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Focus Topic :
BUSINESS INNOVATION
(PART TWO)



CUHK Business School
The Chinese University of Hong Kong



Dean's Message

I would like to welcome our readers to this edition of the CUHK Business School's magazine CONNECT. Situated at the world's doorway to China, with a well-developed foundation in business education and research, CUHK Business School at The Chinese University of Hong Kong has a unique role in nurturing business leaders for tomorrow. CONNECT magazine provides a platform to educate and inform readers on selected business topics through articles written by staff at CUHK Business School and guest writers. This edition of CONNECT focuses on business innovation. We hope that you will find the articles both interesting and stimulating.

Professor Vernon Hsu

Profile: The Chinese University of Hong Kong

- The Chinese University of Hong Kong (CUHK) was established in 1963 after the amalgamation of existing colleges, which dates back to 1949
- The Vice Chancellor & President is Professor Joseph J.Y. Sung
- CUHK has eight faculties (Arts, Business Administration, Education, Engineering, Law, Medicine, Science, Social Science) and 62 academic departments
- CUHK is ranked 39th in the QS World University Rankings 2013 and four of its academic staff members have been awarded Nobel Laureates
- CUHK is based on a collegiate system of nine colleges
- CUHK has 23,000 students; 3,000 of whom are from outside Hong Kong

Profile: CUHK Business School

- The Dean is Professor Vernon Hsu
- The Business School is comprised of two schools (Accountancy, Hotel & Tourism Management) and four departments (Finance, Decision Sciences & Managerial Economics, Management, Marketing)
- It has over 4,000 students (full-time/part-time)
- Over 500 undergraduate and postgraduate business students embark on an international exchange during the regular school term every year
- CUHK Business School is the first business school in Hong Kong to offer MBA and Executive MBA programs
- The MBA program was ranked 27th in the world in 2013, and the EMBA programs were ranked 13th in the world in 2013 by the Financial Times
- The School runs dual MBA degree programs with HEC in France; Rotterdam School of Management in the Netherlands; and the University of Texas at Austin in the United States. It also runs a joint program with Cambridge Judge Business School in the United Kingdom and MIT Sloan School of Management in the United States; as well as masters teaching partnerships with Tsinghua University and Shanghai National Accounting Institute in China

A Transparent Chain

Prof. Waiman Cheung, Chairman of the Department of Decision Sciences & Managerial Economics; Director of Asian Institute of Supply Chains & Logistics; Director of Center of Cyber Logistics, CUHK Business School

SUPPLY

chain visibility is the next big trend in logistics. The goal is to bring supply chain integration and product traceability to the highest level of efficiency and transparency. It is a formidable challenge but with the help of cutting-edge Radio Frequency Identification, or RFID, technology, promising smart solutions are on the rise.



Ever imagined the technology used in Octopus card—an ubiquitous touch-based smart card for transportation and small payments in Hong Kong—can help manufacturers manage their production process and streamline their supply chain management? The same technology can also help retailers instantly collect consumer data such as what styles, colors and sizes of a product is sold more frequently, or help consumers discern whether a certain product is genuine or a counterfeit.

The technology, RFID, has been around for many years, but sophisticated applications that can tackle today's complicated supply chain challenges are either just popping up or in the commercialization pipeline.

At CUHK Business School, cutting-edge solutions are being developed within the Asian Institute of Supply Chains & Logistics, led by its director, Prof. Waiman Cheung, who is also chair of the Department of Decision Sciences & Managerial Economics at the school, as well as director of the Center of Cyber Logistics in Hong Kong.

Matching Supply with Demand—Exactly

Prof. Cheung points out that one of the biggest challenges for manufacturers is to know exactly the amount of products that end customers want in the downstream of the supply chain. "Not having enough inventories to fulfil the demand is any salesman's nightmare," he explains. "That's why they always exaggerate the demand." This often leads to a 'bull whip' effect, which means the manufacturers would produce too many products in the upstream, causing excess inventory.

One proposed solution is for all parties along the supply chain to share information such as demand forecasts and production schedules.

