

Annual Report on Activities and Advancement of Knowledge Transfer

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FY2012-13

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THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學

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1. Review of FY2012-13

FY2012-13 signified the first year of the new triennium (FY2012-15) of UGC Knowledge Transfer (KT) funding programme, it also saw the commencement of the strategic plan of the PolyU (2012-18), which the University had enlisted KT, commercialization and service to community as one of the major strategic areas in the coming years, with a number of 'first ever' KT and entrepreneurship initiatives officially launched in this fiscal year.

With the continuous financial support from UGC through the KT Fund, the University was able to advance in new KT endeavours, to explore new channels for knowledge / technology transfer, and to improve its existing KT practices, governance and effectiveness of established KT mechanisms in consultancy and licensing. In FY2012-13, the University continued to nurture student / graduates' innovation and entrepreneurship in connection with knowledge transfer. PolyU's researchers also strived to develop applications with their research expertise and innovations to create impact to the industry and society at large.

This report summarizes key KT activities and developments of PolyU in FY2012-13. Observations and suggestions from UGC in the past have been duly considered for improvement in related KT developments and practice.

2. Knowledge Transfer: Culture, Strategies and Practices

Developing Culture Conducive to KT

As an application oriented university, PolyU carries a long traditional culture in working closely with industrial partners to make use of academic knowledge and expertise for the benefit of the community. The University has a set of established KT policies and incentive schemes to support researchers in KT engagement and technology commercialization, including but not limited to those activities highlighted in Section 3.2 below.

As reported in FY2011-12, the University Council set up a KT Committee to review the pertaining KT framework, policies and practices of the University with recommendations to improve the governance, discipline and effectiveness of KT programmes and activities. In the next couple of years, the University would follow the Committee's recommendations to consider KT achievements that would take into account varied practices due to fundamental difference of a disciplinary nature. For example, humanities departments seldom become involved in licensing but they can be very active in KT through field practice, consultancy and service learning.

Promoting KT as a Major Strategic Direction

In 2012, PolyU set out its 6-year strategic plan (2012-18) with knowledge transfer as one of the key areas augmenting the University's two core activities in teaching and research. Underpinned by the philosophy of being professionally disciplined in KT and entrepreneurship activities that would "do well and do good" in nature, the overarching aims were to (i) govern responsible knowledge transfer and (ii) promote entrepreneurial thinking, contributing to the sustainable development of PolyU and the community. The following key strategic goals in relation to KT were set out for the next few years:

1. To implement KT with enhanced governance, discipline and recognition, in furthering the principles of the current KT policy.
2. To leverage participation from global business and community networks in enhancing the impact of PolyU's effort.
3. To create an ambience that values innovation, entrepreneurship and community service in motivating collaboration and sharing of best practices.
4. To provide continuing and life-long learning in fulfilling the strategic needs of the community.
5. To advocate social and ethical values in delivering entrepreneurship programmes and KT.

With the strategic plan in place, additional resources were availed to jump start new KT related action items, putting PolyU in a better position to meet industries' and communities' needs in innovation and knowledge transfer, and at the same time nurture entrepreneurship development with innovations and technologies initiated by students, graduates and staff in both Hong Kong and the Chinese Mainland.

Improving KT Practices and Mechanisms

In FY2012-13, the University continued to follow up KT Committee’s recommendations by involving external members in patent filing, licensing, and related decision-making through structured organizations and processes. Internal assessment process for licensing had also been substantively revamped to account for efficiency and transparency. Furthermore, PolyU Technology & Consultancy Co. Ltd. (PTeC), the commercial arm of the University, had also taken solid step to upgrade its consultancy management system to take advantage of recent advancement in information technology.

3. Knowledge Transfer: Focused Development & Activities

3.1 Creating Impact with Innovations & Technologies

During the reporting period, PolyU continued to work on research innovation and commercialization of key technologies with impact. Their applications would not just bring about new product standard and practice for the industries (e.g. food safety with advanced testing and anti-counterfeiting technologies, functional textile materials, real time structural health and transport safety monitoring technologies), but also enhance quality of life and well being of the community through new drug development, green building technologies, alternative energy generation etc. for a more sustainable environment.

