



## CHINA AS THE WORLD'S TECHNOLOGY LEADER IN THE 21<sup>ST</sup> CENTURY: DREAM OR REALITY?

HKUST IEMS and IPP – EY Hong Kong Emerging Market Insights Series (2016.04.20)

Over the last century and a half, global technological leadership has shifted from Great Britain to the USA. In this seminar supported by EY and the HKUST Institute for Public Policy and organized by HKUST IEMS, **Naubahar Sharif**, Associate Professor of Social Science and Faculty Associate of IEMS at HKUST, argued that China is positioning itself to assume global leadership in technology within the coming few decades.

Prof Sharif identified three sources of competitive advantage for China's ascent to leadership in global technology: its massive domestic market, its strong state capacity and willingness to employ state-sponsored industrial policy and government support, and the process of globalization that continues to transform markets worldwide.

With respect to the government's support for industrial research and technology development, Prof Sharif pointed to China's spending on research and development (R&D) which now outpaces overall economic growth, placing China behind the United States as the world's second largest spender on R&D activities. China now has over 3.2 million R&D personnel, and is currently the world's largest producer of tertiary and post-tertiary students in science and engineering. Moreover, China now ranks second in the world in research output as measured by papers published in research journals, and third in terms of patent filings with the World Intellectual Property Office.

China's autocratic system of government was also argued to be a boon to the future of China as a global technology leader, with government-led initiatives bolstering a range of strategic industries including wind turbines, telecommunications, advanced manufacturing, and biotechnology. Prof Sharif argued that China's current stage of technological development resembles that of the post-World War II-era United States, when massive public and military investment financed early-stage innovative technologies such as radar, synthetic rubber, the microchip, GPS, and the internet.

With these strengths, the intensified forces of globalization will help China extend its reach abroad. Prof Sharif commented that too few policymakers and financial elites outside China anticipate the rise of Chinese multinationals to positions of global technological leadership, underestimating the power of China's advantageous position. Prof Sharif contends that Chinese companies will move beyond their traditional reliance on low factor-input costs and will continue to scale the value-added chain well into the future.



Video recording and presentation slides available at <http://iems.ust.hk/insights>

## DIRECTOR'S MESSAGE

Albert Park



Promoting innovation is a top priority for emerging markets, and was a focus of many of the events organized by HKUST IEMS in the first half of 2016. In an Emerging Market Insights Series presentation, Naubahar Sharif (HKUST) presented an optimistic view of China's potential to become a global technological leader. However, in his academic seminar Zheng Michael Song (CUHK) warned that much of China's R&D resources are misallocated. In another policy talk,

Varun Sivaram (US Council on Foreign Relations) expressed optimism that new international commitments to fund clean

energy innovation at the Paris Climate Change Conference could lead to a more environmentally sustainable future if international coordination is effective. In another academic seminar, Utpal Bhattacharya (HKUST) presented cross-country research finding that policy certainty is much more important than policy content for promoting innovation. Several of the IEMS research grants awarded in 2016 also support research on innovation, with topics including the Pearl River Delta as an emerging Silicon Valley, the impact of monitoring on entrepreneurial success, and the role of agency in firm innovation in China. Of course, the Institute also sponsored events and research addressing a wide variety of other topics affecting emerging markets such as governance, corruption, protection of intellectual property rights, vocational education, China's Belt and Road initiative, corporate governance, and consumer behavior. HKUST IEMS is also happy to welcome six new Faculty Associates and several new post-doctoral fellows who will all contribute to the Institute's research agenda on emerging markets.



Aashish Mehta  
(UC-Santa Barbara)



Prashant Loyalka  
(Stanford)



Joana Silva  
(World Bank)



Albert Park  
(HKUST)

## MAKING VOCATIONAL EDUCATION WORK IN EMERGING MARKETS

World Bank Jobs Group Google+ Hangout (2016.02.20)

In rapidly changing economies, there are frequent complaints by employers about shortages of specific skills in the workforce, which constrain development prospects. This online forum brought together experts on vocational education in China, India, and Brazil to discuss the role that vocational education can play in skill development strategies in emerging markets, addressing topics such as changes in the demand for different skills in emerging markets, the potential for vocational education to meet these demands, assessments of the vocational education systems in different emerging markets, and recommendations for improving curriculum and delivery methods for vocational education, including the role of the public and private sectors.

