IT INNOVATION IN CHINA:
INDUSTRY AND BUSINESS CAPABILITIES

ICIS 2011 PANEL STATEMENT

Abstract

China is investing heavily in leading edge and innovative information technologies to support its continuing economic growth. At the same time, Chinese businesses increasingly need to innovate with IT to create competitive difference and expand internationally. However, to what extent has China developed the capabilities to develop IT innovations and adopt them to generate value and competitive difference? This panel session will build learning on the capabilities both of the software industry and of businesses in China around IT innovation. To create a rich picture of maturity, skills and management processes concerning innovation, this multi-disciplinary session will bring together diverse perspectives from research and practice. By drawing on experience from Europe and the USA, as well as China itself, it will also reflect on key differences and lessons which can be learnt from China’s vast IT investment and rapid acquisition of skills.

Keywords: Track 21. Panels, Buyer-supplier relationships, Capabilities, Crosscultural issues/cultural differences, Innovation, IS curriculum, IS/IT professionals, Management techniques, Software industry
Introduction

Since the start of its economic reforms in 1979, China has seen a phenomenal rate of economic growth. Supported by its integration into the world economy following accession to the World Trade Organization, Chinese GDP growth has averaged 10% per year during this period.

It is well established that Information Technology (IT) has become an important contributor to the economic success of a country as well as individual firms (e.g. Brynjolfsson and Hitt, 2003; Jorgenson, 2001; Kohli and Grover, 2008). Accordingly, the Chinese government has recognized the importance of IT for many years and invested heavily in IT infrastructures to enable the ‘informatization’ of the economy and government. This investment is reflected in China’s climb up the rankings of the World Economic Forum’s Network Readiness Index, where it improved from 59th in 2006 to 36th in 2010 – 2011 (World Economic Forum, 2011).

In the 12th 5 year plan (2011 – 2016), the government defines ‘new generation information technologies’, such as RFID and cloud computing, as one of their seven strategic industries for investment, with planned investment in these seven industries of RMB 11-14 trillion over the course of the plan. Furthermore, two of the other key themes of the plan, investment in sustainable technologies and the increasing urbanization of the population, have substantial implications for IT infrastructures and applications. As a result, China is building vast technical capabilities in leading edge and innovative information technologies.

It is also increasingly important for Chinese businesses to adopt and innovate with IT in order to compete globally. Indeed, as IT becomes a crucial enabler of value and a source of competitive difference for businesses throughout the world, effective and imaginative use of IT will become increasingly central to Chinese business success.

The process of innovation can divided into three broad phases – the invention of a new product, technology or process, the translation of the invention into a usable and potentially commercial form and the widespread adoption and diffusion of the innovation. Within each phase, there has been substantial research on the organizational capabilities that can support innovation as well as external and institutional factors which can contribute to success (e.g. Rogers, 1995; Zhu et al, 2006; King et al, 1994;)

However, to what extent has China developed the capabilities to develop and adopt IT innovations so as to create value or competitive difference?

The session explicitly aims to share knowledge between the panelists and the audience on areas which currently have limited understanding, especially outside China. By bringing together a wide range of experience, it will consider China’s capabilities for successful innovation with IT in the future, as well as reflect on lessons from China’s massive IT investment. In doing so, it will focus on three distinct but related questions:

• What are the capabilities of Chinese software suppliers in developing innovative products and services;
• What are the capabilities of Chinese businesses in adopting IT innovations successfully; and
• How are management processes which support IT innovation and good client / supplier relationships evolving?

The session will be based on a dialogue between research and business and will therefore be of particular interest to practice-orientated researchers from China and other countries, as well as those interested in the development of innovation capabilities. It will consider the training requirements for IS professionals in China, building on ICAEW’s experience in China of training accounting students and supporting the government and local bodies in developing the accountancy profession.

The panel will be written up for publication to the Communications of the AIS journal. ICAEW will also publish key points from the session through its communications with the business community. By bringing together different perspectives, this will provide a valuable resource to many other interested parties.
Controversial issues and panelists’ positions

1. What are the capabilities of Chinese software suppliers in developing innovative products and services?

While foreign multinational software and IT services companies are increasingly active in China, the evidence suggests that China is still in the early stages of developing its own software and IT services sector (e.g. Lacity et al, 2010). Domestic suppliers are typically fragmented by industry, with high degrees of concentration in each sector. Suppliers also tend to focus on hardware and infrastructure services (Carmel et al, 2010). This is reflected in the fact that the majority of business expenditure on IT continues to be on telecoms and hardware. Expenditure on software and services constitutes only 7% of spend, a significantly lower proportion than seen in developed economics and an indication that the innovative capacities of the software industry are still relatively low.

