the efforts of the University and its staff in serving the community:

i) **Database on staff serving on Government or external committees, organizations or professional bodies;**

ii) **Database on CUHK Public Lectures and Activities**.

The databases are of particular significance in

❖ recognition of our staff's contribution of time and expertise to the community;

❖ our reaching out to the community by making our knowledge more accessible, in particular, many of our public lectures and activities are conducted in public venues off campus, e.g., secondary schools, the Central Library, community centres;

❖ being a good platform for the community to know how our faculty staff are in close touch with the industry and community.

(d) Staff Personal Profiles

In the newly enhanced Staff Profile Update System, in addition to teaching and research activities, each academic staff member is required to input services provided to internal and external bodies. The record will be considered in conjunction with other information in staff appraisal. This, together with the database on community services performed by individual staff, reflect the level of importance that the University attaches to KT.

2. Changing Mindset, Expanding the horizon of KT

Before the UGC KT Fund, there was no resource to support KT other than the more conventional types such as patents and licensing. Faculties and staff generally could not relate any non-conventional activities to KT.

Sir Brian Fender, consultant of UGC for KT, shared his understanding of KT at his visit to UGC-funded institutions in 2008 that the scope of KT could be as wide as to cover patents, licensing, consultancies, as well as community projects, arts and cultural programs that engaged the public. **The outcomes of KT could also be the reputation brought to the institution, and the external support or donations that might result from it.**

With the UGC KT Fund, we have embarked on the promotion of the wide scope of KT that Sir Brian advocates, with practical cases that can be demonstrated to internal and external parties. CUHK has a particular role to put this into practice because of its strengths as a comprehensive university, offering both the arts and sciences.

(a)   KTU has therefore made it a direction and slogan that KT should be "**Knowledge for Society ❖ Engaging the Community**". On the basis of such, a sum of HK$4 million from the UGC KT Fund (under the KTPF) was set aside to support non-conventional projects with themes as follows:

Social Care
- Health Concerns
- City Planning and Environment
- School Reform
- Quality of Life

Nurturing the KT Spirit and Capacity
- Entrepreneurship
- Industry Links

(b)   We have made it clear in the criteria for the allocation of funds that these KTPF projects should serve the purposes of:

- Raising the standards of the industry, or
- Raising the awareness, understanding or quality of life of the community.

More favourable consideration has been given to projects that:

- have high social relevance and impact;
- engage the community, i.e. have their direct participation;
- have outcome and benefits that are more visible to the public, and can be more readily disseminated to them;
- directly benefit the industry or community.

(c)   Let alone the outcome which can be showcased to expand people's perception of KT, the process of calling for proposals, promoting the new concept, and the selection of projects have altogether come to give a strong message to educate and assure colleagues what KT can be and how powerful it can be.

Our message has been far reaching to all Faculties and Research Centres. Through many visits and presentations given to them and individual colleagues, a total of 45 proposals were received and 18 were funded (later became 17 when one was funded by another source). Not all could be funded mainly due to the limit of funds available. The shifting of mindset and culture gradually happens as people learn more about KT in the process; and critically, people see the recognition extended to these projects, thus injecting vigour into those who have already been contributing their time and efforts, and inspiring those who did not realize the wide horizon of KT before.

The 17 funded projects (**Annex 1**) have since then been widely promoted on the KTU website, at more visits and presentations to University groups and members, as ready showcases of what **Sir Brian** has encouraged. Some flagship cases are further elaborated in Section C of this report.

3. Systematic Efforts to Nurture the KT Spirit and Capacity

KT should pervade all Faculties, as well as both staff and students. Students will become alumni, and it will be good if the enthusiastic ones can in turn provide guidance and support for current students, together with any resources from the industry to provide the job opportunities and/or some needed fund. Here we focus on technology-based items possible for transfer to the industry or commercialization through entrepreneurial endeavours.

(a) Two set-ups of CUHK have for years been working on entrepreneurship and industrial networking. The Centre for Entrepreneurship (CfE) supports the MBA curriculum on entrepreneurship, provides on-the-job training particularly for the design industry, and organizes competitions of student business plans for commercial as well as social enterprises. The Centre for Innovation and Technology (CINTEC) cultivates partnerships with the industry particularly for projects of the Faculty of Engineering, and offers incubation facilities and professional advice for spin-off companies.

(b) The UGC KT Fund has provided the good support for us to link up and expand our work, so as to offer systematic efforts in fostering the KT culture and enhancing the KT capacity - from students, staff, alumni to industrial partners, via these projects (details in **Annex 1**):

   i) **CUHK Programs and Fellowship of Business Venturing** (KTP091126F11) Certificate courses for undergraduate and postgraduate students and members of the business community, to stimulate innovations among students and staff, and to raise the success rate of start-up companies by students.

   ii) **Vice-Chancellor's Cup of Student Entrepreneurship** (KTP091126F13) Promotes interaction between academics and business communities, offers a good opportunity for students to present their business plans to venture capitalists and entrepreneurs; with a future plan to engage the alumni network in mentoring.

iii) **Entrepreneurial Impact of CUHK Alumni in Hong Kong** (KTP091126F12)
A study which will lead to the creation of the Entrepreneurship Mentorship Program to benefit current students and recent graduates. A good initiative to systematically engage alumni in the nurturing of students in entrepreneurship.

iv) **CUHK Open Innovations Network** (KTP091126F05)
To build up a client base for technology transfer and a regular link of communication with the industry. Companies will be invited to join the program as members and enjoy benefits such as being assisted to implement the Open Innovation model in their corporate R&D operations, and updates on CUHK innovations.

4. Systems for Monitoring and Assessment

Within the nine months since the establishment of KTU, systems have been set up for the monitoring and assessment of KTPF projects, and for collecting data on KT activities and other performance indicators.

(a) Data Collection across the University

A university-wide exercise to collect data and information on all kinds of KT activities has been possible within the short time span. It has been very useful to know, by the relevant performance indicators, the vast amount of KT work being carried out at all Departments and Research Centres. Whilst some activities are obvious to be identified, some are not even understood to be KT by the people who conduct them. Hence, the exercise not only serves the annual reporting requirement of UGC, but also raises people's awareness and encourages them to do more KT through this kind of recognition.

Accounting systems have also been set up with the University Bursary to define the parameters, and to smooth out discrepancies among different units of the University due to different understandings. As a result, more consistent principles are adopted and adjustments have been made to the data and estimates in Table 9.1 of the Initial Statement, and are shown in **Annex 2** "Updates on Table 9.1 of Initial Statement".

(b) Knowledge Transfer Project Fund (KTPF) Projects

There is a stringent system of monitoring and assessment from the allocation of fund to project completion in order to ensure that the fund is utilized in the proper way and within the ambit of KT.

Each project has a separate budget which requires the approval of the KT Committee. A set of Conditions for the Allocation and Use of Funds has been developed to ensure that the use of fund be within budget, and the deliverables and reports be produced according to schedule. The Project Coordinator of each project must sign for abiding by the Conditions and participating in the dissemination of the results.

The expectations for a KT project are reinforced by the requirements of the Progress Reports and Final Report to be completed by the Project Coordinator. Apart from the more traditional items for reporting like the progress and deliverables achieved, we stress and ask about:

i) The impact on the community/industry, against the key performance indicators of the project, e.g., target audience/beneficiaries and their numbers; and the impact or improvement brought to them.

ii) Any activities/work conducted to promote the project and/or disseminate its results.

iii) Number of jobs created from the project.

iv) Will the project, in its existing or another form, continue after the end of the funding; and if so, with what resources? (We encourage projects to seek more sources of fund to sustain.)

These requirements are significant not only for administrative purposes, but more importantly, in conveying the message on the kinds of outcome expected from KT projects, and how KT projects should be different from others, such as research projects.

Moreover, each report must be signed off by the Project Coordinator, Department Chairperson and the Faculty Dean, so as to reinforce the message that KT is part of the overall performance of the Faculty and the University, thus attaching a high level of importance to KT at the policy level.