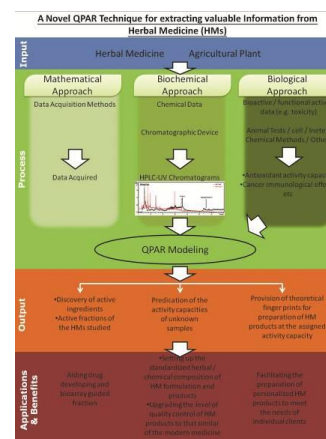
Food Safety and Herbal Medicine

With numerous reports on food chain contamination and poisoning, food safety had become a major concern both locally and nationally. PolyU’s Food Safety and Technology Research Centre had become very active in raising food safety standards in partnership with both local and international organizations as well as developing functional food products and drugs from traditional Chinese medicinal herbs.



With new food safety microbiological tests, the Centre had been carrying out testing services for numerous food establishments to ensure good quality control of food supplies. In terms of people development, the Centre helped with raising employees’ awareness and standards in fast food chains such as Cafe de Coral and McDonalds through tailored training programmes on food safety, legislations and hazard analyses.

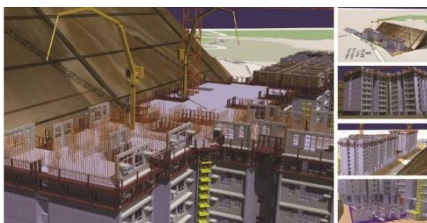
For functional food and medicinal products, contracted researches were conducted as consultancy in herbal medicine for prevention and/or treatment of chronic diseases such as cardiovascular diseases, cancer and postmenopausal osteoporosis. Animal research on the effects of Chinese medicinal herbs such as lacto-wolfberry, on calcium metabolism and bone properties, had also been carried out for an international nutrition organization. More recently, a global supplier of PinWu Gastrodia engaged our researchers to develop a series of food snack and beverage products using PinWu Gastrodia, as the herb was known for its effect in mitigating a number of geriatric conditions, such as Alzheimer's disease, migraine headaches and depression. These studies would bring us closer to see a new range of health food products integrating herbal effect to modern food production technology.



The Puerarin Phospholipids Complex Capsule (PPC), a new drug developed by PolyU with the novel phospholipids complex formulation technology for curing cardiovascular diseases, is the first candidate in Hong Kong to have secured clinical trial licence from the Chinese Food and Drug Administration. The drug was licensed to a reputable Traditional Chinese Medicine (TCM) company in Hong Kong for long term drug development.

Urban Sustainability

Every urban dweller, being it an organization or individual ought to be conscientious about safeguarding our dwelling places to reduce harm to the environment for sustainability. PolyU has been known for its advocacy and applications with sustainable solutions to problems in densely populated urban development in Hong Kong



and the surrounding regions, with collaborations spanning across several disciplines from traditional engineering, environmental, construction to the social science departments with the government sector, industry and NGOs for a greener metropolis with energy consumption and carbon footprint properly watched and controlled.

PolyU's innovative Intelligent Building Life-Cycle Diagnosis and Optimization System can help solve air conditioning glitches and cut costs in high rise buildings and can be implemented at various stages in a building's life-cycle, from the early stages of design, construction right up to when a building is in operation. Our researchers, in partnership with a listed construction company, developed and applied energy efficient and optimal control strategies for complex HVAC systems. One such system was used for optimal energy consumption at the International Commerce Centre with a staggering annual saving of 7 million kWh, or 18% of the energy consumption on air conditioning.



PolyU also participated in a major reconstruction project of the Kai Tak Nullah, involving reconstruction, improvement and rehabilitation of the Kai Tak River from Wong Tai Sin Police Station to Tung Tau Estate. This included simulated tests to study water stages and flow characteristics and optimal design arrangements at channel junctions and transitions to account for seasonal changes.



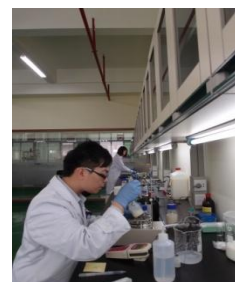
Our researchers and engineers teamed up with the Water Supplies Department to create in-line mini-turbines in Hong Kong's network of underground water pipes to produce energy from water flow to run monitoring device buried inside pipes. With optimal installation in the water supplies network, the array of turbines could save about 700 kWh of electricity and reduce CO₂ emissions by 560 kg each year. The invention won a Silver Medal in the 40th International Exhibition of Inventions of Geneva, Switzerland in April 2012.

Odour management and air quality in a densely populated city like Hong Kong post many challenges to the government. Numerous studies were conducted on roadside volatile organic compounds, wind engineering and their effects on building design. The latter resulted in the compilation of a comprehensive code of practice for wind effects and building design in Hong Kong, for nurturing sustainable programmes to preserve Hong Kong's living environment.

