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# User Experience in Asia

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**Why User Experience in Asia?**

The User Experience (UX) profession originated in North America and Western Europe in the late 1980s (Dumas, 2007). In the last 10 years it has begun to expand to the rest of the world. In Asia, the fastest growing and most dynamic economic region in the world (World Bank, 2013a), the UX field has seen rapid development in recent years. Although only 7% of UXPA members in 2012 were from Asia (Dumas & Saporova, 2012), in some Asian countries, there are a large number of UX practitioners working in different industries. I estimate that just in China there are thousands of people engaged in UX related work. How did the profession develop? What is the current situation for UX practitioners and practices? How has the course of its development been shaped by Asia's particular social, economic, and cultural contexts? How will its future development be affected? And what can our colleagues in the rest of the world, especially those in the developing world, learn from our experience? This article provides a brief answer to these questions, discusses some other interesting UX-related issues, and provides my personal view about the future of the UX profession in Asia.



## Demographics

According to World Bank (2013b) and Wikipedia (2013), about 4.3 billion people live in Asia, accounting for about 67% of the total world population. Asia is the world's most populous and most densely populated continent. Its urban population accounts for approximately 18% of the total population and is growing rapidly. Countries with more than 100 million people include China, India, Indonesia, Japan, Bangladesh, and Pakistan. Asia has a long history, great cultural diversity, and more than 1,000 ethnic groups. Most Asian countries have more than one language that is natively spoken. For example, India has 15 major languages in addition to English—its official language (The World Factbook, 2013).

Asia has experienced rapid economic development in recent years, although there are enormous differences in development levels across the continent. Among 48 Asian countries and regions, most are in the developing stage with a weak industrial base. The most modern countries and regions in Asia are Japan, Korea, Singapore, Taiwan, and Hong Kong. But the rapid economic rise of China and India in recent years has had a profound impact on changes in the world's economy in the 21st century.

While, in recent years, information and communication technology (ICT) industries in Asia have seen rapid growth, there are other factors that have supported this growth. According to the data from the Internet World Stats (2013), Asia has grown in the following ways that support its economic growth:

- By 2010
  - The electricity penetration rate reached 79%.
  - Basic educational achievement in Asia reached 93% for primary school enrollment and 75% for secondary school enrollment.
- By 2011
  - The TV penetration rate reached 83 per 100 households on average.
  - The PC penetration rate reached 42 per 100 households.
- By 2012
  - The mobile phone penetration rate reached 111 per 100 people. However, there are large differences in the rates between leading and lagging countries. For example, in 2012, for the five countries and regions with the highest penetration rate, the mobile phone penetration rate on average was 214 per 100 people, while for the five countries and regions with the lowest penetration rates it was just 35 per 100 people.
  - There were 1.076 billion Internet users in Asia with a penetration rate of 27.5%. Asians make up 44.8% of the world Internet user population.

## UX by Country/Region

The following sections give a summary of how the user experience field is practiced in each of the following countries/regions.

### **China**

With the backdrop of rapid economic growth and great social-economic change in China in the past 30 years, the concept of usability and user-centered design (UCD) was introduced to this country only after 2000 as a result of the evolution towards an increasingly mature market economy. In order to strengthen their competitiveness, companies have begun to pay more attention to enhancing UX for their products and services. When this movement began, people interested in UX came from a variety of backgrounds including computer science, psychology, design, and industrial engineering (Liu, Zhang, Zhang, & Chen, 2011).

I came from computer science and worked in distributed computing in the 1980s. Due to chance, I received and read a leaflet asking for papers for the INTERACT'1990 conference. This was my introduction to the field of human-computer interaction (HCI). I taught myself about HCI from reading papers and books and conducting some research in Germany and Britain in 1992-94 during a visit. Later on, influenced by the Chinese government's policy to encourage universities to better serve economic development, my interest shifted from theoretical research

topics to the practice of usability and UCD in 1997. This led to the foundation of the Sino-European Usability Center in 2000, which was part of the EU's Fifth Framework Program project, UsabilityNet (<http://www.usabilitynet.org/home.htm>) led by Dr. Nigel Bevan.

The UX field in China gained its momentum from usability activities conducted by multinational companies such as Siemens, Microsoft, IBM, Nokia, Motorola, and eBay. More recently stiff international competition has made UX an important issue for many leading Chinese companies. The UX profession, stimulated by this competition, expanded more rapidly beginning around 2004. From then on, more and more Chinese companies have joined this trend. The spontaneous demands for usability and UCD have become a major driving force for this field in China (Liu, Zhang, Zhang, & Chen, 2011).