We believe that the funding and requirements for these projects are powerful in building the environment and culture for KT, since, in the first place, people generally relate resources to the level of importance. The concept of what KT is about does more effectively circulate among people by the word of mouth. People do not easily take an interest in attending a KT seminar, no matter how it is promoted. But when there is the news that a colleague or team receives funding for conducting KT, people may wish to know about it by first asking the person who gets the fund. That is why the KTU actively visits holders of funded projects and encourages them to spread the message to their colleagues. It can be expected that the effect will ripple and multiply with more rounds of funding, and with more people being involved.

5. Arrangements for Sharing of Good Practice

In promoting KT, we of course do not stop at giving out funds and getting the fund holders to spread the word. Once there is the foundation of such, we have been organizing the following seminars and events to share experience and good practice. These will be further elaborated in Section C paragraph 8 of this report.

(a) Knowledge Transfer Seminar Series: Intellectual Property Protection and Commercialization of Research Outputs

(b)   Knowledge Transfer Seminar Series: From University Research to Knowledge Transfer – The Strategy and Practice

(c)   License Negotiation Simulation Seminar

(d)   Forum on the Life Science Acceleration Program

In addition, articles in internal newsletters on successful KT stories, and promotion on the KTU and related websites, are effective in building up the momentum in the university community.

Section C
New Outputs

The new funding from UGC for KT, together with the new supportive environment we have created with the funding (which by itself is an output), has enabled new outputs which will be described below and contained in the Updates on Tables 9.1 & 9.2 of Initial Statement (**Annexes 2 & 3**).

6.   New Projects addressing Social Concern and Needs

Academic research generates benefits to the mankind which may only be realized after a long period of time. The optical fiber, for which Prof Charles K Kao has won the Nobel Prize in Physics, is an example. It can be regarded as KT today when the Internet, via optical fiber, nearly touches everybody's life everyday; however, it could not even be fully understood by contemporaries of Prof Kao at the time of the invention. In contrast with research, KT should be more direct and a step closer in time and distance to the beneficiaries. Therefore, we encourage KT projects that address social concerns and needs, and have reinforced such by allocating funds from the KTPF to 17 projects as contained in **Annex 1**.

We would like to highlight these projects according to two main themes as outlined in Section A above. They come from very different Faculties in the arts and sciences, and each serves society in its unique way using its expertise.

Social Care

(a)   Health Concerns

Apart from its outstanding achievements in teaching and research, our Faculty of Medicine is caring enough to seek to raise the awareness and knowledge of the community in health, to reduce health costs, and to help train up health practitioners in a bid to avoid medical errors – an issue of grave concern to all in the community. There are 5 projects working for these causes:

i)   **Teaching Patient Safety to Healthcare Workers** (KTP091126F06)
The significance being the cultural change sought at all levels of healthcare practitioners involved in direct patient contact, from senior clinicians to

receptionists. For workers with only basic education, the project team has been so innovative as to use cartoon books to do the education.

ii) **Training programs on the prevention of fall and fragility fracture for professionals, care providers, and the elderly themselves** (KTP091126F08)

The benefits to the community should be very direct – in reducing the suffering of the elderly, alleviating the health costs, and better care provided by practitioners especially those in nursing homes, whose service has been of much concern to the community, particularly families of the residents.

iii) **Fight against Cardiovascular Disease** (KTP091126F07)
To empower the public to prevent and control the occurrence of coronary heart disease, stroke and hypertension. A website on healthcare knowledge and sharing among support groups is promoted to patient self-help groups, community rehabilitation networks and professional nursing associations.

iv) **Online Drug Information Platform for the Public in Hong Kong** (KTP091126F10)
To address the issues of first-line treatment of mild diseases and the lack of drug knowledge among the general public. Networks are set up with community partners such as elderly centres and clinics.

v) **Health and medical knowledge for practitioners providing humanitarian assistance in disaster relief** (KTP091126F09)

As for our Department of Sports Science and Physical Education, a healthy life style is what they much care about and seek to lead our community to. Two projects are funded to motivate secondary school students and the general public to do regular exercise, with an aim to reduce the inactive population and health costs:

i) **Internet-delivered Course on Active Living for Health in Secondary Schools** (KTP091126F03)

ii) **Virtual Trainer for Exercise and Health Promotion** (KTP091126F02)

(b) City Planning and Environment

The "wall effects" of buildings in urban Hong Kong is worrying to the public because of the negative effects on ventilation. The project by our School of Architecture –

CUHK Knowledge Centre for Climate, Urban Climate, Sustainable City Planning and Building Environmental Design (KTP091126F18)

aims to educate professionals in the industry on the application of solutions invented by CUHK researchers, and to disseminate the knowledge more systematically.

(c) School Reform

In the face of challenges posed by the New Senior Secondary School Curriculum, CUHK faculty staff and researchers at the Faculties of Science and Social Science are keen to support school teachers and students to make teaching and learning of new subjects more manageable and interesting, by providing creative modules and learning materials, and building learning communities for teachers to share expertise and experience. There are four projects funded for these purposes:

i) **Communities of Practice for Physical Education Teachers' Continuing Professional Development** (KTP091126F04)

ii) **Hardware Modules for teaching DNA amplifications** (KTP091126F15)

iii) **Reagent Kits for teaching biotechnology through Forensic Investigations** (KTP091126F16)

iv) **Using Education Resources in the China Digital Science and Technology Museum** (KTP091126F17)

(d) Quality of Life

With a strong Faculty of Arts and our experts in arts and culture, the University stands a good position and has the role to enrich the cultural life of the city. Our knowledge should be extended to the community to raise their appreciation for arts and culture, from the school children level, thus raising their quality to live up to what it takes for Hong Kong to be a metropolitan city, and to contribute to the development of the Government's West Kowloon Cultural District Project.

The **Kunqu and Cantonese Opera Education and Promotion** (KTP091126F01) has been the flagship project of the Faculty in this round of funding. It has reached out to 3,000 secondary school students and the public, introducing the literary and artistic elements to them. Arts are not too far to touch when students see live performances brought to their schools, and experience close encounters with artists in demonstrations with their own participation.

In addition to the direct benefits brought to the industry and community, these new projects exemplify a sense of social responsibility which a university should embrace. "CUHK Cares" becomes a character displayed in these endeavors. It is the social impact rather than the economic return on this type of KT that should be the primary factor in evaluating the outcome. This gives rise to the "New Performance Indicators, Significance and Impact" to be further elaborated in Section D.

7. Technology-based KT Projects and Activities

On the technology front, as shown by performance indicators in the "Updates on Table 9.1 of Initial Statement" (**Annex 2**), the number of patents filed has increased by 22% from 89 in 2008-09 to 109 in 2009-10, and income from contract researches and from consultancies has recorded the totals of some HK$76 million and HK$100 million respectively for the year 2009-10. In addition, a total of HK$900,000 from the UGC KT Fund has been applied to support more projects in technology development:

(a) **A Peptide targeting the vasculature of gastrointestinal cancer for diagnosis and drug delivery** (School of Biomedical Sciences)

(b) **Suturless retinal detachment surgery** (Department of Ophthalmology and Visual Sciences)

(c) **Customized Enhanced Sound, Sentinel Speech** (Department of Otorhinolaryngology, Head and Neck Surgery)

8. Internal Promotion and Staff Professional Development

Being a relatively new initiative, the concept and practice of KT need to be actively promoted to staff and students, and professional development opportunities have to be provided to equip them for it. With the UGC KT Fund, seminars and workshops are being organized to give practical knowledge and to share experience so as to create a more supportive environment.

(a) **Knowledge Transfer Seminar Series: Intellectual Property Protection and Commercialization of Research Outputs**
- professionals from international law firms to offer practical knowledge in the practice in China, US and Europe, and to conduct one-to-one counselling meetings with individual staff and students as needed.