In June 2013, PolyU established the Research Institute for Sustainable Urban Development, pooling together multi-disciplinary research teams within the PolyU to provide a solid platform for advancing the frontier of urban sustainability with synergy beyond impact of any single discipline.

Anti-Erasing (ATE) Ink (抗擦墨) for Anti-Counterfeit of Food Packaging

Unscrupulous trades-people can easily alter the date stamp on food packages with an acetone-based wipe. For food items with short shelf life, such unethical actions could cause serious health problems. After more than 3 years collaboration with an industrial partner, our researchers applied our patented nanoparticle synthesis method and nanoparticle formulation into an anti-erasing (ATE) ink. The technology was licensed to our industrial partner for starting an industrial scale production of both the nanoparticles and ATE ink. The new printing systems with ATE ink are currently being rolled out onto carton packaging production lines in one of China's biggest dairy products manufacturers. With the adoption of ATE ink, consumers can be rest assured that the expiry dates on their purchases are off-factory prints.



Intelligent Fabrics / Smart Garments



PolyU has made every endeavour to be at the forefront in the development of intelligent fabrics and smart garments. The Nu-torque Singles Ring Yarn technology, considered in many ways an industrial breakthrough in yarn production, was licensed to an Indian cotton yarn company, bringing the technology to factories in over 6 countries. To further improve the ease of transfer of the technology, PolyU collaborated with a Shenzhen company to develop an all-purpose electronic control unit for various types of spinning machines for adopting the Nu-Torque spinning system. With such aspired effort and industrial partnership, the impact of the Nu-torque technology on the textiles industry will become more widespread.

Shape Memory Fabrics was another novel technology developed by PolyU. Going far beyond the claims of conventional wrinkle-free materials, garments made from the treated fabric can quickly recover their original pre-set shapes, with creases reappearing in the correct places and no more issues in bagginess. The technology had been taken up by a multinational premium fibres firm to develop shape memory hosiery.

Other promising innovations in this area include the Imaging Colour Measurement system (ICM), the world first measurement instrument capable of measuring colours of multi-colour samples ranging from printing fabrics, yarn-dyed fabrics, laces, yarns, threads, etc. The technology will help eliminate conventional industry problems such as fabric colour disagreement between buyers and manufacturers. A Gold Medal in the 41st International Exhibition of Inventions of Geneva, Switzerland (April 2013) was awarded to this technology.



The i.Dummy, a multi-modal mannequin that can flexibly change its shape and dimensional configuration, does not only reduce the need for multiple sized mannequins but also provides a means to bring in valuable process and product innovation to tailored or ready-to-wear clothing, especially in a world that is more and more dominated by internet purchases.

3.2 Showcasing our Technology Value for Industry Partnership

In driving and promoting KT, PolyU actively participates in different marketing activities to enhance the awareness of PolyU's applied research outcome and connect the technologies and innovations to targeted companies. Different channels and media (e.g., exhibitions, seminars, publications, press releases / conferences, online and physical technology showroom) were readily employed to promote the technologies to targeted audience. Additional marketing focus will be put on selected technology areas of strategic importance to the University and to the community, with potentially big impact that can benefit the industry and society.

Theme-based Exhibitions and Targeted Tradeshows

In the past year, PolyU participated in a number of exhibitions such as International Exhibition of Inventions of Geneva, Shenzhen Hi-Tech Fair. Our presence in major exhibitions helped connect PolyU's innovations and expertise with industries and investors, and opened up KT opportunities at international level. Our achievements in international invention exhibitions received wide publicity coverage from local, national and international media.



PolyU's interdisciplinary research expertise on railway monitoring system was showcased in Rail Solution Asia 2013 in Malaysia. As one of the highlighted technologies, the "Advanced Fibre Bragg Grating (FBG) Railway Monitoring System" had been successfully deployed in railway systems across different countries in the region. The show further boosted visitors' understanding of the proven application value in the rail industry.

A wide spectrum of PolyU's applied technologies was exhibited in major local tradeshows, such as the Electronics Fairs, ICT Expo, Eco Expo Asia, International Medical Devices and Supplies Fair. The overall reach was estimated to be over 200,000 people in the trade.

Business Matching with Investors

Exclusively invited by Credit Suisse to showcase technologies of future potential to investors, PolyU introduced 5 key innovations at the Salon Innovation Fair organized by Credit Suisse. Interests from the investors are being followed up.