“ With more transparency, there will be less exaggeration. This is what we're calling for—supply chain visibility. ”

Of course, different players along the supply chain should not enjoy the same amount of transparency, he explains.



Prof. Waiman Cheung

Suppliers with whom a manufacturer has a closer relationship would be given a higher level of access to the shared information than those who are not long-term suppliers. A sophisticated system of data sharing on the "cloud" with accessibility control would be very useful to this end.

But before data can be shared, they must be gathered. One technology that greatly streamlines the process of real-time data collection along the supply chain is RFID. As opposed to barcodes, RFID tags assign a unique identification to each physical item, so that even products of identical size or type would have different IDs. This allows the highest level of product tracking down to the individual item level. And because RFID tags can be detected by using readers that send out radio frequency waves, human intervention is not necessary, therefore reducing the need for relying on human intervention. Readers installed in a warehouse, for example, can scan items located as far as 10 meters away all at once and find out what exactly are in each box without the boxes being physically opened.

Building More Accurate Schedules

At the Asian Institute of Supply Chains & Logistics, Prof. Cheung has led a project in which RFID technology was used to track the entire manufacturing process of garment products along the supply chain—from raw material procurement to assembly to distribution and retailing.

First, all the raw material components imported from Italy to Hong Kong were tagged with RFID tags. Upon inspection, the materials were shipped to a factory in Shenzhen, and cut and converted into individual parts such as sleeves and front pieces. These parts were also tagged and then shipped to another factory in Hong Kong, where they were assembled into finished products. But that's not the end. The next step was to ship the products back to Shenzhen for quality inspection, ironing and packaging, followed by yet another shipment to a distribution center in Hong Kong before the products hit the retail stores.

As each piece of component was tagged with an RFID tag, the entire manufacturing flow could be monitored in great detail. Prof. Cheung recalls how this "track-and-trace" process helped the brand owner of the product realize that the lead time for manufacturing was actually longer than originally planned, and that if certain components were missing, the whole production schedule would be delayed substantially.

"Thanks to the 'track-and-trace' capability of RFID, a company can more accurately time the start of a production schedule until all the components are in place," says Prof. Cheung. "This saves time in the long run."

In the Frontline

On the retail level, stores can easily manage inventory through scanning the boxes in their backrooms with RFID readers for the exact product sizes, colors and styles for replenishing the stock on the shelves. In the past, it was a tedious, messy and labor-intensive process.

Inside the stores, if each product is tagged, retailers could find out how customers interact with the products and gather information about their preferences and purchasing behavior. As such, RFID technology can help shops manage their inventory much more efficiently and gather "big data" from their customers in a way that no one has ever dreamt of before.

Prof. Cheung gives an example of a clothing store: "With all the products tagged, you can do an experiment to see which ones

will be picked up and tried on more frequently depending on where they are placed in the shop. If you put a reader in the fitting room, you would know which products get tried on and go back to the shelf and which ones go to the cash register. This way, you can collect information about what sizes and colors of a particular product are sold more often and use this data for your planning."

Prof. Cheung's team has been working on this pilot project for two years and is constantly making improvements on the technology. An exciting possibility is to develop mobile phone applications that allow consumers to check on a product's information simply by touching the product with their mobile devices. These apps would also allow consumers to share the product with their friends in social media instantaneously, so people could see how many have liked it and which celebrity is wearing it, for example. This would facilitate word-of-mouth marketing through social media and connect that with the supply chain directly as all data are gathered by the store.

In the Cloud

According to Prof. Cheung, the use of RFID technology is gradually moving to mainland China. Initially, it faced a bumpy start when Walmart gave a big push to its mainland suppliers to use this technology several years ago. What made the technology fail to stick was that the suppliers had to bear the burden of paying for the infrastructure (i.e. tags, readers, software and hardware) while not getting any returns on their investments.