(b) **Knowledge Transfer Seminar Series: From University Research to Knowledge Transfer – The Strategy and Practice**
- to be presented by Prof Kin-Ping Wong, University of California, San Francisco, and Founder of Angiogen, Inc., who has the personal experience to share in research and commercialization, and in how an academic has been conducting KT for the last 26 years.

(c) **License Negotiation Simulation Seminar**
- to be jointly organized by The Licensing Society China – HK Sub-Chapter, HK Trade Development Council and EMBA of CUHK, on the legal, business and technical aspects of licensing.

(d) Forum on the Life Science Acceleration Program
- An initiative of the Hong Kong Science and Technology Parks (HKSTP) organized by KTU, with ITC and HKSTP representatives introducing the program, and an industry practitioner sharing her experience in running a life science company.

9. External Conferences being organized

In the context of KT, the primary objective of organizing conferences is to demonstrate, particularly to academics, that KT is viable and can be rewarding to both the individuals and society. For instance, in the Biotechnology Forum to be hosted by CUHK under TechnoAsia of HKSTP, we have specially invited a talk by the founder of Hai Kang Life Corporation Ltd on "From Academia to Industry: A Tale of Two Cultures".

In the KT Conference being organized by UGC-funded institutions, CUHK will showcase two flagship projects of how the faculty efforts can greatly improve the quality of life in remote villages in Mainland China, and for the elderly in Hong Kong.

(a) HKSTP TechnoAsia 24-26 Nov 2010

As Partner and Co-organizer of the event, CUHK has committed financial resources and manpower, with the support of the UGC KT Fund, to organizing the following sessions:

i)   Biotech Forum;
ii) Networks and Coding Forum;
iii) Venture Capital and Angel Investor Workshops.

(b) Knowledge Transfer Conference 8-9 Nov 2010

With the support and funds from UGC, CUHK, together with other UGC-funded institutions, is organizing this conference with content in both technology-based and community-based KT.

10. External Collaborations and Networking

The funding support of UGC has also been applied to expanding collaborations and networks with external partners for further development.

(a) CUHK-HKSTP Biotech Equipment Sharing Agreement, March 2010

CUHK and the Hong Kong Science and Technology Parks Corporation (HKSTP) have signed an agreement to enable tenants at the Science Parks and other companies to use CUHK's advanced biotechnology facilities. It supports the life science cluster industry, and thus the development of Hong Kong in

innovation and technology; and will benefit particularly SMEs and start-ups which cannot afford the expensive equipment.

(b) CUHK Delegation Visited the Science and Technology Development Centre of the Ministry of Education in Beijing, June 2010

It has been a worthy initiative to enhance mutual understanding with this important Central Government authority which oversees R&D and KT enterprises at higher education institutions across the country. A presentation was given by KTU on the edge of CUHK as a research-based comprehensive University in offering more all-round KT to benefit society.

(c) Meeting and discussion with the Guangdong Provincial Department of Science & Technology Delegation, March 2010

The Deputy Director-General, leader of the Guangdong delegation, was very keen to invite researchers to conduct technology transfer projects in collaborations with enterprises in the region. Discussion was held to share experience and explore collaboration opportunities in integrating Industry, Education and Research (產學研).

(d) Forum with Mainland Experts on Knowledge Transfer at CUHK, October 2009

Our experience in KT was shared beyond Hong Kong to about 30 experts from Mainland universities and the local industries. Participants also exchanged views on the tripartite interaction among the Industry, Education and Research sectors.

(e) Challenge Cup

KTU supports the organization of participation by CUHK and other local higher education institutions in the Challenge Cup, a nation-wide competition of student technological achievements held in the Mainland. This, together with the Challenge Cup on student business plans, are good platforms for the development of technology to be transferred to the industry, and for students to meet potential investors of their projects.

(f) Theme Conference on "New Drug R&D and Registration Administration cum Workshop on IP Protection for Medicines" in Shanghai, June 2010

The conference was attended by the IP Manager of KTU to gain knowledge of recent development in regulatory requirements and IP policies in China, which will allow our team to better assist CUHK inventors in formulating effective IP strategies for their drug discovery and development endeavours. The conference was organized by the Chinese Pharmaceutical Association and presented by senior officials from the State Intellectual Property Office.

Section D
New Performance Indicators, Significance and Impact

Whilst teaching and research at higher education institutions are pivotal to nurturing the talent and knowledge base for sustained development of society, KT should function in a more immediate and direct way to enhance the social good and economic development, just as the UGC definition of KT has it:

> "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."

CUHK takes pride in a rich and solid repertoire of KT and has over the years committed a substantial amount of resources in carrying them out. The aggregate amount in a year reaches at least the amount of university contribution as indicated in the Initial Statement, if not more. In **Annex 3** "Updates on Table 9.2 of Initial Statement", and **Annex 4** "New Performance Indicators", there are new performance indicators and a list of pertinent projects. They have been included on the basis of the wide scope of KT as defined by UGC, and very importantly, the significance and impact they achieve in extending knowledge from academia to society, and in engaging the community. Their performance is measured by indicators related to their impact, such as the target community groups served and benefitted, and the number of them.

In addition to the new KT projects supported by the UGC KT Fund, we would like to highlight some projects among the many KT activities funded by our own or other resources. They are of high significance because of their social value and impact, and in fact also their economic value which is often overlooked. A typical example is the health costs saved in treating people in hospitals when we can actually reduce the hospital occupancy rate by providing better community health services.

The social and economic impacts of KT are often inter-related. We will also show an example of how an issue of community concern is an opportunity of economic development.

11. Highlights of "Social Care" Projects

By relating university research to the daily lives of ordinary people, these projects have produced impact in breadth and depth on the improvement to the well-being of society, families and individuals. Just like projects of "Social Care" funded by the UGC KT Fund, these projects are highly visible and "touchable" by the public. Such are the attributes which distinguish KT from other endeavors. If KT is regarded as the "third mission" of institutions, like what UGC described in its letter on the KT funding mechanism, these projects well live up to what it takes to be a mission.

(a)   Jockey Club Centre for Positive Ageing (賽馬會耆智園)

Established by CUHK in 2000 with funding from the Hong Kong Jockey Club, the Centre is managed by CUHK with Prof Timothy Kwok of the Department of Medicine and Therapeutics as the Centre Director. The Centre operates through PA Company Ltd, a wholly-owned subsidiary of CUHK (as included in the list of spin-offs in **Annex 8**).

The Centre provides day care and short-term residential services for about 100 dementia patients, and training and support for their caregivers - typically family members, to reduce their stress. The services address a dire need for such in the light of the ageing population and the corresponding rapid growth of dementia cases, now at about 70,000 in Hong Kong. The significance and impact of this KT initiative can be well described by what Prof Kwok says:

"The Centre is an excellent example of contributing the University's knowledge and research findings to the well-being of the community. We are obliged to take the lead to fill the void when something necessary is lacking in our society."

"Dementia is not just a medical issue. It is a social issue."

(b)   Jockey Club CADENZA Hub (流金頌：賽馬會長者計劃新里程)

Located in a public housing estate in Tai Po, the Hub has been in operation since 2009 as a social care centre to provide one-stop health assessment and management service for seniors with chronic illnesses. In partnership with public and private doctors, the Hub is an innovative case management service that complements the services of public and private health care.

Some university research takes years to realize its practical applications whereas the services of CADENZA are based on research findings but are much more immediate in bringing the social benefits. This is the social value of KT elaborated in the sections above and what Prof Jean Woo of the Department of Medicine and Therapeutics, Director of the CADENZA project, believes - "if the research results cannot be translated into something useful for helping people, they are done in vain."

(c)   Wu Zhi Qiao (無止橋) (Bridge to China)

Shocked and distressed by the scene of children from the village of Maosi, Gansu province in Mainland China, risking their lives to cross a raging river in order to go to school, Prof Edward Ng of the School of Architecture launched the initiative five years ago to build a bridge for the villagers with the help of student volunteers.