Leading Chinese companies like Lenovo, Huawei, Tencent, and Baidu have now had a decade or so of experience in their UX practice. Some of these companies have been successful implementing better UX practices in their products and services over the years, which has increased the acceptance of UX principals by the companies' management and product development units. UCD teams are continuing to grow in size and number and are developing multidisciplinary expertise.

UX practice in China has generally focused on the consumer electronic products and online services in which there exists intense competition, such as mobile products, home appliances, e-commerce, and social media. UX has rarely involved other domains such as customized software applications, intranet applications, e-government, e-hospital, and industrial applications. Initially, usability practice tended to focus on evaluation, while in recent years the focus has included user-driven innovation and design.

In the academic sphere, some Chinese scholars started to pay attention to UX from the late 1990s but their interest was narrowly focused on research. A somewhat broader focus on HCI research and education has emerged only in a few university departments or research institutes of computer science, industrial engineering, psychology, and design. In comparison to its popularity in industry, UX is still not well recognized in most universities (Liu, Zhang, Zhang, & Chen, 2011).

Currently in China (and in the rest of Asia) there are no academic or professional journals dedicated to usability or HCI like the *Journal of Usability Studies*. UX research papers can only be submitted to journals of the related disciplines such as computer science or psychology. Those journals use "hard science" evaluation criteria, so the likelihood of acceptance of papers is not good. Although papers can be published through some local HCI or usability conference proceedings, universities do not recognize those publications as valuable or scholarly. We in the profession hope that the recent government policy to encourage industry-academia synergy will help to improve the academic standing of UX in the future.

Related professional organizations like ACM SIGCHI China and UXPA China, established around 2004, have been actively organizing the Joint Conference on Harmonious Human Machine Environment and the User Friendly Conference to foster research, education, and practice in the UX field. The Interaction Design Committee organized China Interaction Design Experience Day/Week in 2010 and every year since. The events sometimes attract over 1,000 attendees.

### **India**

India has the second largest population in Asia (1.18 billion in 2010), the fourth largest economy in the world, and is a land of diversity—over 2,000 ethnic groups and 22 official languages. On one hand, India is often thought of as the destination of choice for technology outsourcing, while on the other hand, in 2001, 35% of the Indian population was illiterate and 72% lived in the countryside (Joshi & Gupta, 2011).

Information and communication technology (ICT) has been limited in India for a long time. Apart from high costs and poor infrastructure, the multitude of languages and a weak educational system form significant barriers. In recent years, the fast growth of mobile communication infrastructure has finally enabled a majority of Indians to use ICT for the first time. At the same time, Indian companies started to use the Internet and interactive products extensively in their services, which has led to a demand for usability and HCI design expertise to be used for Indian products. Multinational companies, particularly the Internet and hardware companies, have started looking at Indian users in respect to their user experience. UX

expertise has spread rapidly in Indian IT companies, with the top quarter of the mainstream companies setting up usability teams for their products and services (Joshi & Gupta, 2011).

In education, the HCI design discipline developed mainly in design schools. Informal teaching of the concepts in interaction design started in the 1990s, followed by formal courses and programs. It was estimated that by 2010, only 400 students had graduated with some formal knowledge and skills in HCI from universities (Joshi & Gupta, 2011). In addition to this formal education, some companies currently offer training programs for professionals.

The usability and HCI design community in India became active in 2001. HCIIDC (<http://groups.yahoo.com/neo/groups/hciidc/info>), a mailing list of HCI professionals in India, had grown to over 2,000 members in 2010. While there has not been an annual conference on usability and HCI yet, many individual conferences and large events have been held. A few local chapters of international organizations have been established, such as the UXPA chapter in Hyderabad and the ACM SIGCHI South India chapter (Joshi & Gupta, 2011).

Recently, industry funding has joined with government funding to support research in HCI. The topics of research vary widely. Design of interactive products for internal Indian needs is a specific broad area many researchers are interested in, including design for low literacy, low cost technology for India's multiple cultures and languages. UX in software development processes is another broad area of interest (Joshi & Gupta, 2011).

Along with the economic growth, India seems to be a market waiting for a few breakthrough interfaces and applications to enable Indian consumers to embrace digital technology. We expect the usability and HCI professionals to play an important role in this endeavor. However, the lack of a business demonstration showing the return on investment in usability in the local context and imported usability methods that are still not thought to be suitable enough for the Indian culture are barriers to the acceptance of the UX profession. Lack of HCI university education, particularly for students in the IT/CS specialties, is another big challenge (Joshi & Gupta, 2011).

