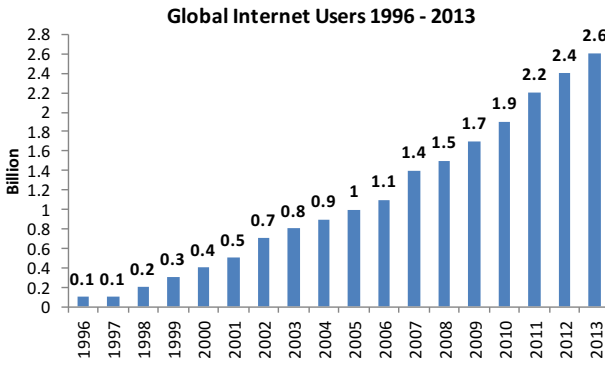
E-commerce and Internet Trends

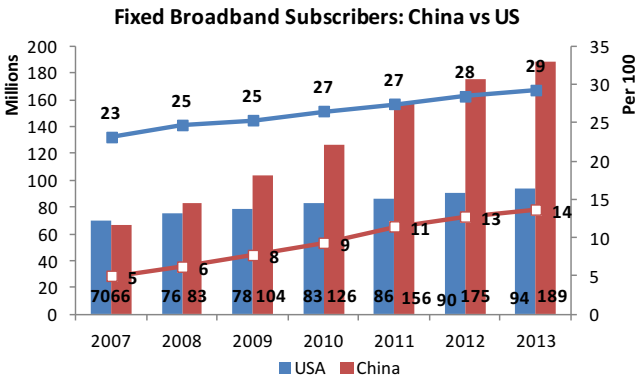
US vs China

E-commerce has been growing rapidly globally with annual turnover of more than USD 1.3 trillion by the end of 2014, up 22% from the previous year. This represents almost 6% of global retail sales.[1] China for its part has been posting figures of RMB 1.2 trillion as of September 2013 to RMB 1.8 trillion as of September 2014 according to the National Bureau of Statistics. The US has somewhat slower growth but still represents the biggest global market, with 300 billion USD in 2014. Needless to say, e-commerce has become a central part of our daily lives. However, if we take one step back and ask ourselves what effects has the onset of e-commerce had on different industries' supply chains, distribution channels and overall economies? Is there any major difference how the arrival of Internet retail and Internet platforms has come about in the US as compared to China? How do these two markets differ at present? We will try to set the basis for further discussion on these questions in the content to come. Moreover, we will try to look deeper into what specific problems does e-commerce address and what holds in the medium future for this impressive phenomenon called Internet.

The Internet has changed everything – the way we live, the way we consume, the way we communicate. As such, the Internet can be viewed as the third industrial revolution.

Web browsers together with the first web pages such as Yahoo in 1994 represent the basis for the first major Internet trend of gaining as much traffic as possible on a particular online platform. This has been especially the case in the world of e-commerce. Namely, the more traffic there is in traditional retail stores, the more chance of higher sales, using the same logic that was established for e-commerce. This kind of Internet business model has been widely popular – and still is – but starting from 2007, an additional important input arrived in the form of *smartphones*.



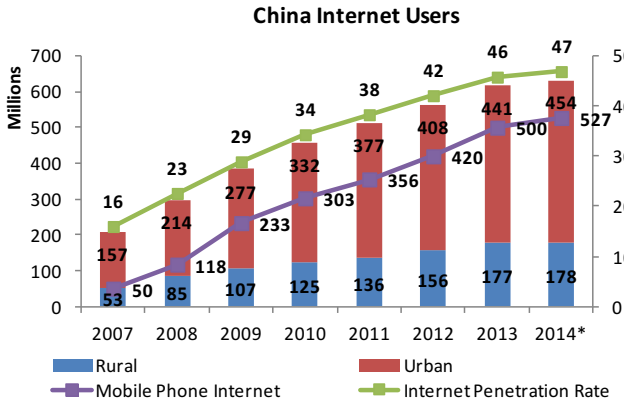


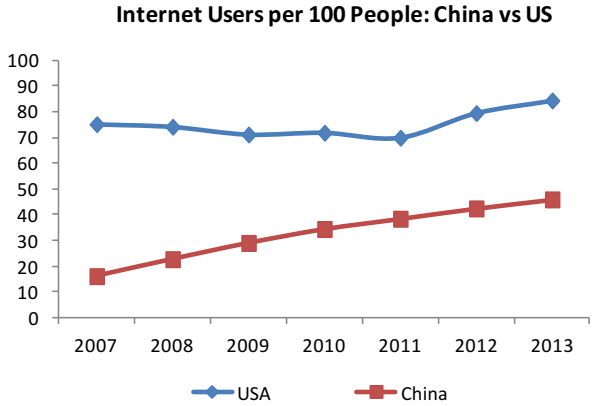
1 https://www.internetretailer.com/2014/12/23/global-e-commerce-will-increase-22-year
http://www.forbes.com/sites/forrester/2014/05/12/us-e-commerce-grows-reaching-414b-by-2018-but-physical-stores-will-live-on/ accessed on 20.03.2015

With the rapid growth of smartphone usage, we have witnessed smaller online platforms gaining market share and obtaining funding. The shortening of the supply chains has been exacerbated by smartphones since companies are now able to directly communicate with their customers.