With donations under a Foundation set up in 2007, 11 projects have been completed in five provinces, improving the lives of more than 10,000 people in rural China, and showing much care and compassion for them. This and other

projects of Prof Ng have won a number of international awards and recognition, including the most recent one – the Third Hong Kong Humanity Award, which made the headline in the local newspaper Ming Pao on 23 May 2010.

Prof Ng's projects attract donations and wide media coverage, bringing reputation to the University, which are exactly the kind of outcome that **Sir Brian** advised not to overlook, as was mentioned in Section B paragraph 2 of this report.

Prof Ng will speak at the KT Conference in November on these projects with the title "High Science, Low Technology: From Urban Climate to Village Rebuilding".

(d) Project Vision (亮睛工程)

Equally attracting donations for a good cause, the projects of our Department of Ophthalmology and Visual Sciences, led by Prof Dennis Lam, Chairman of the Department, have returned sight to 40,000 people in the Mainland and provided training to local eye doctors so that the work and impact can sustain. In addition, the Action for Vision (光明行動) Public Educational Series, and on-site Eye Screening Program, have been provided by our staff widely to the general public via the media and in the community, thus raising public awareness and serving them practically. The vast social and intangible value, which extends beyond Hong Kong, transcends high above measurements in monetary terms.

12. Highlights of Cases Contributing to Economic Development

(a) Food Research Centre

The Centre comes under the Faculty of Science and conducts research and testing on food safety and authenticity. The general public are of course concerned about the food they take in. What CUHK is doing not only addresses their concern but also contributes to the efforts of the HKSAR Government in using Hong Kong's reputation for integrity and professionalism to develop testing and certification services - one of the six priority industries identified by the Government. In addition to Prof KWAN Hoi Shan, Director of the Centre, and his team, who have contributed their knowledge; Prof CHING Pak-chung, Pro-Vice-Chancellor of CUHK has been appointed Chairman of the Hong Kong Council for Testing and Certification, offering his expertise to serve this important initiative for economic development.

(b) Combined Strengths of CUHK

For each of the Government's six priority industries, CUHK has the capacities and efforts to contribute - possible only with the University's combined strengths and dedication of staff as a comprehensive university. The list will be too long to demonstrate. We can only focus on the KT Fund and KT activities in the past year, and append some typical examples by the industry:

i) <u>Cultural and Creative Industries</u>:
- The Kunqu and Cantonese Opera Education and Promotion Project as supported by the UGC KT Fund (in **Annex 1**, KTP091126F01).

ii) <u>Education Services</u>:
- Our Faculty of Education has been offering a large number of CPD courses and consultancies, at a total worth of HK$45 million in 2009-10, to raise the professional standards of school principals and teachers, thus contributing to building a strong base for the talents and high standing required for the development of this industry (**Annex 2** Updates on Tables 9.1 of Initial Statement, **Annex 4** New Performance Indicators). Also the UGC KT Fund supported projects (**Annex 1**, KTP091126F04, F15-17).

iii) <u>Innovation and Technology</u>;
iv) <u>Environmental Industries</u>;
v) <u>Medical Services</u>:
- These are served by projects of the Faculty of Medicine and its School of Biomedical Sciences as supported by the UGC KT Fund (Section C, paragraph 7), and the numerous technological inventions, patents and R&D projects, and consultancies conducted by the Faculties of Engineering, Medicine and Science (**Annex 2** Updates on Tables 9.1 of Initial Statement, **Annex 4** New Performance Indicators). Also the UGC KT Fund supported project on Urban Climate and Sustainable City (**Annex 1**, KTP091126F18).

vi) <u>Testing and Certification Services</u>:
- As mentioned in point (a) above, CUHK has been providing testing and training services in food, Chinese Medicine and pharmaceutical products.

Section E
Financial Report

In October 2009, CUHK received from the UGC HK$11.63 million as earmarked fund for KT for the year 2009-10. The funding has been instrumental in building up the infrastructure to enable the environment for KT and to support new outputs as detailed in Sections B and C respectively. Major items of expenditure have been:

(a)   Staff costs for the newly established Knowledge Transfer unit (KTU);

(b)   funding for new projects in technology-based KT, and community-based KT via the newly set up Knowledge Transfer Project Fund (KTPF);

(c)   Expenses in support of new outputs in KT and the operations of KTU.

KTU began operations in October 2009 with two staff members and had recruited another four members. The process had not been easy in finding the right persons who had the specific knowledge and experience that would meet the needs for KT, an area which stretches across educational institutions and industry. It was only since mid-May 2010 that the other four staff members of KTU gradually came on board, with the last one just assumed duty on 19 July 2010.

Despite the above, commitments in staff costs have to be made for the full term of contracts (usually more than one year) upon employment of the staff. The 2009-10 account has to take on the full costs of the contracts and therefore has a large part of it being committed and cannot be spent on other purposes. The difficulty was raised with UGC at a meeting in January 2010. Advice was received from UGC that similar problems would possibly be encountered by other institutions, so UGC would expect the deficiency be advanced by the University, and then reimbursed by the UGC KT Fund for 2010-11 which would be provided in October 2010.

As a matter of fact, KT is such a new area for the University to embark on that the structure of the use of fund cannot be built solely on a yearly basis. The pattern of spending cannot be exactly the same every year right from the beginning. A perspective to see the spending from a 3-year point of view will give a better picture of the whole triennium. This will reflect much better how the newly defined KT has developed from the stage of building the infrastructure, to a more regular pattern of fund allocations to enable the initiatives to be carried out at different stages.

13. KT should Pervade

With the support of UGC and the University, the overall environment has been much enhanced to enable KT and to encourage staff and students to be more active in taking up KT.

The practice of KT should pervade all levels of the University -

(a) Prof Joseph Sung, who was the Vice-Chancellor designate earlier in May, gave a talk to more than 300 secondary school teachers and students on how science and technology could promote the development of public health, in support of the Faculty of Education project on helping schools through the new curriculum in liberal studies.

(b) As for KTU, instead of just being an administrative unit, it takes a marketing approach to rally support for KT within and outside the University. It promotes KT by reaching out to Faculties and staff, creates the systems to record and recognize KT efforts, conducts market research and marketing campaigns to maximize the value of IPs and solicit potential partners/investors; and organizes seminars and forums to demonstrate the possibility of transferring knowledge from academia to industry.

(c) Funding support for both conventional TT and non-conventional KT projects, spanning across all disciplines, underpins a pivotal message that all Faculties and members should have knowledge to share with and benefit the community, and therefore no Faculty or individual should have the excuse that there is not a role for them to play in KT.

14. Prospects of Growth

With a more supportive environment for KT, from the ensuing years and beyond the triennium, we would expect further growth in the output and impact of KT, especially in:

(a) marketing efforts and outcome of IP management in the Biomedical, Health and Life Sciences;

(b) more wide spread KT endeavours across Faculties producing even stronger social and economic impact;

(c) enhanced synergy of efforts in nurturing entrepreneurship and industrial networking, thus raising the success rate of business enterprising at the corporate and individual level;

(d) continuous promotion of KT through internal sharing sessions, and external publicity of CUHK as an innovative and caring university.

It is encouraging that momentum has gathered in the past year in the performance and recognition of KT. We believe that it is important to build on it, instead of forcing on the figures, i.e., pursuing pure quantitative indicators of output; lest there will be pursuits of only these figures without the essence of KT. It is more so in the pursuit of return on technology transfer which often does not come in a short term and may not even materialize. The strategy at this early stage should be for steady growth instead of sharp increases by setting high targets/estimates.

15. Resources, Recognition, Ripple

Both KT and the KTU are in an evolving process as the wider environment and this young set-up are still fluid for development. We should be participative and proactive during this transition to help shape the next triennium. The process can be described by three "R"s:

Resources: The new resources from UGC have enabled the kick-start of a new infrastructure and a supportive environment possible for more outputs and recognition for KT.