KT Publications

A brand new Chinese publication titled 《科技創新變未來》 incorporating more than 75 outstanding PolyU applied research outputs was published and launched in November 2012 to exemplify the University's efforts and achievements in knowledge transfer. It was a complementary print of its English variant "Indistinguishable from Magic" that was published in early 2012.



To keep the industry abreast with PolyU's latest research breakthroughs, a monthly e-newsletter named "Technology Frontier" was being circulated to nearly 4,000 business executives and industrialists. Articles featuring specific technologies were also submitted to trade magazines to promote PolyU's research outputs to targeted readers. In the year, over 15 articles were published in prominent trade magazines such as The Chinese Manufacturers' Association's Monthly Bulletin 《企業雄才》 and The Yellow Pages.

Distinguished KT Awards

To encourage researchers and commercial partners to participate in KT, awards were given in recognition of those actively engaged in KT related activities. In 2012, 11 PolyU researchers and teams received the "Distinguished Knowledge Transfer Excellence Awards" while 11 partners were presented with "Distinguished Knowledge Transfer Partnership Awards" for their distinguished contribution in university-industrial partnership to bring about PolyU's knowledge and technologies to the real world. An Awards Presentation Ceremony was held to celebrate their accomplishments in KT.



Technology & Networking Seminars

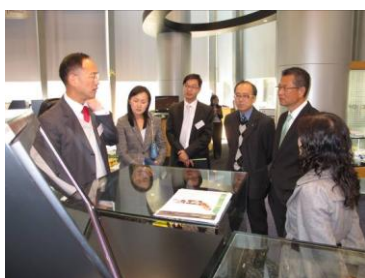


PolyU is actively establishing commercial partnerships for KT. Technology Seminar is one of the most effective channels to promote our technologies and expertise to targeted industries. Seminars about nanotechnology on functional food development and rehabilitation and elderly care technologies were organized in the reporting period. PolyU also partnered with trade associations to organize seminars for their members, such as Hong Kong Research Institute of Textiles and Apparel (HKRITA), The Hong Kong General Chamber of Commerce (HKGCC) and Chartered Institution of Civil Engineering Surveyors (ICES).

To facilitate exchange of ideas and KT between business and academic, PolyU has been arranging regular breakfast meetings for scholars, scientists and business people notably from the CEO Club.

Publicity

To attract commercial interest and knowledge transfer partners, PolyU publicized major research outcome regularly. The recent publicity campaigns for "i.Dummy" and "Brain Training Device for Stroke Recovery" created coverage by over 20 local and international media, and had led to serious enquiries for commercialization.



Technology Showroom and Technology Portal

Regularly displaying about 50 outstanding PolyU research achievements for commercialization, the "House of Innovation" is a major technology showroom to promote our innovations to potential partners and users. As a focused point demonstrating PolyU's technology and application capabilities, the place is a frequent site for visit by delegations from industry, government and academics from different countries.

In order to extend the reach of PolyU research achievements to students and general public, a summer promotion programme was launched in 2012 to make the House of Innovation a true open house to the public daily during the summer months from June to August. Twelve elite PolyU students were trained as Student Ambassadors to introduce technologies for guided tours. More than 4,000 visitors visited the House of Innovation over the year.

To enhance global outreach, a virtual technology showroom on the cyberspace is also available for free access round the clock, with new projects being updated regularly. The “Virtual House of Innovation” is for internet access and viewing around the world. Meanwhile, a new technology portal had been developed to provide a comprehensive and user-friendly online search engine to search PolyU’s technologies featured through on-line posters, videos, animations and thematic e-brochures.

3.3 Disseminating Knowledge for Community Benefits

During the year, PolyU organized a number of knowledge dissemination activities to foster KT culture with featured topics for academics, business executives, students and general public. Selected examples are highlighted below.

KT Forum

In November 2012, PolyU organized a half-day KT Forum together with the International Strategic Technology Alliance (ISTA) under the theme “East-meet-West: Sharing of KT Practices and Models”. Speakers from Canada, Australia, South Korea, Singapore and China shared their best KT practices in their own perspective with a group of around 70 senior higher education and research management executives at VP or directorate level in Hong Kong and Chinese Mainland.