However, this is likely to change in the future. The IT industry in China, like other industries, has developed around a manufacturing model, with less emphasis on services. In the 12th 5 year plan (2011 – 2016), the government continues its strategy of developing the services sector and increasing domestic innovation. Furthermore, there is a growing consumer technology sector, based on the rapid take up of internet and mobile services in China, encouraging innovation within the broader application development community.

The panelists will consider the current maturity of the software and services industry in China, its innovation potential and any further institutional support which may be needed to encourage the development of the sector.

2. What are the capabilities of Chinese businesses in adopting IT innovations successfully?

Chinese businesses invest heavily in technology, with IT spending in China estimated by Gartner in 2010 to be $216 billion (Gartner, 2010). In order to generate value, though, management must first articulate the needs of the business and identify innovations which support these needs. This is a long standing challenge for businesses, as the value from IT systems is not intrinsic but rather comes from their use and integration into business practices.

It is well known that China is investing substantial resources in training large number of students in engineering and IT. However, to what extent is this investment providing the skills and capabilities that Chinese businesses need in order identify software innovations and work effectively with the supply sector to adopt them?

Furthermore, while formal education and training may play an important role in developing skills, learning within the business environment and sharing knowledge across businesses is also likely to be important. Staff working for foreign multinationals may find a range of opportunities for external influence and cross-organizational collaboration within their working environment. They may also be able to rely on experienced foreign nationals or Chinese returning from overseas to fill middle and senior management roles. How are Chinese businesses approaching this challenge?

The panelists will reflect on the skills of Chinese IT management and the approach taken by Chinese businesses to developing IS capabilities. They will also consider lessons from the rapid acquisition of IS skills.

3. How are management processes to support IT innovations and good client / supplier relationships evolving?

There has been extensive research in developed economies on the management structures and organizational practices which underpin success in IT innovation and build strong relationships with suppliers. These include alignment of IT and business strategy, IT governance processes and knowledge sharing mechanisms (e.g. ICAEW, 2008). On this basis, how are Chinese businesses and software suppliers developing practices to manage their ongoing relationships and to share knowledge about IT
innovation? Furthermore, how relevant is the notion of culture difference to understanding these practices?

There has been substantial research based on the notion of cultural difference, such as Hofstede's framework of national cultures (Hofstede, 1980). While this framework has been criticized on various grounds, it highlights differences between Chinese and Western cultures which could impact on the evolution of management practices, such as:

- The high degree of power distance in China compared to the US;
- The high degree of collectivism in China compared to the US; and
- The high degree of uncertainty avoidance in China compared to the US.

Thinking in terms of cultural difference, though, may not be the most fruitful approach to understanding distinctions in Chinese management practices. The notion of cultural difference can often be used to describe differences that are deeply rooted in economic, political and social structures and which may change over time. Indeed, China has been undergoing substantial cultural change alongside its rapid economic growth and different generations may have strongly divergent perspectives. There may also be significant differences between foreign multinational businesses, which are likely to import Western management practices, and Chinese businesses such as state-owned enterprises, which may be more likely to develop distinct practices. Given this complex and changing environment, how do we best understand the practices emerging in China and identify important differences?

Panelists will reflect on the cultural differences between China and other countries and the way that management practices regarding IT innovation and supplier management are evolving.

**Panelists’ positions**

This panel brings together diverse perspectives to share knowledge and opinions, thereby building up a rich picture of innovation in China. This includes perspectives from:

- Different geographical areas, including China, the US and the UK;
- Different academic disciplines, including economics, IS and management accounting; and
- Research and practice.

**Robert Hodgkinson** brings a broad base of financial and accounting knowledge, including financial reporting, audit, management accounting and corporate governance, as well as ICAEW’s experience of training accountancy students and supporting the development of the profession in China. He will moderate the discussion.

**Professor Anyu Lee** brings experience of R&D and innovation in the technology sector in China. He will focus on the supplier base in China and the development of innovative Chinese software and IT services businesses. He will lead the comments on discussion 1.

**Professor Ji-Ye Mao** brings a broad IS research perspective and will focus on research findings concerning the skills and capabilities of IT management in Chinese businesses and the curriculum of IS students in Chinese universities. He will lead the comments on discussion 2.