Recognition: The recognition, from both the UGC and University through the resources provided, has been so CRUCIAL as a moral support in the first place to colleagues who put in precious time and efforts among other duties to work on KT; and a driving force for wider participation.

Ripple: On top of the recognition, we seek to achieve a ripple effect by creating showcases to tell colleagues that KT "does work" –

- to plough back in further research;

- to complement teaching by introducing new perspectives to students and expanding their horizon;

- and to produce benefits for both the inventor and industries; or to bring about quality of life to the beneficiaries, which will most probably be the biggest reward to all involved.

_____
Professor Henry N C Wong
Pro-Vice-Chancellor

30 July 2010

Knowledge for society ❖ Engaging the community

Knowledge Transfer Unit

Knowledge for society ❖ Engaging the community

Knowledge Transfer Project Fund Projects

Supported by CUHK Knowledge Transfer Project Fund (from the Earmarked Fund for Knowledge Transfer provided by the University Grants Committee)

Social Care

- Health Concerns
- City Planning and Environment
- School Reform
- Quality of Life

Nurturing the Knowledge Transfer Spirit and Capacity

- Entrepreneurship
- Industry Links

History of Modern Chinese Thoughts

Knowledge Transfer Unit

Knowledge for society ❖ Engaging the community

Knowledge Transfer Projects supported by UGC KT Fund

Social Care

Health Concerns

Teaching Patient Safety to Healthcare Workers   KTP091126F06

Project Coordinator	Prof Charles GOMERSALL
Department	Department of Anaesthesia and Intensive Care Medicine
Brief Description	For increased awareness and cultural change amongst healthcare workers, high quality web-based teaching materials will be developed and produced to facilitate teaching of courses on Patient Safety to all levels of staff involved in direct patient contact - from orderlies and receptionists to senior clinicians. E-learning combined with traditional face-to-face small group teaching will be offered. There will also be train-the-trainers courses and the experienced trainers will then be able to provide the training so as to achieve cascading dissemination of the course.

Training programs of Geriatric-orthopaedics – with special emphasis on fall and fragility fracture prevention in the community   KTP091126F08

Project Coordinator	Prof Kwok-Sui LEUNG
Department	Department of Orthopaedics and Traumatology
	A week-long series of workshops and symposium will be organized for a wide range of practitioners in the field – orthopaedic specialists, geriatricians, family physicians, physiotherapists, occupational therapists, orthotists, nutritionists, and social workers in the community. They will share knowledge and experience in preventing fall and related fractures in the elderly, and be given relevant training. Free educational talks on bone health will also be offered to the elderly in the community. Community Fall Prevention Campaign

Fight against Cardiovascular Disease- An online Knowledge Transfer Project   KTP091126F07

Project Coordinator	Prof Sek Ying CHAIR
Department	The Nethersole School of Nursing
Brief Description	A new initiative to empower the public to prevent and control the occurrence of coronary heart disease, stroke and hypertension. A website will be developed for free public access to healthcare knowledge, sharing among support groups and communication with health professionals. The service will be widely promoted to patient self-help groups, community rehabilitation networks, professional nursing associations and health centres.

AMPOULE – Online Drug Information Platform for the Public in Hong Kong   KTP091126F10

Project Coordinator	Prof LEE Wing Yan Vivian
Department	School of Pharmacy
	To address the issues of increasing popularity of self-medication as the first-line treatment of mild diseases, and the lack of drug knowledge among the general public, a new online interactive drug enquiry system called AMPOULE is established for the Hong Kong public to pose any drug-related questions. The enquiries will be answered by pharmacists via email or on telephone with a personalized solution. Networks will also be set up with community partners including elderly centres, nursing homes, private physician clinics, private/chained community pharmacies, university health clinics, school clinics, public and private hospitals. More details

Technical knowledge transfer of evidence-based health and medical humanitarian assistance to field based practitioners in emergency and crisis   KTP091126F09

Project Coordinator	Prof Emily Y Y CHAN
Department	School of Public Health and Primary Care
	The Asia-Pacific region is known to have a high frequency of natural disasters and a high level of population living in absolute poverty. The project aims to transfer evidence based public health technical "know-how" at the field level to community based practitioners of relief actions and to support field-based program development. It will serve as a technical platform for intellectual exchange and training, with offerings including training course, lecture series, student practicum and website. Public Health Humanitarian Initiative

Internet-delivered Course on Active Living for Health in Secondary Schools   KTP091126F03

Project Coordinator	Prof WONG Heung Sang Stephen
Department	Department of Sports Science and Physical Education
	To integrate daily life activities such as walking, biking and taking stairs into everyday routines of 3000 secondary 1-3 students from 30 schools. The emphases are on the benefits of regular exercise and overcoming exercise barriers. It is an Internet-delivered program, complimented by an information booklet. Workshops and seminars will be organized for students and parents before, during and after the program.

Virtual Trainer for Exercise and Health Promotion: Transferring Knowledge to Practice   KTP091126F02

Project Coordinator	Prof Stanley HUI Sai-chuen
Department	Department of Sports Science and Physical Education
Brief Description	To teach and motivate users of the general public to do regular exercise. By utilizing the web and SMS messages on the mobile phone, professional knowledge, advice, personalized exercise prescription, and motivational strategies are provided via an online interactive program, together with health-fitness assessment and diet analysis. The project has the potential of reducing the inactive population and health cost, and being modified to suit the needs of children, the elderly and patients with chronic diseases.

City Planning and Environment

CUHK Knowledge Centre for Climate, Urban Climate, Sustainable City Planning and Building Environmental Design   KTP091126F18

Project Coordinator	Prof Edward NG
Department	School of Architecture
	To address the hot and important issue of climate change and urban climate, CUHK researchers have invented solutions including the Air Ventilation Assessment Methodologies to combat the so-called "wall effects" of buildings. A number of recent initiatives launched by the HKSAR Government have been based on CUHK's researches, which have profound impact on the industry in practice. In collaboration with the Hong Kong Professional Green Building Council and the Hong Kong Institute of Architects, the project aims to disseminate the knowledge more systemically to the industry and educate the professionals on the application of it by means of online information portal, fact sheets and workshops.
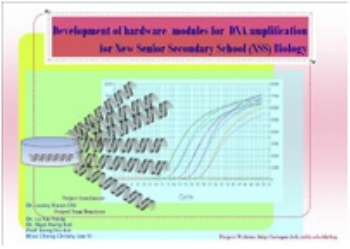
School Reform

Creating and Sustaining "Communities of Practice" for Physical Education Teacher's Continuing Professional Development (CPD)   KTP091126F04

Project Coordinator	Prof Amy HA Sau-ching
Department	Department of Sports Science and Physical Education
	To build collaborative and learning communities of Physical Education teachers to share expertise and plan around common goals for the development of a healthy active lifestyle among students, and in response to the school curriculum reform. A sustainable professional partnership system among university scholars, frontline secondary/primary school teachers and prospective teachers will be built up through a web-based communication platform, a professional portfolio system and face-to-face interaction. Teaching materials and workshops will also be provided. SSPE E-portfolio System

Development of hardware modules for DNA amplification for New Senior Secondary School (NSS) Biology teaching and learning
KTP091126F15

Project Coordinator	Dr LEUNG Kwan Chi
Department	Department of Biochemistry

In the Biology curriculum under the New Senior Secondary School Curriculum, the inclusion of the advanced biotechnology module, which covers the fast-growing DNA technologies, is not only a new domain of knowledge for students, but also a great challenge for teachers in teaching the scientific concepts. The project therefore aims at developing a set of education hardware modules that are affordable, safe and fun-rich for teachers to demonstrate the key principles of amplifying real DNA samples, which are crucial in the study of molecular biology and genetics.