Things do not have to be this way, Prof. Cheung says. His suggestion: Instead of making the supply chain players invest in the technology, we can turn this into a utility service like water supply or electricity supply. How can this be done? By placing the hardware and software in the cloud. This means that users pay a subscription fee only when they use the service. "We're trying to turn supply

“ Instead of making the supply chain players invest in the technology, we can turn this into a utility service like water supply or electricity supply. ”



chain visibility into a service. If you need to use it, you just plug in and get the data,” says Prof. Cheung. The fee, he explains, would be on a sliding scale based on how much data a user needs.

In this scenario, says Prof. Cheung, the host—whoever puts and runs the technology on the cloud—has to be a third party who is impartial to either the buyers’ or sellers’ interests, so that it can be relied on to resolve conflicts. The beauty of this system is that the physical location of the software does not matter.

Using the same technology, societies can ideally tag every possible thing in existence and run in a much more efficient way. For example, companies would never run out of stock, less waste would be generated, problems along the supply chain can be easily traced, even the flow of population and traffic can be more easily controlled. This is the concept of “Internet of Things,” which China is currently pushing for, says Prof. Cheung. One evidence is that under the 12th Five-Year Plan, the Chinese government wants to promote smarter cities where every vehicle and every product is tracked and traced to streamline city planning through better control over the inflow and outflow of goods, population and traffic.

Authenticity and Safety

Of course, when everything is traceable, security and privacy are important concerns. On the other side of the coin, the ability to track and trace individual items would help consumers identify safe and genuine products in a market of lemons.

According to Prof. Cheung, the potential use of RFID technology in this area includes the authentication of pharmaceutical and healthcare products as well as products that are prone to be counterfeited, like infant formula. For example, near-field communication devices can be installed in mobile devices so that consumers will be able to read the products’ RFID tags. The signals will then be checked against databases that contain all the IDs and information concerning authentic products.

Another important contribution that the technology can make is to improve the state of food safety along the supply chain. “Imagine if we’ve found a virus in one chicken and you can identify that particular chicken as well as all the other chickens in the same cage and where they have been transported,” says Prof. Cheung. “This would help control the spread of avian flu much more easily.”

Many of the concepts and technology mentioned above are being developed by Prof. Cheung’s team at CUHK Business School, which hopefully will obtain funding so they can be tested on the field and eventually be commercialized.

By Louisa Wah Hansen

All Eyes on Renminbi

*Prof. Paul McGuinness, Department of Finance,
CUHK Business School*

INNOVATIONS

in the capital market and regulatory environment are paramount in the development and growth of companies as they help attract and support the necessary funding. In Hong Kong and Mainland China, the biggest trends to watch are the innovations in Renminbi funding and the internationalization of China's capital market.



Over the past few years, innovations in the area of RMB capital fund-raising have been led by Hong Kong—identified as the major offshore RMB market. According to Paul McGuinness, finance professor at CUHK Business School, Hong Kong is still playing a pioneering role in many aspects and he expects this to continue in the foreseeable future.

There are a number of important areas of innovation that will keep propelling the development of the financial industry in Greater China. These include:

- “Dim sum bonds,” which generate RMB funding in “offshore” (i.e., non-mainland) markets like Hong Kong. This market now includes floating coupons with rates linked to a Hong Kong Interbank Offer Rate for the offshore RMB market (or “CNH” market as it is known in Hong Kong). The “dim sum bond” market has spread to other places like Singapore, Taiwan and London. Despite this proliferation, the name “dim sum” has stuck, to reflect the fact that Hong Kong is the pioneer in the field. “Through these bonds, a number of issuers—not just mainland Chinese organizations but some international ones as well—have raised huge amounts of RMB funding in the Hong Kong market,” observes Prof. McGuinness. “Inevitably, the amount of offshore RMB in Hong Kong will mushroom in the next several years. Currently, Hong Kong Monetary Authority data suggest that approximately 10 percent of total bank deposits in Hong Kong are in RMB form¹. One would naturally expect this proportion to rise over the medium- to longer-term.”
- Hong Kong Stock Exchange (HKEx)’s “dual-counter” trading arrangement, which allows investors to trade certain securities in either RMB or Hong Kong dollars, complements and supports offshore RMB-equity funding and the “CNH” market in general. “As both a frontline regulator and major international exchange, HKEx has been very innovative in responding to market needs. Based on its past track-record and the challenges ahead, I expect it to continue along this path,” comments Prof. McGuinness.