### **Japan**

Japan is the most developed country in Asia with an advanced ICT industry and wide ICT application in the society. Usability activities in Japan started from its approach to ergonomics in the 1980s that focused on PC and Japanese word processors. Then Japan developed a product evaluation method based on cognitive psychology. In the 1990s, usability of digital devices became a major focus. With the introduction of the human-centered design processes for interactive systems ISO standard (ISO 13407:1999, 1999), usability professionals realized the importance of the interdependence between human-centered methods and design and started to pay more attention to user research in the early stages of the product lifecycle. The usability approach has become UX-oriented compared to the previous evaluation orientation. More recently, web usability and universal design have joined the user experience with Kansei engineering principles, which relates a user's physical and psychological response to a product, as the focus of attention. As described in Kurosu (2011), usability activities in Japan have changed very much: from evaluation to user research, from the design process to the whole lifecycle, from hardware to software products and the web, from manufacturing to service, and from ergonomics to cognitive psychology then to the ethnologic approach.

In Japan, the usability activities are mainly conducted by people in industry, rather than academic institutions. There are less than 10 academicians who majored in usability engineering. The reason is that developing usability methods is not respected in academic research. The major role of academicians in Japan is to introduce Japanese industries to usability methods developed in the West. Although some academicians are involved in the development of new methods and tools, they don't have a good way to validate them, which hampers the research (Kurosu, 2011).

Only a few universities have usability engineering programs, and the programs are not popular. At some universities usability engineering is sometimes grouped with informatics programs, while other universities place usability engineering within design programs. It is far more common to receive some usability education through on-the-job training in certain industries and professional associations. For example, the Japan Technical Communicators Association

issued guidelines on the curriculum and the criteria for competence for usability professionals (Kurosu, 2011).

The Human Centered Design Network (HCD-Net, <http://www.hcdnet.org/>), established in 2004, is the national organization that conducts usability engineering activities in Japan. Currently HCD-Net has about 250 members and holds the International Conference on Human Centered Design in conjunction with HCI International (<http://www.hci-international.org/>) biannually. HCD-Net has developed a certification system for usability practitioners. The system has three certification options: the first is for usability professionals, the second is for engineers and designers expected to have some usability knowledge and skills, and the third is for students learning usability. In 2009, 119 people were issued the first certification option (Kurosu, 2011). Of course, 119 is not a large number, but as there is a long-term debate on whether we should have a certification system for UX professionals, it can be seen as an interesting experiment for us to watch.

### **South Korea**

The remarkable development of ICT industries over the past three decades in South Korea has stimulated research and development activities related to usability. Three key sectors have played important roles: industry, educational institutions, and government (Lee & Lee, 2011).

Universities are active in usability, but it is primarily based within design and computer science departments. Universities offer educational curricula, conduct research projects supported by industries and government, and participate in academic societies and conferences.

There are many usability related professional organizations in South Korea. The South Korean HCI (<http://www.hcikorea.org>) conference is now the biggest conference in the HCI field in South Korea, attracting 1,000-2,000 attendees each year. Major topics covered by the conference have evolved from a focus on GUIs to the web and mobile devices, and from just usability to the broader concept of user experience. Other academic societies active in usability are Korea Society of Design Science, (<http://www.design-science.or.kr>), Ergonomics Society of Korea (<http://esk.or.kr>), and Korea Society for Emotion and Sensibility (Lee & Lee, 2011).

It is estimated that there are around 2,000 usability practitioners in South Korea (Lee, Ji, & Lim, 2011), which is quite a large number in terms of the scale of industry in South Korea. Usability related activities in industry are mainly carried out by consumer electronics vendors like Samsung and LG, and web portal companies like Naver and Daum. The characteristics of the Korean double-byte character language has taught South Korean companies a lesson that understanding their unique cultural and user needs and providing specific services for them is the best way to survive in the market (Lee & Lee, 2011).

Many South Korean companies set up their usability teams to establish UCD processes in the product lifecycle. The developers of the South Korean search portal Naver studied South Korea-specific Internet infrastructure, such as online content and users' behavior patterns, to optimize its services for their users. Naver's practice in user experience design demonstrated how a small, local South Korean company can satisfy its customers and successfully compete with global giants such as Google. Their success shows that the South Korean industry can compete internationally and has stimulated the application of usability research to novel interaction design and overall user experience design for future products in the global market.