The three panelists were Aashish Mehta, Associate Professor of Economic Development at the University of California – Santa Barbara; Prashant Loyalka, Assistant Professor at the Graduate School of Education at Stanford University and Center Research Fellow at the Freeman Spogli Institute; and Joana Silva, Senior Economist at the World Bank. The discussion was moderated by Albert Park, Director of HKUST IEMS, Chair Professor of Social Science, and Professor of Economics at HKUST.

With regard to the demand for skills in emerging market economies, Prof. Mehta pointed out that India and some other Asian countries have vocational education programs focused on industrial and manufacturing skills, which may be misguided given the prominent role of the service sector in their economies. For modern service sectors, he emphasized the importance of high quality general education programs that emphasize English-language skills and the development of socio-emotional skills. However, whether providing training in such skills will be effective also depends on whether the modern service sectors are in fact growing and creating jobs, which is not always the case.

In Brazil, improving technical skills alone fails to significantly increase firms' productivity levels. Dr. Silva noted that Brazil's vocational education programs have also provided training in "soft" skills such as the ability to work in teams and coordinate with others.

Prof. Loyalka felt that in China, there are tradeoffs between meeting the short-term demands of the labor market and providing skills such as English and math that may be more

valuable in the long term when the economy may be much different than today. China currently faces a severe shortage of manual labor (leading to significant increases in the wages of manual laborers), China's vocational training is still largely focused on training students for less-skilled manual jobs.

One strength of the Brazilian system is that firms and trade associations play a key role in the design and financing of vocational and technical training programs, which links supply more closely to demand. Evaluations suggest that there are sizable economic returns to such training. In contrast, in both China and India, experts felt that government-designed programs often performed poorly both in teaching skills and providing skills demanded by employers. Prof. Loyalka noted that China offers huge government subsidies to vocational education programs, and these programs were top-down programs that suffer from a severe lack of assessment and accountability. The results of experimental research found that introducing a credentialing system that rewards vocational schools based on student assessed performance led to dramatic improvements in learning.

In drawing lessons for the design of vocational education systems, all three experts emphasized the need to institute strict systems of monitoring and accountability for their vocational education programs, wherein students' educational outcomes are closely tied to state recognition and funding. Another key lesson is that employers must be directly involved in vocational education, for example by providing employment contracts for students, wherein interns or entry-level employees are guaranteed a short-term job contract.

Finally, information asymmetry is also a problem for students, who often are unaware of the market demand for different skills. To increase awareness of which skills are in demand, it was recommended that industries who source employees from vocational education programs be required to regularly collect and submit information on employee jobs, wages, etc. to government agencies with the aim of better informing vocational education programs on the state of market demand.

Watch the online panel discussion at <http://iems.ust.hk/hangout>



## EXPERT PANEL ON “THE CHANGING FACE OF CHINA”

World Economic Forum’s Annual Meeting of New Champions in Tianjin, China (2016,06.27)

IEMS Director **Albert Park** joined a panel of experts to discuss “The Changing Face of China”, which featured an in-depth exploration of new demographic trends, norms, and policy priorities reshaping Chinese society. The discussion focused on China’s new two-child policy and China’s rapidly aging population, also touching on such topics as China’s household registration system, welfare entitlements, and consumer behavior.

In 2015, China finally relaxed its one-child policy in favor of a two-child policy. The panel thought the policy was a step in the right direction, Prof Park noted recent research indicating that single children are more depressed, impatient, selfish, and experience higher levels of stress. Nonetheless, the panelists felt the new policy would not significantly increase fertility because with rapid development and rising costs of raising a child many Chinese already had no desire to have a second child.

China’s elderly over 60 years of age currently comprises 15% of the population and is projected to rise to 30% in the next two or three decades. China thus must prepare itself for the challenges of supporting the well-being of its rapidly growing elderly population. Citing the results of recent large-scale surveys of the elderly in China, Prof. Park pointed out that many of China’s elderly are vulnerable, with 40% exhibiting elevated symptoms of depression and 22% living in poverty. Thus many receive insufficient financial support from their children and the government.

Prof Park suggested that China increase mandatory retirement ages and bolster elderly-focused schemes such as the rural pension plan enacted in 2009, whereby rural residents age 60 and above receive a pension payment each month. While the amounts are small, recent research has found that they make a big difference, leading to better health, less work, and greater happiness.



Joining Prof Park in the discussion were **Zheng Zhenzhen**, Professor of the Institute of Population and Labour Economics at the Chinese Academy of Social Sciences; **Ji Xiaohua**, Founder and CEO of the popular Chinese science website Guokr.com; and **Yvonne Li**, the founder and chairperson of the international China Ageing Industry Association.