InnoCarnival 2012 & Mobile Apps



The PolyU pavilion at InnoCarnival 2012 served to illustrate to the community how the society benefited from PolyU’s extensive range of high-impact research outputs. This showcase not only attracted thousands of visitors including the Financial Secretary, and the Secretary for Commerce and Economic Development, but was also widely covered by local and international media. An interactive mobile application embracing augmented reality was also launched at the event for general public to learn more about PolyU’s research achievements while having fun.

InnoAsia

PolyU worked with Hong Kong Science & Technology Parks to organize “InnoAsia 2012”. Featuring the theme “Innovations for Green and Healthy Living”, InnoAsia provided a network with best minds on sustainable business and technology innovation, gathering industry leaders, academia and investors together for collaboration opportunities. The 4-day event consisted of main conference, technical forum, workshops and business matching sessions.

Others

In addition to the highlighted activities above, a wide variety of programmes, symposia, conferences, workshops, etc., were organized to facilitate KT and knowledge dissemination to different audience in the community and industries. Just to name a few, we had the International Conference on Life-Cycle Structural Engineering by PolyU’s Faculty of Construction and Environment; the International Functional Food Symposium by PolyU’s Department of Applied Biology and Chemical Technology; and the Workshop on Frontiers in Biomedical Imaging by PolyU’s Interdisciplinary Division of Biomedical Engineering; the “Hong Kong Environmental Industry Summit 2012” in partnership with Junior Chamber International Peninsula; and a forum on “The Economic Development of China and Implications for Hong Kong” jointly organized with the CEO Club.



3.4 Cultivating Do Well Do Good Entrepreneurship

With the support of the KT fund in the last two years, PolyU had been able to nurture an environment conducive to innovation and entrepreneurship through supporting students and graduates' innovations and entrepreneurial projects / ventures through seed funding programme. The year saw early success of some of the new products and services, most with good business models underpinned by the "Do Well Do Good" ethos.

Funding Do Well Do Good Entrepreneurial Projects

Since its inception in 2011, the PolyU Micro Fund Scheme has been gaining momentum with community-wide recognition within PolyU and the local entrepreneurial communities. The 180 applications received in 2013 added to the total number of 600 applications over 3 years. For the 2013 round, 19 entrepreneurial propositions / ventures were awarded \$100,000 seed fund for their startup business after rigorous assessment by a panel comprised of external experts. Furthermore, 7 student projects won awards for their innovative ideas to enhance social inclusion.



Past awardees continued to do well with 15 of them securing further funding and incubation support close to \$6 million from investors and incubators like CyberPort, HKSTPC and HK Design Centre. Larger size venture capital investments are being negotiated by a few start ups for imminent business expansion.



In addition, some of the products / services launched were highly regarded not just by customers but also by experts in the field. A young team won the Red Dot Design Award Best of the Best 2013 (Watch & Jewellery) with a specially designed watch with upcycled materials and labour force from sheltered space. Other teams also won awards like first runner-up of Social Venture Competition Asia, Best Business Startup (Bronze) in Hong Kong ICT Award, etc.



Cultivating Innovation and Entrepreneurship Ambiance

To augment the traditional classroom learning, PolyU, through the Institute for Entrepreneurship, organized different "out-of-classroom" learning activities - study mission, workshops and visits for better understanding of entrepreneurship and engagement with startup entrepreneurial environment at both local and international level.

Study Mission

In August 2012, a group of 25 Micro Fund recipients joined a 7-day study mission visiting university science parks, incubation centres and creative industry communities in Shanghai. Together with local startup founders, participants joined a 3-day entrepreneurial bootcamp organized by the Shanghai Technology Entrepreneurship Foundation for Graduates (STEFEG). The study mission provided the participants with invaluable experience and exposure at both personal and team level, with significant cultural enrichments and better understanding of the Shanghai innovation and entrepreneurial eco-system.



Entrepreneurial Training - Workshops, Seminars and Visits

In addition to customary workshops on business operation knowledge and skills, and sharing seminars by renowned entrepreneurs in town, a new series of lectures branded as "Business Beyond Usual" were organized on sustainability development, social innovation and entrepreneurship, with international speakers from different sectors sharing their vision and strategies in driving sustainability and social innovations in day-to-day business operations. The series will be offered regularly to advocate the "Do Well Do God" entrepreneurial ethos and practice.