The government-initiated usability research is divided into design, cultural content, and information technology. This research is intensively supported by the Ministry of Knowledge Economy and the Ministry of Culture, Sports, and Tourism. In addition, the National Information Society Agency in the Ministry of Public Administration and Security works to improve the accessibility of all e-government websites. This agency sponsors an annual evaluation of accessibility for websites, including the following evaluation criteria: "easy recognition," "easy use," "easy understanding," "effective technology application," (and particularly) "usability for minority users" like the elderly or disabled. The evaluation also leads to the accreditation with a "quality mark" of web accessibility for information service institutes. In addition, the agency publishes the national standard for web accessibility and usability (Lee & Lee, 2011). It is these government initiatives that develop synergy between academia and industry that we don't see in other Asian countries.

### **Other Countries and Regions**

The state of the user experience profession in other parts of Asia varies greatly. For some parts in which there are strong ICT industry and knowledge workers, like Singapore, Taiwan, and Hong Kong, there are usually some usability practices in industry. The emphasis varies depending on the major local industrial sectors. In Taiwan the emphasis is in product design in manufacturing, in Singapore in their service industry, and in Hong Kong the service and digital media industries. Also, in these countries and regions, relevant research is conducted in universities by professors and funded by government and by industry, though the funding focus is usually on technology innovation, not on HCI. Often, HCI courses are offered as an option in computer science or industrial engineering departments in these universities. Due to the relatively small number of active professionals, local usability and HCI communities tend to be informal (Baciu, 2011; Li, 2011; Lim, 2011).

For other countries or regions, such as Indonesia, Malaysia, Thailand, and the Philippines, where the economy is in the process of industrialization and where there is no established ICT practice, the number of user experience professionals is quite small, consisting only of a few pioneering people. Some exceptions can be found, for example, in the Philippines one of the big telecom companies established a group to ensure that usability is integrated into development. However, there are only a few vendors that formally test the usability of their products before release in the market, which has created an employment gap for usability professionals. While there are some usability lab facilities and research projects in usability and HCI conducted by universities, these disciplines are generally not valued and do not receive stable funding from either government or industry. As further evidence, few universities offer usability in their undergraduate or graduate curricula (Castillo-Matias & Seva, 2011; Sari & Tedjasaputra, 2011; Teeravarunyou, 2011; Yeo et al, 2011).

### **Key Trends**

From the above review of the status of the usability profession in Asia, you can see that the situation is different in each country and region, based on their history of economic development, ICT maturity, research, education, and local chapters of HCI organizations. Are there any trends over the region that may stimulate the less developed countries to grow their commitment to user experience? The following is my analysis of trends that might answer this question:

- Development of ICT industry. All the Asian countries or regions with an established usability community are without exception the places with a well-developed ICT industry. These countries and regions have developed and are maintaining ICT infrastructure. Depending on the emphasis of the local ICT industry, usability professionals serve either in the ICT manufacturing sector or in a service industry, such as telecommunications, banking, and logistics. Japan, Korea, mainland China, and Taiwan are strong both in manufacturing and in service, while Singapore and Hong Kong focus more on service. The dominance of the sector determines the employment distribution of usability professionals.
- Embracement of competition. Competition in the market is a key factor affecting the demand for usability professionals. Demand for usability professionals starts with private sector competition. Companies that compete need to compete with products and services that are usable, desirable, and functional for their consumers. Those markets are where usability professionals are mainly employed. However, where there is a lack of competition, such as in the public sector (governmental organizations and social services), usability design and evaluation is rare; however, these sectors should still address usability for the sake of helping their users, which are ultimately their consumers.
- Expansion of markets. The size and value of the market affects the need to invest in usability, as businesses allocate where return on investment can be maximized. For example, why did usability grow in China and India? The reason lies in the size of their markets as well as the resulting competition.
- Direct contact with end-users. The need for a usability process in a company happens in those industries in which companies directly interact with end users in determining

what to develop and in evaluating its success in the market and where companies value brand-building. In some Asian countries, like in India and some coastal areas in China, there is a huge ICT industry, but it mainly provides software and service outsourcing. In those regions, the scale of the industry is large and there are many companies and a large number of employees, but usability programs are rare. Companies there tend to focus on implementation and the after-sales stage of the product lifecycle, which makes them not feel the need for a user-centered design approach.