Video recordings available at <http://iems.ust.hk/cfoc>



Sumit Agarwal (National University of Singapore) and Peter MacKay (HKUST)

## CORRUPTION AND INSIDER TRADING: EVIDENCE FROM CREDIT AND HOUSING MARKETS

IAS Distinguished Lecture, co-sponsored by HKUST IEMS (2016.04.10)

**Sumit Agarwal**, Vice-Dean of Research at the School of Business and Professor in the Departments of Economics, Finance, and Real Estate at the National University of Singapore, presented a practical approach to detecting corruption and insider trading behavior in the credit

and housing markets, and the extent to which corruption impacts South Asian countries in particular.

As complicated as this issue may seem, Dr. Agarwal boiled down the heart of the corruption issue to the concept of “quid pro quo”—Latin for “something for something”—or, in this case, the idea that politicians and bureaucrats are willing to trade public resources for money or other personal benefits.

One of many examples included banks which give loans to politicians for their personal use, and allow the politicians to later default on the loans with little to no repercussions. In return, the politicians deposit public funds into the banks providing them with much needed liquidity. This example was supported by data showing the significantly lower interest rates

offered to bureaucrats versus the general public, significantly higher levels of delinquency and reinstatement of loans to bureaucrats compared to the general public, and subsequent government decisions to deposit public funds into the same banks offering the loans. In another example demonstrating how difficult it can be to actually bring evidence against corrupt politicians, the spouses of Asian politicians and bureaucrats can open businesses such as art galleries where those wanting to curry political favors can purchase art works at extremely inflated prices. As evidence of their purchase, the buyers then gift these same art works to the politician or bureaucrat married to the owner of the art gallery.

Such seemingly blatant corruption is, according to Dr. Agarwal, difficult to prove. Although he used euphemistic terms like “greasing the wheel” to demonstrate the commonality or even necessity of such corrupt behaviors in South Asia, Dr. Agarwal did not hesitate to condemn such corruption for having a truly destructive impact on society, where the personal benefits received by politicians and bureaucrats come at the expense of regular borrowers and depositors in the form of higher interest rates, increased risk of banking insolvency, and overall diminished economic growth for a given region or country.

Watch the lecture at <http://iems.ust.hk/agarwal>



## WHAT AFFECTS INNOVATION MORE: POLICY OR POLICY UNCERTAINTY?

HKUST IEMS Academic Seminar (2016.02.18)



The important role of technological innovation in promoting a nation's long-term economic growth has been established since the late 1950's with the seminal work of Robert Solow who developed a formula for decomposing the sources of economic growth that separated the role of increases in inputs of labor and capital, and that of technological progress. Although a growing literature has examined various empirical links between innovation and firm- or market-specific characteristics, rigorous empirical studies that explore how politics affects technological innovation are sparse. Politics is important to innovation because politicians make policy and regulatory decisions that frequently alter the economic environment in which innovative firms operate, which ultimately affects a nation's innovation and growth.

To better explore the affects of policy on innovation, **Utpal Bhattacharya**, Professor of Finance at HKUST and HKUST IEMS Faculty Associate, empirically examined data from 43 countries

to assess whether it is policy or policy uncertainty that has a greater impact on technological innovation activities in different countries. To do so, he estimated a model of the determinants of the innovation growth rate of a given country in a given year adjusted by the mean of the innovation growth rate of said country, controlling for fixed country differences.

Prof Bhattacharya finds that policy does not affect a country's innovation in terms of quantity, quality, or originality, with only 6 out of the 43 countries examined exhibiting any indication that policy correlated to an increase or decrease in such factors. On the other hand, policy uncertainty has a strong adverse effect on a given country's innovation, with said negative effect most pronounced for the number and originality of a country's patent filings.

Prof. Bhattacharya's research suggests that, in terms of increasing innovation in democratic societies, it does not matter whether policy originating from the political left, right, or center prevails. Rather, the most significant factor encouraging or discouraging innovation is political gridlock and resulting policy uncertainty, as this uncertainty has real economic repercussions through its impact on innovation.

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Video recording and presentation slides available at <http://iems.ust.hk/innovation-policy>

## THE BELT AND ROAD FROM THE OTHER END: A EUROPEAN PERSPECTIVE

HKUST IEMS Academic Seminar (2016.04.07)

**Alicia Garcia Herrero**, Chief Economist for the Asia Pacific at NATIXIS, Adjunct Professor in HKUST's Department of Economics, and new HKUST IEMS Faculty Associate, presented a European perspective on Chinese president Xi Jinping's grand plan to revive the ancient overland Silk Road Economic Belt and maritime Silk Road (or Belt and Road) connecting Asia to Europe. The goal of the initiative is primarily economic, the hope being that many countries along these routes can benefit from new infrastructure and increased trade with China.