Prof. Paul McGuinness

- A number of exchange-traded funds (ETFs) are now available for “physical” investment in mainland-listed A-shares. “China has strict capital controls, making it difficult for foreign parties to invest directly in the A-share market,” explains Prof. McGuinness. The QFII scheme (first set up in 2002) allows foreign parties some access. This program requires the conversion of foreign currencies into RMB (subject to quota and supervision) for the purpose of investing in mainland-listed bonds and A-shares². The introduction of the RQFII (RMB-qualified foreign institutional investor) scheme in 2011, and the utilization of some of this quota by ETF managers, constitutes an important development in providing further access to listed A-share portfolios. Among other things, it allows for investment of offshore RMB (CNH) balances held in Hong Kong in A-shares listed on the Chinese mainland. The RQFII quota has grown markedly since 2011. “The program is evolving in terms of the size of the quota and the number of institutions that have been granted approval for investment,” says Prof. McGuinness. “Hong Kong now provides significant access for investors seeking mainland Chinese market exposure. In addition, other markets like London have recently procured RQFII quotas, stretching the bounds of RQFII well beyond Hong Kong.”

“ For major organizations involved in market innovation, the key is not so much what the changes will be but when they will happen and over what time-scale. ”

All of these new measures are giving mainland China a number of advantages. Through the offshore markets for RMB, greater funding access has opened up. Well-positioned mainland PRC-incorporated issuers are thus able to tap into both domestic mainland and offshore markets for capital funding.

Internationalization of China's Market

Media reports have been suggesting for some time that the Shanghai Stock Exchange, together with the China Securities Regulatory Commission (CSRC), will at some future point allow foreign companies (i.e., those not legally incorporated in mainland China) to list and raise equity capital in Shanghai. Prof. McGuinness notes that despite ongoing media speculation on the subject, such an international platform has still not yet opened. Media sources largely attribute this to the poor sentiment engulfing A-share markets in recent years.

One major challenge when it comes to financial innovation is the uncertainty surrounding the implementation of anticipated regulatory and institutional change.

For major organizations involved in market innovation, the key is not so much what the changes will be but when they will happen and over what time scale, comments Prof. McGuinness.

Nevertheless, he stresses: “Major markets where Chinese stocks and bonds are issued—Hong Kong, Singapore, London and New York—need to be proactive and think about the kinds of services they can offer. Once Shanghai's international board comes on stream, there will inevitably be greater competition for issuers³.” Prof. McGuinness also notes: “According to various media reports, relevant authorities have done much of the preparatory work for the new market's regulatory structure. Internationalization of the mainland equity market is clearly inevitable, and Shanghai will be at the forefront. Regional and other exchanges are very much aware of this and are emboldened to develop structures that will preserve and enhance their attractiveness to Chinese issuers. So there is an even greater need to innovate.”

Another noteworthy innovation, largely pioneered in Hong Kong, is the “cornerstone” investor agreement—an arrangement in which large blocks of shares are preferentially assigned to high net-worth investing-entities at IPO. Cornerstone parties render the same purchase price per share as other IPO subscribers, but face lock-ups on assigned holdings⁴. Prof. McGuinness says that cornerstone agreements are increasingly common for issues launched on HKEx but not that common in other jurisdictions. “By disclosing such earmarked IPO allotments up-front in relevant prospectus documents, cornerstone parties offer potentially important value signals to subscribers. The local regulatory environment allows for such a mechanism, but we are also witnessing the migration of cornerstone-investor agreements to IPOs in other places.”

Going forward, Prof. McGuinness believes a lot of creative financial products will emerge—many of which will exploit existing and new RMB funding avenues. “Greater capital account liberalization and increased RMB convertibility over the next several years will surely provide impetus for more and more RMB funding demand,” he says. “As many of the innovations are driven by regulatory and political change, the evolution of the RMB and related CNH developments hinges on the specific timetable for regulatory change.”