Engaging Entrepreneurial Communities

Poly-Preneur – Community of Alumni Entrepreneurs

In 2012, PolyU coined a new term “Poly-preneurs” as the community of PolyU’s graduates advancing their career as entrepreneurs. To foster closer relationships among Poly-preneurs and their alma mater in KT and entrepreneurial activities, organized activities such as site-visits, talks and networking gatherings were planned. An e-newsletter featuring “Poly-preneur of the month” was also launched. As key stakeholders to the PolyU innovation and entrepreneurial eco-system, Poly-preneurs are also encouraged to support related programmes and activities, such as providing mentorship to Micro Fund recipients.

Fostering Partnership for Better Entrepreneurial Eco-system

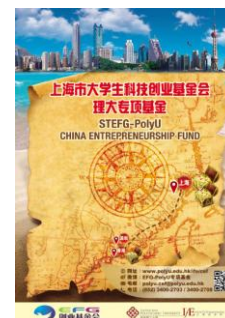
Throughout the year, PolyU had actively engaged with startup / entrepreneurial communities in Hong Kong and supporting various related activities and events like Startup Weekend Hong Kong 2012, TEDx Hong Kong 2012, StartLab 2013, etc. The closer link between the University and the communities enabled our young students and graduates to keep abreast of the latest movements in the entrepreneurial and start-up circle.



Furthermore, PolyU had been working closely with like-minded partners to promote a more vibrant entrepreneurial eco-system in Hong Kong. For example, PolyU is supporting CyberPort for its Hong Kong-Shenzhen Cyberport Creative Micro Fund (CCMF) Young Entrepreneurship Programme in its second successive years, as well as its first Guangdong-Hong Kong CCMF Young Entrepreneurs Programme.

Promoting Hong Kong-Mainland Entrepreneurship with New Strategic Initiatives

The size of the Chinese market implicates great development potential to Hong Kong entrepreneurs. To provide an appreciation for doing business in China, PolyU had initiated a number of initiatives to enhance exchange among young entrepreneurs from Hong Kong and the Chinese mainland. In 2013, the University had successfully gained the support of Shanghai Technology Entrepreneurship Fund for Graduates (STEGF) to match resource in the joint establishment of the first ever China-Hong Kong matching fund for PolyU graduates to start new business at the Chinese market (Shenzhen, Shanghai). The fund had committed to support 30 qualified entrepreneurial projects for a total amount of RMB 6 million in the next 3 years.



In pursuit of “Do Well Do Good” entrepreneurship, PolyU and Fudan University had agreed to develop a series of entrepreneurship education programmes for young entrepreneurs in Hong Kong and Shanghai. The first programme, “High Potential Entrepreneurial Leadership Programme” (滬港創業企業研習班-開發高潛質創業領導力) was launched in June 2013 with 30 young veteran entrepreneurs from the two cities. Designed with both Hong Kong and Shanghai sessions, the Programme aims to groom entrepreneurial leadership for participants’ further development of their businesses and themselves. The feedback from the participants after attending

the Hong Kong session on leadership and business strategy had been spontaneously encouraging, paving well the inroad to the Shanghai session on organization development and change in August 2013.

4. Performance Measurement – Key Performance Indicators

A summary of the key performance indicators for various KT areas is tabulated as follows, with financial figures expressed in HK\$'000:

Performance Indicators	2012/13 Target	2012/13 Actual	2013/14 Target ⁽¹⁾
Patenting & Licensing			
No. of patents filed	66	42	40
No. of patents granted	50	57	50
No. of license granted	60	54	67
Income generated from IPR	\$5,000	\$2,263	\$5,000
Expenditure involved in generating income from IPR	\$5,806	\$6,022	\$6,000
Consultancy, Collaborative / Contract Research & Spin-off / JV			
No. of collaborative researches and income generated ⁽²⁾	100 \$215,000	109 \$219,447	105 \$220,000
No. of contract researches and income generated	54 \$32,000	57 \$32,211	55 \$32,000
No. of consultancy projects and income generated	1,050 \$78,000	902 \$93,697	850 \$87,000
Number of economically active spin-off companies (with breakdown by type)	4	5	4
Net income generated (or net loss arising) from spin-off companies ⁽³⁾	\$15,950	(\$389),	(\$380)
Marketing & Outreaching			
No. of high impact research & KT projects / areas	6	6	8
Outreaching to industry -			
• No. of Exhibitions / Conference and Forum attended	35	42	37
• No. of people reached ('000)	963	1,125	970
No. of innovations / technologies being promoted / marketed	150	175	115
Innovation and Entrepreneurial Activities Enabling KT			
No. of students & alumni reached out for Micro Fund and entrepreneurial activities	3,000	2,200	2,500
Accumulative no. of funded startup ventures created by students, graduates or staff	40	44	60
Accumulative no. of PolyU innovations / technologies / knowledge transferred through startups by students / alumni / staff	9	5	8
• No. of Micro Fund applications	210	177	180
• No. of students & alumni involved	500	368	400
• No. of entrepreneurial propositions supported	15	19	16
Other Knowledge Transfer / Dissemination Activities			
No. of equipment and facility service agreement and income	820 \$7,500	653 \$8,171	700 \$8,000
No. of student contact hours for business or CPD needs	21,000	11,555	22,000
Income received from CPD courses ⁽⁴⁾	\$34,000	\$32,150	\$34,000
No. of public lectures / symposiums / exhibitions and speeches to community	440	297	300
No. of performances and exhibitions of creative works by staff or students	130	55	60
No. of staff engaged as members of external advisory bodies	350	249	360