Dr. Herrero compared the new Silk Road with the United States post-World War II Marshall Plan, under which the United States donated billions of dollars in foreign aid to war-devastated countries in Europe. The Plan has been credited with making Europe the economic powerhouse that it is today.

However, some are more critical, arguing that it was merely an attempt by the United States to exercise political and financial control over Europe, and contain the Soviet Union. Only two years after the Marshall Plan began, its focus shifted from economic recovery to political and military cooperation. There are concerns that a similar shift from economic to military focus could occur with China's new Belt and Road initiative.

Just as the Marshall plan led to an international monetary system based entirely on the US dollar, the new Silk Road also may be the means by which the RMB rises as an international currency. However, unlike the post-World War II era when

many Western European countries were in dire economic straights and accepted whatever terms the US offered, today modern European and Asian countries have stronger economies and greater bargaining power. Thus, the Belt and Road initiative will only succeed if it creates "win-win" situations.

Currently, Europe has not given much thought to the Belt and Road project. Interestingly, an analysis of the trade impacts of the Belt and Road project finds that trade of European countries will benefit the most from the project, while some Asian countries may actually see reduced or little change in trade. For this reason, Europe should pay more attention to how it can maximize benefits from the Belt and Road initiative.



Video recordings and presentation slides available at <http://iems.ust.hk/belt-euro>

## CREDIT GROUPS, WOMEN'S POLITICAL ENGAGEMENT, AND PUBLIC GOODS PROVISION

HKUST IEMS Academic Seminar (2016.05.19)



**Pushkar Maitra**, Professor of Economics at Monash University, discussed his research on the role played by social networks in the effective facilitation of female participation in India's democratic political processes. Prof Maitra and his colleagues focused on women's membership in local-level microcredit self-help groups (SHGs), which

were thought to promote social network formation yet were not thought to be directly correlated with political behavior or involvement. One of their primary research goals was to uncover whether or not membership in these SHGs affected female participation levels in local institutions of grassroots democracy.

Analyzing individual household, aggregate household, and public goods stock data from India's 2006 Rural Economic Demographic Survey which included approximately 8,600 households across 242 villages in 17 major Indian states, Prof Maitra concluded that membership in a SHG does indeed have a strong positive impact on women's attendance at village

assemblies, a result which survives various robustness tests. He also finds that SHG membership significantly changed the gender composition of village assemblies in favor of women. This, in turn, resulted in more women-preferred public goods such as water, sanitation, and health services being provided by the village council.

Prof. Maitra and his colleagues also postulate that SHG membership results in increased political party activity, which is expected to promote long-term female engagement in India's local-level political institutions.

While Prof Maitra's recent experimental evidence suggests that the economic impact of microcredit and SHGs on the poor have been somewhat ambiguous, the social impact of microcredit should not be overlooked. To fully understand the contribution of microcredit and SHGs, Prof Maitra argued, one must adopt a broader view of the benefits of these types of interventions since much of their most consequential impacts appear to be in the social realm of women's lives, especially in the realm of their involvement in the political process and the more gender-equitable distribution of public resources that results from such involvement.

Find out more about the event at <http://iems.ust.hk/credit-groups>



## R&D MISALLOCATION IN CHINA

HKUST IEMS Academic Seminar (2016.05.05)



China's R&D expenditure has been growing very rapidly over the past two decades. It remains unclear to what extent R&D resources are misallocated and welfare losses can be caused by R&D misallocation. **Zheng (Michael) Song**, Professor of Economics at Chinese University of Hong Kong addressed this question and introduced a new theoretical framework to

better uncover misallocation by incorporating innovation and imitation decisions at the firm level.

The mechanism that sorts innovation by the distance to frontier becomes a key to identify R&D misallocation. Using China's industrial firm survey data from 2001 to 2007, Prof Song demonstrated this sorting mechanism was weak, suggesting that China has experienced severe misallocation of R&D resources during the time frame under study. According to Prof Song's analysis, R&D misallocation lowered China's aggregate total factor productivity growth by 1-2% per annum. On a brighter note, Prof Song presented evidence that the efficiency of R&D allocation improved somewhat between 2001 and 2007.