Economy and Supply Chains

As previously stated, the Internet and the advent of e-commerce have indeed reshaped the global economy. This can be seen in changes to international trade, currency exchanges and new perspectives of trade relations between developed and developing economies.





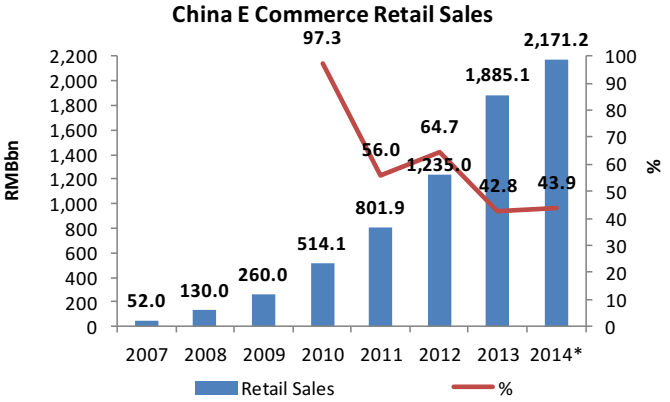
When we look at individual economies, the introduction of e-commerce has had two significant impacts: an increase in productivity and a decrease in inflation.[2] These two are related in that when we have increased efficiency, then the end product is cheaper and due to the increase in competition, there is further potential for prices to decline. The trend is further facilitated by non-participating companies, as they are expected to react to the increased competition from e-ommerce and therefore increase their own productivity which further decreases prices and inflation. The increase in efficiency is primarily seen in managing of the supply chains as e-commerce has profoundly changed the distribution channels. Namely, the intermediaries are skipped, or significantly weakened, whereby e-commerce has enabled the companies to directly reach the final consumer. More importantly, big data allow them to know exactly who their customers are. As in the past, all the major technological improvements that led to increased competition in turn further improved the innovation process as companies tend to gather pace compared to their competitors. E-e-commerce is no exception.

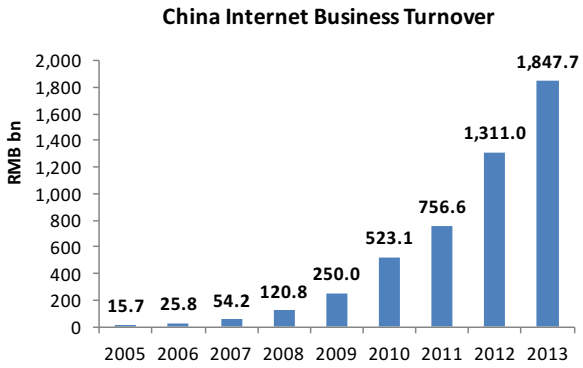
At the initial stage of e-commerce in the US, there was low demand for online shopping as only the tech savvy and curious would give it a try. That is why large retailers were slow to enter e-commerce in 2001 when 75 percent of it consisted of non-physical stores.[3] However, we have since witnessed brick and mortar stores entering the e-commerce sector as more consumers go online for their purchases.

[2] What Impact Will E commerce Have on the US Economy by Jonathan L. Willis p 53
Diagrams - Global Internet Users Source: UN/International Telecommunication Union; Fixed Broadband Subscribers Source: International Telecommunication Union, World Bank; China Internet Users Source: China Internet Network Information Center *2014 as of June; Internet Users per 100 People Source: International Telecommunication Union, World Bank

[3] What Impact Will E commerce Have on the US Economy by Jonathan L. Willis p. 63

Furthermore, information technology costs have been decreasing which also motivates traditional stores to go online. However, late online entry and different organizational cultures to true e-commerce companies have been proving to be a challenge to many of the successful traditional retailers.





The introduction of e-commerce represents a revolutionary shift in dealing with the intermediaries in the supply chain. The companies upstream and consumers downstream have been empowered by the limitless information. Even though the information is still expensive to be produced, it can be multiplied and issued to an unlimited number of people with information distribution costs essentially non-existent. The benefits achieved from intermediary weakening can be distributed between manufacturer and buyer.[4] From the companies' perspective one of the most obvious improvements introduced by e-commerce has been lower labor cost. In addition, the companies have been able to expand the presence of their products internationally. With respect to manufacturing and material ordering, this has also been helped by access to cheaper suppliers that are now competing more actively due to e-commerce. In addition, communication with suppliers has improved as it has become less costly with more high quality information being transmitted. The supply chains have seen improvements in ordering procedures, lower costs of correspondence and faster document filling procedures. Suppliers receive the documents immediately, which, in turn, leads to a decrease in the workforce in the supply management area. Those companies that have many suppliers have particularly benefited from e-commerce as an electronic ordering system makes it much less labor intensive. Furthermore, the adoption of e-commerce has allowed companies to maintain fewer assets in their inventories.