(1) The 2013/14 targets have been revised to reflect the latest development. As a result, some are different from those stated in the Initial Statement submitted in 2012.

(2) Collaborative research projects include those supported by both public and private sector funding, mainly under related schemes by Innovation and Technology Commission of the Hong Kong SAR government and State Ministry of Science & Technology in the mainland.

(3) During the year, PolyU exited from 4 more spin-off companies, rendering the number of active spin-off companies to be one only.

(4) Only CPD courses offered through Institute for Entrepreneurship (IfE) were reported as most of the CPD seminars, often offered jointly with other professional bodies by other departments are ad hoc in nature without charge.

5. Closing Remarks and The Way Forward

During the year, PolyU has completed the rolling out of a set of updated policies, regulations, guidelines to induce an ambience that encourages KT activities under good governance with proper recognition. The inception of the 6-year Strategy Plan for the University with KT, Entrepreneurship and Service to Community as a key area to support teaching and research opens up new opportunities to drive initiatives that would substantively change both institutional and individual thinking of KT through conventional means. While contracted research, consultancy, licensing and spinning off of start-up companies remain the mainstream approach to KT, the way of doing things are subtly influenced by fundamental beliefs in PolyU's KT philosophy.

Our commitment to a proactive stance in KT is not without challenges. Internally, engagement with KT activities would inevitably draw upon academic resources. While KT activities often bring benefit to scholarly development and output, the linkage are not so obvious in measurable performance terms. Nevertheless, the University will continue to improve its policies and practices in a holistic manner to facilitate KT in both scholarly and professional context. Externally, the enabling technologies taken up by our industrial partners would sometimes create concern of unfair competition in the market, resulting in tension between the University and certain practitioners.

As a publicly funded institution, our KT activities are becoming more transparent, with actions and outcomes accountable to a wide range of stakeholders including the staff, students, businesses, industries, and the community at large. While stakeholders' interest may vary, our KT philosophies need to address the overall well being of the University and the society. The capacity and expertise of the University can only be optimally leveraged to benefit both higher education and societal development with well defined roles for our involvement in KT. In this regard, the support from UGC in its stance for KT and the actual provision of KT Fund sends an important affirmative signal to our commitment in our developmental role for the society realized through KT.

Over time, we have realized that creating impact is far more important than economic return of KT activities, even as the latter should not become a financial burden to the University. That said, our KT activities have also enjoyed a fruitful year in economic terms. Safeguarded by proper governance with efficient systems, our consultancy and licensing portfolio are more focused on making positive impacts for our partners, the society and the University herself, with a conscientious effort to uphold the long time institutional tradition to support the industry with our capabilities and expertise.



Nicholas Yang
Executive Vice President

Appendix – Technology Marketing and Networking Activities

(a) Highlights of Special Publicity Events

Event Date	Technologies Promoted	Photo
Jul 2012	<p>Mycar Hong Kong’s first homegrown electric vehicle mycar, jointly developed by PolyU and EuAuto Technology Ltd, was launched on the US market by US auto maker GreenTech Automotive.</p>	
Oct 2012	<p>PolyU’s 75th Anniversary Innovation & Technology Showcase A thematic campaign comprising a series of exhibitions, to illustrate how the society had benefited from PolyU’s extensive range of high-impact research outputs. There was a total of 40 local and international media coverage on this showcase.</p>	
Mar 2013	<p>i.Dummy This PolyU developed size-changeable robotic mannequin was announced to local media.</p>	
May 2013	<p>Results Announcement - International Exhibition of Inventions of Geneva A press briefing which announced the achievements PolyU obtained at the Geneva invention exhibition.</p>	
May 2013	<p>Brain Training Device for Neurorehabilitation after Stroke Local media were invited to learn about this novel device which can detect brainwave and thereby control robotic training devices, especially developed for rehabilitation trainings.</p>	