Find out more about the event at <http://iems.ust.hk/misalloc>

## STRATEGIES FOR IMPLEMENTING EFFECTIVE DE-LISTING/DE-INDEXING TECHNICAL MEASURES AGAINST

HKUST IEMS Academic Seminar (2016.05.24)



As emerging markets such as China, India, and Vietnam rapidly connect their vast populations to the internet, illegal downloads of copyrighted materials such as software, movies, and music has experienced a correspondingly dramatic increase. As digital copyright infringement becomes more pervasive in developing economies, policymakers wanting to fight against such infringement can adopt search engine de-listing policies,

effectively allowing copyright holder to take down links to websites featuring infringing materials from the world's most popular search engines such as Google, Baidu, and Bing.

The issue of copyright infringement in emerging market countries is exacerbated by multiple factors, including weak enforcement and unavailability of legitimate copies of digital goods. Associate Professor of Information Systems, Business Statistics, and Operations at HKUST **James Kwok** examined digital copyright infringement in developing economies,

proposing cost-effective ways to combat copyright infringement through the use of search engine de-listing policies.

In exploring the best ways to delist infringing materials from search engines, Prof Kwok picked 4 movies in 2 emerging market countries, Hungary and Thailand, and analyzed the publicly-available Google search engine data for searches of copyright infringing materials for each movie as requested by users in each country. Moreover, Prof Kwok narrowed search engine data analysis to a time frame surrounding each movie's theatrical release date and DVD release date.

Prof Kwok found two peaks of searches for copyright infringing digital media, specifically during the month of a given movie's theatrical release date and during the month of its later DVD release date. Accordingly, he contends that by de-listing infringing search engine results during these months of peak searching for infringing material, movie piracy could be considerably reduced without resorting to a more disruptive longer de-listing window.

Find out more about the event at <http://iems.ust.hk/delisting>



## INVESTING IN INNOVATION TO IMPLEMENT THE PARIS CLIMATE AGREEMENT: ENABLING PUBLIC-PRIVATE PARTNERSHIPS IN CLEAN ENERGY TECHNOLOGY

Public Seminar co-organized by Civic Exchange, HKUST Institute for Public Policy (IPP), and HKUST IEMS (2016.04.22)



**Varun Sivaram**, fellow at the US Council on Foreign Relations, advisor to New York Governor Andrew Cuomo on Reforming the Energy Vision, and advisory board member for both the Woods Institute for the Environment and the Precourt Institute for Energy at Stanford, articulated the major objectives of international partnerships to invest in clean energy technology, reviewed recent progress—especially between the United States

and China—and made recommendations for how the world could best leverage the political will displayed at the 2016 Paris Climate Change Conference.

Dr. Sivaram emphasized that addressing climate change requires advanced, low-carbon energy technologies, especially in the realm of large-scale consumer and industrial power generation. While investment in clean energy deployment rose to \$329 billion in 2015, investment in clean energy innovation was less than 1/10th of that figure. A major milestone of the Paris Climate Change Conference was that twenty countries agreed to double their funding for innovation and research and development on clean energy by 2020. Dubbed "Mission Innovation," their pledge was supported by the "The

Breakthrough Energy Coalition" of 27 billionaires committing to invest patient, flexible-risk capital for projects which will provide the economic proof points necessary for the mainstream, market-driven, clean energy economy required for a more environmentally sustainable future.

With respect to the prospects for various types of renewable energy to gain traction in the energy markets of countries around the world, Dr. Sivaram pointed out that as solar and wind power become increasingly economical and more pervasive, existing technologies may become less economically viable. Dr. Sivaram and his colleagues at the Council on Foreign Relations propose a cost target of US \$0.25 per watt—down from US \$0.70 per watt in 2012—at which point solar and wind can achieve widespread economic viability. However, such a target can only be met with the introduction of new technologies and/or major efficiency improvements in existing technologies.

Dr. Sivaram concluded by emphasizing that the most crucial aspect of the Paris Climate Change Conference and Mission Innovation is international coordination, as countries navigate incentives to cooperate and fight climate change as well as to compete for national returns from public renewable energy investments.

Find out more about the event at <http://iems.ust.hk/paris-climate>



## RESEARCH GRANTS AWARDED IN 2016

HKUST IEMS Research Grants support high-quality research that provides valuable insights into the challenges facing businesses and governments in emerging markets. In 2016, the Institute encouraged collaborative proposals among HKUST faculty and with researchers outside HKUST, and awarded 8 grants for unique research conducted on a broad range of emerging market related issues.