Fueling Innovation

To provide fuel for innovation, CUHK Business School has been training well-qualified students to enter the financial industry. It has been running two unique professional programs aimed at filling specific gaps in the industry, namely, the BBA program in Insurance, Financial and Actuarial Analysis (IFAA); and the BSc in Quantitative Finance program.

The IFAA program, introduced in 2002, is one of the first professional insurance education programs in Hong Kong. Prof. McGuinness, as an earlier Chairman of the Department of Finance for two separate four-year terms (2000-2004 and 2005-2009), witnessed the evolution of the program from close range. He notes that despite Hong Kong being one of the biggest markets for insurance, insurance is a relatively under-researched area in academic terms. Specifically, he remarks: “There aren't that many universities in the world that have an insurance department. But over the years



CUHK Business School has been trying to build a sizeable group of students and faculty in the insurance field. By targeting a niche area, it is possible to become a market leader and have real impact.”

The Quantitative Finance program, introduced in 1998, is another important initiative pioneered by the Department of Finance. This program has for some years enjoyed notable success in attracting top-level students and placing them in positions in the local and regional financial services arena. One of the program’s goals is to inculcate students with the important quantitative and technical skills necessary for an evolving and sophisticated finance industry.

An additional program, the MSc in Finance, has undergone a revamp and since 1-2 years ago, has attracted many students from top universities in mainland China. Those students who have chosen to return to China upon graduation are making a direct impact on the development of the financial industry there as they have been exposed to both the Chinese and Western financial systems.

By Louisa Wah Hansen

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Nurturing Ground for Innovative Ventures

Prof. Wilton Chau, Professor of Practice in Entrepreneurship and Associate Director of MBA Program, CUHK Business School

A regional platform for incubating and developing start-up ventures in Asia has taken off with the leadership of CUHK Business School and is providing a unique opportunity to nurture and support entrepreneurial talents in an otherwise difficult environment for innovation.





“ This is the most difficult stage of all when it comes to launching a start-up venture, if you can get through this step, funding will come. ”

Prof. Wilton Chau

Considered a market leader, the “Pan-Asia Venture Development Platform” was born two years ago and is the only one of its kind in the entire Asian region. The founder of this platform, Prof. Wilton Chau, Professor of Practice in Entrepreneurship and Associate Director of CUHK Business School’s MBA Program, says its goal is to develop promising regional and even global ventures through a three-pronged platform that provides entrepreneurs with support in fundraising, commercialization and human resources.

First, as a major funding platform, it helps to support incubation programs at the Hong Kong Science Park—the largest incubator in Hong Kong—through providing financial subsidies, facilities and consulting and marketing services.

One main funding source is the Hong Kong Business Angel Network, of which Prof. Chau is a founding vice chairman. This non-profit making network is the largest angel investor network in Hong Kong, which aims to help young ventures conduct fundraising activities.

The average funding size for each project is around HK\$6 million. In addition, Prof. Chau himself is the founder of a regional angel network called QLeap Super Angel Network, which was established 10 years ago and so far has invested in two deals with substantial ROIs.

Second, as a conduit for commercialization, the Pan-Asia Venture Development Platform helps innovators roll out their products in the market.

This is the most difficult stage of all when it comes to launching a start-up venture,” comments Prof. Chau. “If you can get through this step, funding will come.

So far, the platform has helped start-up entrepreneurs to build strong networks of companies in different industries, helping to access major customers regionally. The Platform currently has access to many industries such as telecommunications (12 telecommunications companies in 10 countries), healthcare (a major hospital network in Asia), education publication), and direct sales reward redemption programs (one of the largest in China).

“ I match the students' investments by 50 to 100 percent. They feel more confident if I also share the risk and show my commitment to the fund-raising and commercialization process of their start-ups. ”

Third, the platform leverages the human resources found among CUHK MBA students. Since 2008, CUHK Business School has been offering MBA students a venture capital course taught by Prof. Chau. Some of the students have entered the venture capital industry upon graduation and have formed a venture capital funding network for this platform.