More details

Development of reagent kits for biotechnology teaching through forensic investigations   KTP091126F16

Project Coordinator	Prof KONG Siu Kai
Department	Department of Biochemistry

With the implementation of the New Senior Secondary School Curriculum, secondary teachers and students are faced with the new challenge of teaching and learning advanced biotechnology. A creative learning module with reagent kits for teaching and learning of biotechnologies through a forensic investigation will be developed to enhance students' motivation of learning and establish a new model of pedagogy for teachers. The kits will consist of a set of biochemical reagents, forensic samples, apparatus, experimental protocols for investigation, worksheets, and supporting materials to investigate a series of simulated criminal cases.

More details

Using the education resources in China Digital Science and Technology Museum (CDSTM) to promote science education and literacy in Hong Kong
KTP091126F17

Project Coordinator	Dr TONG Shiu-sing
Department	Centre for Promoting Science Education

To promote the use of education resources in the China Digital Science and Technology Museum (CDSTM) to the general public, high school science teachers and students in Hong Kong. CDSTM is a large-scale project organized by the Chinese Academy of Sciences to promote science education on a national scale. The Science Faculty of CUHK had been invited by CDSTM to take part in its construction. A series of seminars will be organized for general public interest and the teaching and learning of particular science subjects. Hong Kong educators will gain access to high quality resources designed by experts all over China, which can be used to support the Science curriculum under the New Senior Secondary School Curriculum.

Quality of Life

Kunqu and Cantonese Opera Education and Promotion Project   KTP091126F01

Project Coordinator	Prof HUA Wei
Department	Department of Chinese Language and Literature

To promote the appreciation for Kunqu (昆曲) and Cantonese opera by introducing the literary and artistic elements to local secondary school students and the general public. Live performances, website, books and teaching materials will be offered with the expertise of researchers and performers from Hong Kong, Taiwan and Mainland China. These will also provide useful assistance to teachers of Chinese Language, Music and Liberal Studies in the New Senior Secondary School Curriculum.

Nurturing the Knowledge Transfer Spirit and Capacity

Entrepreneurship

CUHK Programmes and Fellowship of Business Venturing   KTP091126F11

Project Coordinator	Prof Kevin AU
Department	Centre for Entrepreneurship
Brief Description	To set up a program of non-for-credit certificate bearing courses on business venturing for CUHK undergraduate and post-graduate students as well as members of the business community. A hands-on, experiential, collaborative business-academic environment will be provided with the help of internal and external partners. The objectives are to stimulate innovations, foster a culture of entrepreneurship and knowledge transfer among students and staff, facilitate the recruitment of entrepreneurial-minded students for new start-up companies, and raise the success rate of the start-ups.

Vice Chancellor's Cup of Student Entrepreneurship (VCCE) 2009-10   KTP091126F13

Project Coordinator	Prof Hugh THOMAS
Department	Centre for Entrepreneurship
Brief Description	Business plan competitions like the Vice Chancellor's Cup of Student Entrepreneurship offer a practical way to encourage innovation and entrepreneurship among students and faculty. The VC Cup is a good opportunity for students to present their plans to panels of venture capitalists, informal investors, entrepreneurs and business service providers. It promotes interaction between academic and business communities. There is also the future plan to engage the alumni network in mentoring, and linking student teams with partners and investors.

Entrepreneurial Impact of CUHK Alumni in Hong Kong

KTP091126F12

Project Coordinator	Dr Louis LEUNG
Department	Centre for Entrepreneurship
	To engage the alumni in the nurturing of students in entrepreneurship. A multi-stage online survey will be conducted on the entrepreneurial impact of CUHK alumni in Hong Kong and the world over the past 40 years. The results of the study will lead to the creation of the Entrepreneurs Mentorship Program to benefit current students and recent graduates who are interested in starting a business with guidance from CUHK alumni entrepreneurs through formal and informal gatherings, and via a permanent website for networking and information sharing. More details

Industry Links

CUHK Open Innovation Network (COIN)

KTP091126F05

Project Coordinator	Prof WONG Kam-Fai
Department	Centre for Innovation and Technology
Brief Description	To enable the University to build a client base for technology transfer. Companies will be invited to join the program as members and enjoy benefits such as being assisted to implement the Open Innovation model in their corporate R&D operations, regular forums providing updates on CUHK innovations, and access to certain free consultancy services. It is a regular link of communication between CUHK and the industry, and a means for companies to keep pace with technological developments worldwide. More details

History of Modern Chinese Thoughts

Database on History of Modern Chinese Thoughts (1830-1930)

KTP091216F01

Project Coordinator	Prof LEUNG Yuen Sang
Department	Research Centre for Contemporary Chinese Culture
	The Database on History of Modern Chinese Thoughts (1830-1930) was developed by the Research Centre for Contemporary Chinese Culture, Institute of Chinese Studies through years of painstaking effort. The voluminous Database, which consists of more than 120 million words, incorporates historical texts on the socio-political thoughts during the period of 1830-1930. Further endeavours will be made towards the enhancement of the search and statistical functions of the Database, as well as the expansion of its corpus to include more articles, so that it will become one of the greatest and most distinguished databases of its kind.

Updates on Table 9.1 of Initial Statement
(Data as at 31 May 2010)

UGC Performance Indicators		2009/10	Targets / Estimates	
			2010/11	2011/12
1.	Number of patents filed in the year (with breakdown [**Annex 5**] by country and type)	109	114	120
2.	Number of patents granted in the year (with breakdown [**Annex 6**] by country and type)	36	38	40
3.	Number of licenses granted (with breakdown [**Annex 7**] by type)	24	25	26
4.	❖ Income (on cash basis) generated from intellectual property rights	$2,491,604	2,800,000	3,500,000
5.	Expenditure involved in generating income from intellectual property rights	$3,336,858	3,400,000	3,500,000
6.	Number of economically active spin-off companies (with breakdown [**Annex 8**] by type) *(For 2009-10, please use a <u>separate sheet</u> to specify the nature of business, year of establishment, and size of employment for each spin-off company).*	21	21	22
7.	Net income generated (or net loss arising) from spin-off companies	14,439,000	15,000,000	15,000,000
8.	❖ Number of collaborative researches, and income thereby generated	35 items $18,782,214	40 items $20,000,000	43 items $23,000,000
9.	❖ Number of contract researches (other than those included in "collaborative researches" above), and income thereby generated	206 items $76,257,494	210 items $78,000,000	215 items $80,000,000
10.	❖ Number of consultancies, and income thereby generated	277 items $100,923,114	284 items $102,000,000	290 items $105,000,000

❖ The high income in 2008-09 was contributed by a very profitable license right case.

❖ From 2009-10 on, a consistent method is adopted to work out the figures, which is, only income received in the reporting year is counted, and only those items having income received in the year is included, notwithstanding their being on-going projects for years. Hence, some wide differences may be found when compared with the figures in the Initial Statement submitted in July 2009.   Adjustments for consistency sake have therefore been made in this Table.

11.	Number of *pro bono* research or consultancies	172	175	180
12.	Number of student contact hours in short courses or e-learning programmes specially tailored to meet business or CPD needs Method of calculation adopted: Σ Courses (Number of hours in a course x Number of students) Generic courses such as MBA and MSc, and courses offered by the School of Continuing and Professional Studies are excluded as per UGC advice.	240,490 hours (705 courses, 25,248 students)	250,000	270,000
13.	Number of equipment and facilities service agreements, and income thereby generated These include the Biotech Equipment Sharing Agreement signed between CUHK and the Hong Kong Science and Technology Parks Corporation in March 2010.	3	4	5
14.	Number of jobs created through the new Knowledge Transfer funding	33 from projects funded by UGC KT Fund 6 from the newly established KT Unit	25 from new projects	30 from new projects

Outcomes in the above are together generated from offerings and endeavours of our eight Faculties and many of the Research Institutes/Centres. They have their knowledge and expertise extended to benefit the community and professions relevant to their fields of study, both locally and beyond Hong Kong.

Faculties:
Arts
Business Administration
Education
Engineering
Law
Medicine
Science
Social Science

Updates on Table 9.2 of Initial Statement
(Data as at 31 May 2010)

The first 3 items are what had been indicated in the Initial Statement.
The others are new items.