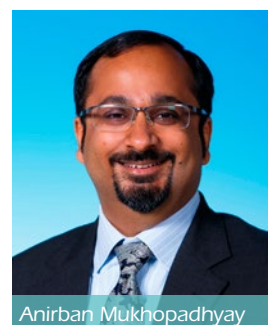
Research Topic	Principal (Co-)Investigator(s)
The Pearl River Delta: An Emerging Silicon Valley	Naubahar Sharif (Social Science)
Does Monitoring Improve Entrepreneurial Performance? Testing the causal Effects of Structured Accountability	Sam Garg (Management)
Morality in the Emerging Marketplace: How Cultural Mindsets Affect Consumer Responses to Firm Transgressions	Rashmi Adaval (Marketing)
Generically Modified: Effects of Consumer Benefits about Food Constituents on Health	Anirban Mukhopadhyay (Marketing)
The Effect of User-Generated Social Media on Product Demand	Wenbo Wang (Marketing)
Understanding Food Consumption in Developing Countries	Young Eun Huh (Marketing)
Does Accountability Deter Individuals from Serving as Independent Directors? Evidence from a Corporate Governance Reform in India	Kasper Meisner Nielsen (Finance)
Overcome the Legitimacy Effect: the Role of Agency in Firm Innovation in China	Bilian Sullivan (Management)



Find out more about the research grants at <http://iems.ust.hk/grants>

## SIX NEW FACULTY ASSOCIATES JOIN IEMS

IEMS welcomes six new Faculty Associates: **Rashmi Adaval** (Professor of Marketing), **Utpal Bhattacharya** (Professor of Finance), **Alicia Garcia Herrero** (Adjunct Professor of Economics), **Young Eun Huh** (Assistant Professor of Marketing), **Anirban Mukhopadhyay** (Professor and Associate Dean of Marketing), and **Kasper Meisner Nielsen** (Associate Professor of Finance).



See our full list of Faculty Associates at <http://iems.ust.hk/faculty>

## New Members Join the HKUST IEMS Team

HKUST IEMS welcomes three new post-doctoral fellows to our team: Wei-fen Chen, Weiwei Hu, and Xiang Ma.

**Wei-fen Chen** received her Ph.D in Communications and Media from the University of Illinois at Urbana-Champaign. Her research focuses on consumer culture in the contemporary society, particularly in regard to the psychographic and demographic features and consumption practices of individuals experiencing social mobility.

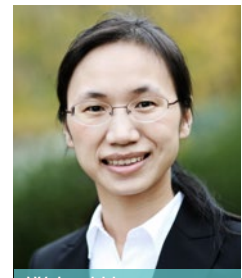
**Weiwei Hu** received her Ph.D in Economics from Duke University. Her research focuses on empirical evaluation of school admission systems and peer effects in social networks.

**Xiang Ma** received his Ph.D in Economics from Yale University. His research focuses on public good provision and agriculture in emerging markets. He conducted field work in Gansu Province of China and studied school consolidation there.

Meanwhile, **Joey Chu**, has joined the Institute as the Administrative Manager. She is responsible for the Institute's daily operation and administration including budget and research grants management, event management, staffing as well as providing committee services to the institute.



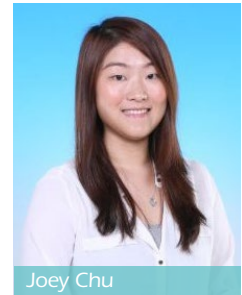
Wei-fen Chen



Weiwei Hu



Xiang Ma



Joey Chu

More details on our post-doctoral fellows are available at <http://iems.ust.hk/postdocs>



## NEW THOUGHT LEADERSHIP BRIEFS

### China as the World's Technology Leader in the 21st Century: Dream or Reality?

**Naubahar Sharif**, Associate Professor of HKUST's Social Science Division, describes China's current technological prowess in terms of research and development intensity, personnel, number of scientific publications, and number of patent applications, all of which indicate that China is currently one of the world's top producers of high tech research, and is set to be the world's tech leader before the end of the century.

### Digital Copyright Infringement in Emerging Markets: Countering Piracy through Smarter Search Engine De-listing

**Kai-Lung Hui** and **James Kwok**, Professor and Associate Professor at HKUST's ISOM Department, examine digital copyright infringement in developing economies, and propose 3 ways to combat copyright infringement through the use of search engine de-listing policies.

See all of our Thought Leadership Briefs at <http://iems.ust.hk/tlb>



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