In their “fund-raising for entrepreneurial venturing” course, students learn how to conduct fund-raising for young ventures and how to write investment proposals.

Start-up entrepreneurs from all over the world are regularly invited to the course to present their project ideas to the students, who would then help to make these projects more viable through building strong business models for the young ventures.

“If the students develop chemistry with the entrepreneurs, they will continue working on the projects after graduation,” explains Prof. Chau. “In some cases, three or four students would form an ‘operating cell’ and invest money in the projects.”

So far, the platform has supported technology ventures and start-up projects in Hong Kong, mainland China, Taiwan, Singapore, India, Israel, Germany and the United States. This year, there are 2-3 projects that run out of mainland China.

Prof. Chau stresses, however, that these projects are self-sustaining and do not take resources from CUHK, except for the participants, who are either current MBA students or graduates.

From Concept to Practice

According to Prof. Chau, the education of entrepreneurship has three layers. A successful and practical entrepreneurship education program depends on the workings of all three.

The first—the outer—layer, concerns raising the awareness for entrepreneurship. This can be achieved through hosting lectures, conferences and networking forums with successful business people.

The second—the middle—layer, has to do with training. Prof. Chau has a unique view on how to teach entrepreneurship. “My view is that models of success can’t be repeated. When you teach students success models, it is just plain lying to them because the scenarios are never the same for different people every time. So instead, I teach failure factors through failed cases. If I teach a dozen of ‘failed cases,’ my students will have a collection of failure factors that they can pay attention to when starting their ventures and therefore will have a higher survival rate for their future businesses,” says Prof. Chau, adding that he often uses his own “failed cases” in his 20-plus years of venture capital experience.

The third layer—the inner circle, is the execution part, which is also the trickiest part. According to Prof. Chau, most professors do not engage themselves in this layer when teaching their business students about entrepreneurship. By contrast, in the MBA course that he teaches at CUHK Business School, he not only helps students formulate their business model and start real-life business projects, but also co-invests in those projects that he believes to be promising in terms of profitability and shares with them his network of business contacts. “I match the students’ investments by 50 to 100 percent,” he says. “They feel more confident if I also share the risk and show my commitment to the fund-raising and commercialization process of their start-ups.

As for his criteria for choosing projects to invest in? High-tech ventures with exponential growth potential, ranging from telecommunications, biotechnology to food and beverage. Each of the ventures should have the potential to become a leader in its field and to make its mark on the world map.



Playing the Pioneer Role

Within the ecology of innovation, no other universities in Asia offer these opportunities to their students and the industries. As such, the Pan-Asia Venture Development Platform is unique.

Rachel Chan, founder and chief catalyst of Innofoco, a Hong Kong-based consultancy that specializes in branding, innovation and entrepreneurship and conducts strategic and policy studies in these areas, says the platform can play an important role in establishing Hong Kong as a true incubator for start-ups in Asia.

“Wilton’s platform is a Pan-Asian platform,” says Chan.

“We—Hong Kong—always say we are an Asian hub. But our connections are actually quite limited. I hope this can be a major platform to link Hong Kong with the rest of Asia. We can build Hong Kong as an incubator for start-ups in Asia. Hopefully it will attract talents from all over Asia.”

Chan has had the chance to work with Prof. Chau last year when he was one of the members of the judging panel for an entrepreneurship award. “He is the leader in this area so we wanted to pick his brain on how to foster an innovative entrepreneurial ecosystem,” she says.

According to Chan, who is studying the Hong Kong start-up ecosystem for InvestHK, it is imperative to groom start-up talents in Hong Kong, as well as intermediaries who can support start-up activities. She recognizes the valuable work Prof. Chau has contributed in this area.

“What he has been doing at CUHK is nurturing talents as well as matching them with relevant help and support, whether it’s funding, industry know-how, expertise or market contacts,” she says. “You can’t really start a successful business if you don’t have the connections and know-how. The platform can provide intellectual, social and financial capital much needed by start-ups.”

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