**Professor Neale O’Conner** brings a management accounting perspective, having undertaken extensive research on management controls in multinational businesses in China. He will focus on the aspects related to management processes and cultural difference. He will lead the comments on discussion 3.

**Roberto Evaristo** brings the experience of an innovative and multinational business which has extensive dealings with businesses in China. This will enable him to draw comparisons between China and other countries around management processes and innovative capabilities.

**Ning Wright** brings the perspective of Chinese businesses and industry to the panel. She will share her experience of the adoption and management of IT by Chinese businesses and the growth of the IT industry in China.
Panel Structure

The panel will be based around a discussion between panelists and interaction with the audience. There will be no Powerpoint presentations.

The session will be divided into three parts, each lasting 25 minutes. This allows for a short introduction to the session by Robert Hodgkinson and concluding comments from each panelist (15 minutes in total). Each of the three sections will be briefly introduced by Robert Hodgkinson and key comments will be given by 1 academic panelist (5 minutes) as outlined previously. One of the business representatives will have 5 minutes to respond, based on their experience in practice. The discussion will then be opened up to the other panelists and the audience for questions and comments (15 minutes).

Biographies

Robert Hodgkinson

Robert Hodgkinson is the Executive Director, Technical at ICAEW (Institute of Chartered Accountants in England and Wales). ICAEW is a world leading finance and accounting professional body which represents 136,000 members, over half of whom work in business. He moderated the panels Returns on IT Investments: Could we do better? at ICIS 2009 and Information Security and Privacy: New Governance Models at ICIS 2010. He is also a co-author of the panel write ups in the Communications of the AIS. He is a Chartered Accountant and a Board member of the International Federation of Accountants. He graduated in Philosophy, Politics & Economics from Corpus Christi College, Oxford University.

Roberto Evaristo

Prior to joining 3M in late 2006, Roberto was on the faculty of the Liautaud Graduate School of Business at the University of Illinois, Chicago. He has researched and consulted extensively for over fifteen years with many of Forbes’ 500 largest worldwide companies. At 3M, Roberto has developed novel knowledge management methodologies and applied them to offshore outsourcing, M&A integration, strategic account management, and management of R&D. In this role, he has significant dealings with the Chinese businesses environment. He has published over 100 book chapters, conference proceedings and refereed articles in both academic and practitioner journals. He has also been a frequent keynote speaker in worldwide meetings and conferences. Roberto earned his Doctor of Philosophy in Management Information Systems from the University of Minnesota.

Professor Anyu Lee

Anyu Lee is a Professor in MIS at the University of International Business and Economy, Beijing. He joined the UIBE from the China Academy of Sciences, where he was Director of the eCommerce R&D center. Before that, he was President of the Research Institute, Digital China. His main research interests are eCommerce mutual trust mechanisms and service chain optimization. He has had over 120 papers published in Chinese and international journals and conferences. He holds a Ph.D from Stanford University (1995).

Professor Ji-Ye Mao

Ji-Ye Mao is a Professor of MIS and Associate Dean in the School of Business, Renmin University of China. His areas of research include user participation in the design and implementation of information systems, IT outsourcing management, and IT management in general. His research has appeared in journals such as Journal of MIS, Journal of AIS and Communications of the ACM. He is on the editorial board of journals including the Journal of AIS, Electronic Commerce Research and Applications, Journal of Database Management, and Information & Management. He holds a Ph.D in MIS from the University of British Columbia (1995). Previously he was a tenured faculty at the University of Waterloo in Canada.

Professor Neale G. O’Connor

Neale O’Connor is Associate Professor of Management Accounting at The University of Hong Kong. Neale joined the University of Hong Kong in 2006. Since completing a PhD in Accounting in 1996, Neale's

Ning Wright

Ning Wright holds several key leadership roles at KPMG China, chiefly: Partner in Charge, Outsourcing and Shared Services Advisory, China; Partner in Charge, Information, Communications and Entertainment, China; National Head, Electronics, Software & Services (ESS) and Partner-in-Charge for Performance and Technology Services. She steers a prominent team of specialists with a strong focus on the outsourcing industry to assist both global and regional clients on a broad scope of needs, including China-entry strategy, outsourcing and off shoring strategy, location and vendor selection, inbound/outbound mergers and acquisitions and sourcing process improvement. Ning has also been appointed by the Shanghai Municipal Commission of Commerce as an outsourcing advisor for the city of Shanghai. With an extensive international experience, having lived and worked in the USA, Europe, the Middle East and regionally in Asia Pacific, Ning is also a distinguished thought leader representing China and KPMG at a number of international conferences.

References