(b) Technology Showcases / Channels

Format / Channels	Marketing Tools	Remarks
Publications	<ul style="list-style-type: none"> • KT book 《科技創新變未來》 • Monthly e-Newsletters – “Technology Frontier” 	Technology publications help to disseminate news on PolyU’s latest technology and research outcomes.
Mobile Platform	Mobile App “Innovation and Technology Showcase”	This mobile app provides a funny way for the general public to learn more about PolyU’s research achievements.
Internet Platform	<ul style="list-style-type: none"> • Online Technology Portal • Virtual Hol • Online Patent Listing 	These internet platforms provide a comprehensive online search engine of PolyU technologies with information available in posters, YouTube videos, animations, e-brochures and virtual technology showroom.
Physical Infrastructure	House of Innovation at PolyU Campus and at PolyU Shenzhen Base	These are showrooms showcasing various technologies and research achievements of PolyU through innovative displays and exhibits. Through scheduled visits and regular opening to visitors, guests and general public, both the physical and the virtual House of Innovation are able to facilitate and promote PolyU’s technology for potential KT and research collaborations.

(c) Knowledge Transfer & Technology Networking Seminars

Seminar / Meeting	Focus / Disciplines	Partnering Organization(s)
1. 11th Meeting of Consortium for Globalization of Chinese Medicine (CGCM)	Chinese Medicine	CGCM
2. Seminar on Chinese Medicines	Chinese Medicine	-
3. Tech Forum on Healthy Ageing	Health Care and Ageing Technologies	HKSTP
4. Rehabilitation and Elderly Care Technologies	Health Care and Ageing Technologies	-
5. Creating New Business Opportunities Through Innovation	Design	HKGCC
6. Technology Application on Elderly Exercise and Stroke Rehabilitation Training	Health Care and Ageing Technologies	-
7. Groundbreaking Nanotechnology on Functional Food Development	Bio-Tech	-
8. Market Trend and Innovation of Cotton Fibre	Textile and Clothing	HKRITA
9. Commercialization of Medical Device Technologies	Health Care and Ageing Technologies	HKIE, HKPC

(d) Business Insights Seminars / Meetings

Seminar / Meeting	Focus / Disciplines	Partnering Organization(s)
1. Boss 愛作戰 - 認識篇	Business Management	-
2. CEO 論壇：中國經濟發展與香港	Finance and Economy	CEO Club
3. CEO Lunch Talk on “Corporate Social Responsibility and Business Strategy”	Business Management	CEO Club
4. “Meet-PolyU-Experts” Breakfast Meetings	Various	CEO Club

(e) Exhibitions and Tradeshows Participated

Exhibitions / Tradeshows Participated	Location	Disciplines / Items promoted
1. International Conference & Exhibition of the Modernization of Chinese Medicine & Health Products 2012	Hong Kong, PRC	Food Safety and Technology Research Centre
2. Recycle Bank Fun Fair 2012	Hong Kong, PRC	Green Technologies
3. International Home Care & Rehabilitation Exhibition	Tokyo, Japan	Health Care and Ageing Technologies
4. Electronics Fair (Autumn) 2012	Hong Kong, PRC	Fabric sensing and advanced optics technologies
5. Eco Expo Asia 2012	Hong Kong, PRC	Green Energy and Green Manufacturing
6. Credit Suisse Salon Invention Fair 2012	Hong Kong, PRC	Star projects
7. InnoCarnival 2012	Hong Kong, PRC	Healthcare, structural monitoring, bio-tech, space exploration, etc.
8. China Hi-tech Fair 2012	Shenzhen, PRC	
9. IDT 2012	Hong Kong, PRC	Lead-free Ferroelectrics Based Microrefrigerator
10. International Exhibitions of Invention of Geneva 2013	Geneva, Switzerland	Bio-tech, structural, green lighting, textile and clothing
11. ICT Expo 2013	Hong Kong, PRC	RFID device and systems
12. Electronics Fair (Spring Ed) 2013	Hong Kong, PRC	RFID device and systems
13. Rail Solutions Asia 2013	Kuala Lumpur, Malaysia	Railway monitoring system
14. Hong Kong International Medical Devices and Supplier Fair	Hong Kong, PRC	Health Care and Ageing Technologies