			Targets / Estimates	
Other performance indicators		2009/10	2010/11	2011/12
1.	Database on History of Modern Chinese Thoughts (1830 -1930) Agreement signed with the National Chengchi University. The database will be partially open for public use through libraries from next year.	Project in progress	Project in progress	Completion
2.	Knowledge Transfer Unit Website http://www.cuhk.edu.hk/ktu/	Done and up on web with regular updating	N/A	N/A
3.	Database on CUHK Public Lectures and Activities on KTU Website http://www2.cuhk.edu.hk/ktu/lecture/	Done and up on web with regular updating	N/A	N/A
New Items				
4.	Database on Staff Community Services on KTU Website http://www2.cuhk.edu.hk/ktu/community/	Done and up on web with regular updating	N/A	N/A
5.	Number of Public Lectures by CUHK – involving secondary school students, practitioners in the industry, people in the community	676	685	700
6.	Knowledge Transfer Project Fund (KTPF) Projects supported by the UGC KT Fund	See **Annex 4** for details	N/A	N/A
7.	Number of other KT projects or activities not funded by UGC KT Fund	202	210	218

In the Initial Statement, there was the item "Database (Research Outputs Repository)" in Table 9.2.   Now this item no longer exits because it is being discussed among the eight UGC-funded institutions for possible funding from other sources.   The most recent meeting was the Forum on Research Data Sharing held at the University of Hong Kong on 28 June 2010.

New Performance Indicators

PART ONE: UGC Funded Projects
Knowledge Transfer Project Fund (KTPF) Projects

Project code	Fac / Dept	Project	Target group	Number of people served
KTP091126F01	Arts / Chinese Language and Literature	Kunqu and Cantonese Opera Education and Promotion Project	Secondary school students and teachers and the general public	3,000
KTP091126F02	Education / Sports Science and Physical Education	Virtual Trainer for Exercise and Health Promotion: Transferring Knowledge to Practice	General public	1,000 free users, other paid users
KTP091126F03	Education / Sports Science and Physical Education	Internet-delivered Course on Active Living for Health in Secondary Schools	Students and parents	※
KTP091126F04	Education / Sports Science and Physical Education	Creating and Sustaining "Communities of Practice" for Physical Education Teacher's Continuing Professional Development (CPD)	Secondary / primary school Physical Education teachers	※
KTP091126F05	Engineering / Centre for Innovation and Technology	CUHK Open Innovation Network (COIN)	Companies in the industry	30 companies
KTP091126F06	Medicine / Anaesthesia and Intensive Care Medicine	Teaching Patient Safety to Healthcare Workers	Healthcare Workers	9,000
KTP091126F07	Medicine / The Nethersole School of Nursing	Fight against Cardiovascular Disease- An online Knowledge Transfer Project	Nursing staff	※
KTP091126F08	Medicine / Orthopaedics and Traumatology	Training programs of Geriatric-orthopaedics – with special emphasis on fall and fragility fracture prevention in the community	Community elderly, geri-orthopaedic professionals, orthopaedic specialists, geriatricians, family physicians, rehabilitation professionals	700
KTP091126F09	Medicine / School of Public Health and Primary Care	Technical knowledge transfer of evidence-based health and medical humanitarian assistance to field based practitioners in emergency and crisis	Field based practitioners	※
KTP091126F10	Medicine / School of Pharmacy	AMPOULE – Online Drug Information Platform for the Public in Hong Kong	General public	15,000 hits at website as at April 2010

KTP091126F11	Center for Entrepreneurship	CUHK Programmes and Fellowship of Business Venturing	Current CUHK undergraduate and postgraduate students, members of the business community	700
KTP091126F12	Center for Entrepreneurship	Entrepreneurial Impact of CUHK Alumni in Hong Kong	CUHK alumni and student entrepreneurs	7,000
KTP091126F13	Center for Entrepreneurship	Vice Chancellor's Cup of Student Entrepreneurship (VCCE) 2009-10	CUHK undergraduate and postgraduate students	60
KTP091126F15	Science / Biochemistry	Development of hardware modules for DNA amplification for New Senior Secondary School (NSS) Biology teaching and learning	Secondary school teachers and students	※
KTP091126F16	Science / Biochemistry	Development of reagent kits for biotechnology teaching through forensic investigations	Secondary school and university teachers and students	※
KTP091126F17	Science / Centre for Promoting Science Education	Using the education resources in China Digital Science and Technology Museum (CDSTM) to promote science education and literacy in Hong Kong	Secondary school students and teachers	※
KTP091126F18	Social Science / School of Architecture	CUHK Knowledge Centre for Climate, Urban Climate, Sustainable City Planning and Building Environmental Design	Professionals in the construction industry	※

※ Project on-going, data not yet available

PART TWO: Non-UGC Funded Projects / Initiatives

A. Arts and Culture

	Fac / Dept	Project type	Target group	Performance indicator	2009/10
1	Institute of Chinese Studies / Centre for Chinese Archaeology and Art	Public Exhibitions	General public	Number of exhibitions	2
2	Arts / Music	Publication of reading materials on music, including 《粵樂遺風: 老唱片資料彙編》、《粵調詞風: 香港撰曲之路》、《香港當代粵劇人名錄》、《戲曲年鑑 2009》、《香港戲曲通訊》	General public, researchers, school teachers and students	Number of publications	5
3	Institute of Chinese Studies / Centre for Chinese Archaeology and Art	Publication on Archaeology - 《東南考古研究》	General public	Number of publications	1
4	Institute of Chinese Studies / Art Museum	Forum for Curators of Chinese Art	Curators of Chinese Art	Number of participants	Data not available
5	Institute of Chinese Studies / Research Centre for Chinese Ancient Texts	Chinese Ancient Texts (CHANT) Database	Researchers specializing in ancient Chinese texts, libraries, and the public	Number of participants	Data not available

B. Support for Schools, Teachers, Students and Parents

	Fac / Dept	Project type	Target group	Performance indicator	2009/10
1	Education / various Depts	Teaching Development	Schools	Number of schools	2,087
				Number of teachers	42,940
2	Education / various Depts	School Improvement and Development	Schools	Number of schools	100
				Number of teachers	2,274
3	Education / Centre for University and School Partnership	Program for the Gifted and Talents and their parents	Primary and secondary school students	Number of participants	2,118

4	Centre for the Advancement of Information Technology in Education	Projects on game-based learning for students	Secondary and primary school students	Number of participants	4,405
5	Education / Educational Administration and Policy	Tools development for schools on information exchange	Schools participating in the Programme for International Student Assessment	Number of schools	700
6	Education / Centre for University and School Partnership	Cultural Program: 「中華文化・中國心」	Teachers and students of primary and secondary schools	Number of participants	540
7	Institute of Space and Earth Information Science	Supporting secondary schools using satellite images in the actual classrooms	Secondary schools	Number of schools	15
				Number of teachers	30
				Number of students	375
8	Institute of Space and Earth Information Science	Visit to the Satellite Remote Sensing Ground Receiving Station	Children from low-income families, secondary schools students and professionals from the computer industry	Number of attendees	75
9	Education / Curriculum and Instruction	Weekly column in Ming Pao introducing concepts of English linguistics	General public	Number of articles	21
10	Hong Kong Institute of Educational Research	Parents Talk – 望子成龍尊師重道	Parents of Ho Ngai College	Number of attendees	25
11	Education / Centre for University and School Partnership	Provision of Services for In-service Teacher Professional Development Course on Fostering Communities of Practice to Enhance Learning and Teaching: Three-day Zhong Shan exchange trips	Primary school teachers	Number of attendees	50
12	Education / Centre for University and School Partnership	Exchange tour to Shanghai: 小班教學上海學習交流之旅	Primary school heads and teachers	Number of attendees	20
13	Education / Centre for University and School Partnership	Exchange tour to Malaysia: 馬來西亞－多元文化生活體驗之旅	Secondary school teachers and students	Number of attendees	23
14	Education / Centre for University and School Partnership	Exchange tour to Shen Zhen: 深圳南山教學觀摩交流團	Primary school heads and teachers	Number of attendees	43
15	Education / Centre for University and School Partnership	Exchange tour to Zhu Hai: 珠海數學觀摩交流團	Primary school heads and teachers	Number of attendees	56