- Development of products and services intended for multiple cultures and literacy levels. In some Asian countries, such as India, there is a large proportion of the population outside of the mainstream target user group. For example, there is a small proportion of educated consumers and a large proportion of low income, low literacy consumers. There are also substantial differences in culture and language within the country. This diversity presents special challenges for the development and use of ICT products and services. User interfaces designed for one or only a few languages have a limited market. That is why HCI or UCD for development (HCI4D or UCD4D) has been a popular theme for years in India and similar developing worlds. HCI and UCD principles can help companies develop products and services that can serve multiple cultures and literacy levels.
- Government promotion of usability. Governments can play an important role in promoting usability. For instance in South Korea, through research funding, ICT professional qualification, accessibility and usability standards for government online services, and other means, the government effectively promotes the growth of usability. Japan is another example. In 1999 the Ministry of International Trade and Industry held a meeting for more than 100 industrial associations to introduce the contents of the ISO13407 standard. The meeting highlighted potential problems if companies decided not to implement the standard and presented the value to Japanese industries if they did adopt the standard, which eventually prompted Japanese companies to learn about and adopt the standard quickly.
- Dominant disciplines vary. Usability is a multi-disciplinary field, in which contributions come from ergonomics, psychology, computer science, industrial design, sociology, and ethnology. Because of the differences between Asian countries and regions in social and economic development, political systems, culture, and education, not all of these disciplines are strong. In China, Japan, and Korea, computer science, design, and psychology have thrived and are the major driving force for UX field. In India, it is the design discipline, while in Southeast Asian it is ergonomics playing a major role.
- Recognition of the value of usability principles via multinational corporations. Multinational corporations have stimulated the development of the UX profession by importing usability practices common in their Western-based companies to their Asian counterparts. In their endeavor to expand their market into Asian countries, these multinational corporations often take the lead in setting up local usability teams to apply usability methods to the Asian market. The local Asian companies see the UX processes practiced by the multinationals, and they often begin to implement them in the development of their own products.

### **Looking Ahead**

Over the past decade or two, usability as a field has grown to be valued by some Asian companies, universities, and governments. The main driving force behind the growth of the usability field is the rapid development of some Asian economies, as well as the recognition that the usability field is an increasingly important factor that can increase the position and influence for Asian-based industries in the world economy. Looking to the future, economic development will also be the driving force for the future growth of usability and its extension into more emerging economies.

Reviewing the development to date of the usability field in Asia, we, UX practitioners, should work to guide industry, governments, and academia to address and rectify some of the following challenges:

- The isolation of academia from industry in most Asian countries must be reversed. Establishing a synergy scheme between the usability field and academia should be explored. This synergy could help universities orient their research to meet the needs of industry and product end-users and could help industry benefit from the latest research inquiries. This joint effort would also be fundamentally important for the recognition of HCI or usability in academia.
- The education and training for usability professionals needs to be strengthened. On the university side, educational programs should be modified to train more students in modern usability methods. On the industry side, on-the-job training for usability practitioners should be expanded and, where possible, coordinated with university curricula.
- HCI courses need to be included as a core component in the syllabuses for computer science, design, human factors, and other related disciplines. That effort should substantially enhance awareness of usability and UCD and encourage more academic staff members to be involved in HCI. The legitimacy of HCI as a valuable field of research needs to be established at universities. This change will be hard to achieve but must be overcome for a healthy development of the field in the long run.
- The diversity of Asian languages needs to be addressed. An important challenge to a more satisfying UX in Asia is the diversity of languages. Except for a few places like India, Singapore, and Hong Kong, English is not an official language. This fact makes communication difficult either between colleagues from Asian and non-Asian countries or between different Asian countries. This language diversity presents an obstacle for the exchange of knowledge in many situations, such as conferences, professional organizations, and collaborative projects. To break through this barrier, international organizations in usability should help to build multilingual platforms for exchange. For example, UX magazine by UXPA provides translation of abstracts in multiple languages including Chinese, Japanese, Korean, Spanish, and Portuguese. We need "ambassadors" to help bridge the gap between different language communities.
- Local UX pioneers must emerge to spread the word about the importance of our field and to begin the growth of usability fields into a larger sustainable community. Professional organizations in usability need to continue their important role in fostering this field in Asia. In Korea, China, and Japan, the contributions made by the local professional organizations in introducing and promoting the concept of usability are clear. While in other parts of Asia, the local usability organizations encounter difficulties in their formation and development. A successful local organization must work for the local culture.

There is still a long road ahead for the UX field to prosper in Asia. The success up to now is encouraging. However as we have seen, there are challenges ahead. I believe that as the growth of the economy and markets in Asia increase, the establishment of a strong UX profession is inevitable.

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