C. Social and Health Care

a) Knowledge for community via the media

	Fac / Dept	Project type	Target group	Performance indicator	2009/10
1	Medicine / Department of Medicine and Therapeutics	TV programmes on health care	General public	Number of programmes	6
2	Medicine / Ophthalmology and Visual Sciences	Radio programmes on health care	General public	Number of programmes	26
3	Medicine / Medicine and Therapeutics	Radio programmes on health care	General public	Number of programmes	4
4	Medicine / Medicine and Therapeutics	Newspaper articles on health care	General public	Number of articles	31
5	Engineering / Centre for Innovation and Technology	Newspaper articles on Information Technology	General public	Number of articles	51

b) Health care

	Fac / Dept	Project type	Target group	Performance indicator	2009/10
1	Medicine / Ophthalmology and Visual Sciences	Project Vision: Cataract-Blindness-Free-Zone Project	Patients in Hainan Province, PRC	Number of Charity Eye Centers established	3
				Number of free cataract surgery conducted	40,000
				Number of local doctors trained	20
2	Medicine / Ophthalmology and Visual Sciences	Project Vision – Rapid Assessment for Avoidable Blindness Project	Aged 50 or above in Hainan Province, PRC	Number of patients examined	3,422
				Number of villages visited for the assessment exercise	136
3	Medicine / Ophthalmology and Visual Sciences	Eye Screening Programs	General public	Number of attendees	660

4	Science / School of Chinese Medicine	Teaching Clinics for Chinese Medicine	General public	Number of clinics	9
				Number of patients benefited	500,000
5	Medicine / Medicine and Therapeutics	CADENZA 18-District Programme	General public	Number of participants	1,078
6	Medicine / Medicine and Therapeutics	Jockey Club Centre for Positive Ageing	Dementia patients and care providers	Number of patients	100
7	Medicine / School of Pharmacy	Pharmacy Outreach Projects conducted at elderly centres	Aged people	Duration	5 hours each for 7 centres
				Number of attendees	283
8	Medicine / School of Pharmacy	Impact of an Interdisciplinary Approach on Symptom Management of Newly Diagnosed Depressive Patients	Depressive patients	Number of participants	38
9	Medicine / The Nethersole School of Nursing	Care of chronic obstructive pulmonary disease patients receiving non-invasive ventilation	Practicing nurses in local hospitals	Number of video clips produced for the use of teaching	18

D. Community Services

	Fac / Dept	Project type	Target group	Performance indicator	2009/10
1	Social Science / School of Architecture	Wu Zhi Qiao (Bridge to China)	People in remote parts of Mainland China	Number of projects in 5 provinces	11
				Number of people served	10,000
2	Engineering / Systems Engineering and Engineering Management	Cantonese text-to-speech technology for Hong Kong Blind Union to read newspaper	Clients of Hong Kong Blind Union	Number of users	100
3	Centre for Research and Development of Putonghua Education	Putonghua Diagnosis and Pronunication Correction Service	General public	Number of participants	109
4	Education / Sports Science and Physical Education	Development of physical fitness tests for pre-employment screening of Hong Kong Police Force	Police job applicants, trainees and incumbents	Number of participants	1,200
5	Social Science / School of Journalism and Communication	Opinion Survey on public issues	General public	Number of participants	17,769
				Number of surveys	18

E. Entrepreneurship Education

		Project type	Target group	Performance indicator	2009/10
1	Centre for Entrepreneurship	Entrepreneurship for Design and Creative Business 2009	Designers	Number of attendees	30
2	Centre for Entrepreneurship	Accounting Workshop for Design & Creative Business	Designers	Number of attendees	30
3	Centre for Entrepreneurship	Forum on Creative Entrepreneurship: Challenges and Opportunities in Connecting Creativity and Business	Designers	Number of attendees	100
4	Centre for Entrepreneurship	Initial Study on the Roadmap for Design Entrepreneur in Hong Kong – Case Study Workshop	Designers	Number of attendees	10
5	Centre for Entrepreneurship	Hong Kong Social Enterprise Challenge 2010	Students in diploma, bachelors, masters and doctoral degree programs	Number of attendees	27

Number of Patents Filed in 2009-10 with breakdown

Country	Faculty of Engineering				Faculty of Medicine									Faculty of Science			Total
	CSE	ELE	IEG	MAE	ACP	CPY	DRI	MEDT	ORT	OVS	PHA	SUR	CEID	BCHSCI	BIO	CHM	
PCT			3	1	1				1					1			7
US	3	7	3	2		9	1	3	1	1	2	1	1	1		1	36
Australia			1			3											4
Canada						2											2
China		9		3		1		1	2			1	2	3	4		26
EAPO						1											1
Europe			2			4											6
France						1											1
Germany						1											1
Hong Kong		1		2											2		5
India			1														1
Ireland						1											1
Israel						1											1
Japan															1		1
Korea			1			3											4
Mexico						1											1
Netherlands						1											1
New Zealand						1											1
Singapore						4											4
South Africa						1											1
Sweden						1											1
Switzerland						1											1
Taiwan						1											1
United Kingdom						1											1
Total	3	17	11	8	1	39	1	4	4	1	2	2	3	5	7	1	109

Faculty of Engineering
CSE   Dept of Computer Science and Engineering
ELE   Dept of Electronic Engineering
IEG   Dept of Information Engineering
MAE   Dept of Mechanical and Automation Engineering

Faculty of Medicine
ACP   Dept of Anatomical and Cellular Pathology
CPY   Dept of Chemical Pathology
DRI   Dept of Diagnostic Radiology and Organ Imaging
MEDT   Dept of Medicine and Therapeutics
ORT   Dept of Orthopaedics and Traumatology
OVS   Dept of Ophthalmology and Visual Sciences
PHA   Dept of Pharmacology
SUR   Dept of Surgery
CEID   Stanley Ho Centre for Emerging Infectious
        Diseases, School of Public Health

Faculty of Science
BCHSCI Dept of Biochemistry (Science)
BIO   Dept of Biology
CHM   Dept of Chemistry

(as at 31 May 2010)

Number of Patents Granted in 2009-10 with breakdown

Country	Faculty of Engineering				Faculty of Medicine						Faculty of Science		Total
	Dept of Computer Science & Engineering	Dept of Electronic Engineering	Dept of Information Engineering	Dept of Mechanical & Automation Engineering	Dept of Chemical Pathology	Dept of Medicine & Therapeutics	Dept of Physiology	Dept of Surgery	School of Biomedical Sciences	School of Pharmacy	Dept of Biology	Dept of Chemistry	
US		3	2		4	1		1				1	12
Australia					2								2
China	2	3	1	1		2	1			1	2		13
Europe									1				1
Germany										1			1
Hong Kong		3			1	2				1			7
Total	2	9	3	1	7	5	1	1	1	3	2	1	36

(as at 31 May 2010)

Number of Licenses Granted in 2009-10 with breakdown

Type	Faculty of Engineering				Faculty of Medicine	Institute of Chinese Studies	Communications and Public Relations Office	Total
	Dept of Computer Science & Engineering	Dept of Electronic Engineering	Dept of Information Engineering	Dept of Mechanical & Automation Engineering	Dept of Orthopaedics and Traumatology	Research Centre for Chinese Ancient Texts	Audio-Visual Division	
Exclusive	2	2	1	1	1		1	8
Non-exclusive	1							1
End User Licence	4	3		3		5		15
Total	7	5	1	4	1	5	1	24

(as at 31 May 2010)