Additionally, e-commerce has aided companies to have higher returns with a lower average cost of production.[5] According to research, after the advent of e-commerce, revenues for a typical company have not changed significantly but the company's input or costs did.[6] As this particular survey has shown, a lowering of the labor costs has proved to be the most beneficial aspect of adopting e-commerce in the supply chain management. Nevertheless, the level of benefits largely depends upon the company's cost structure. Narrowly concentrated e-commerce decisions within specific departments will have limited

[4] The Evaluation of E commerce Impact on Business Efficiency by Petras Barsauskas, Tadas Sarapovas, Aurelijus Cvilikas p. 80 Diagrams - China e-commerce Retail Sales Source: China e-business Research Center (CECRC) *2014 projected for the second half of the year; China Internet Business Turnover Source: China Internet Network Information Center

[5] The Evaluation of E commerce Impact on Business Efficiency by Petras Barsauskas, Tadas Sarapovas, Aurelijus Cvilikas p 81

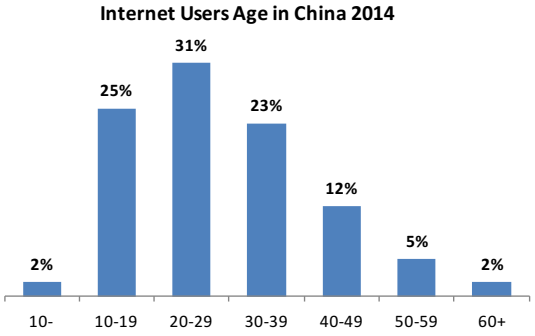
[6] Ibid pp 86

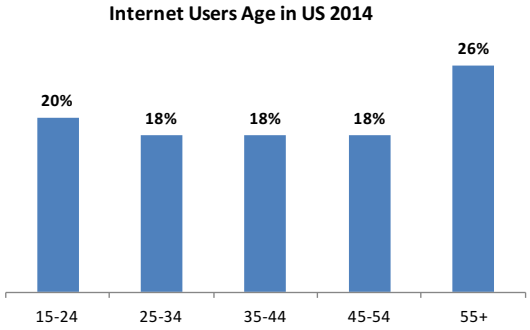
impact on total business efficiency.[7] Furthermore, as the information factor has been the most important aspect in the adoption of e-commerce, different industries have benefited variously from its implementation. For instance, coal mining is one of the industries that benefited the least from introduction of e-commerce as the industry has z limited number of buyers and suppliers.[8]

Consumers, meanwhile, have been enjoying lower prices and easier access to a greater variety of products. The online shopper has become smarter with more information at their fingertips. The process of searching, ordering and receiving has become much easier.

E-commerce: US vs China

Even though the Internet has global reach, there are many obstacles that prevent well known e-commerce web sites from successfully operating both in the US and China using the same business model. In addition to regulative (political), language and technical issues, there are also the cultural differences. According to research done on cross-cultural differences between the US and China in adopting e-commerce, there are 3 main obstacles: language, values and infrastructure.[9] If we look at Chinese Internet surfers we can see that they tend to prefer using their native language to search for information. Therefore, a Chinese-language web site should also be designed with a different cultural approach and values system. Moreover, Internet users in China tend to be younger than in the US.



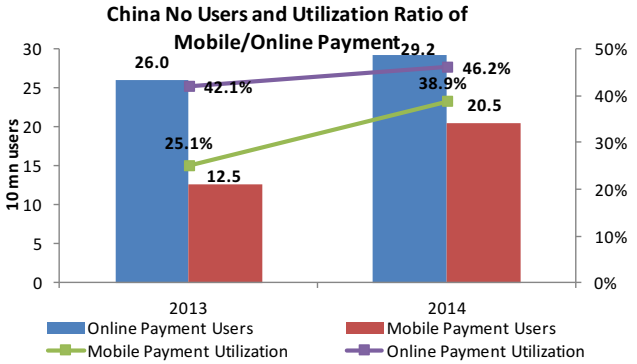


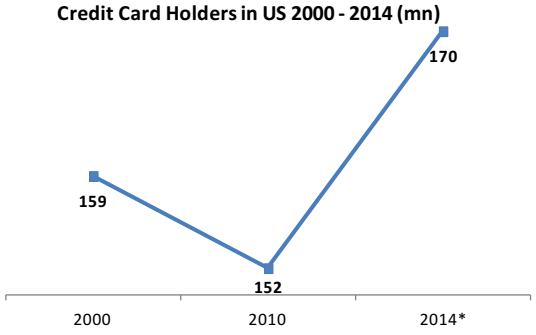
Credit Cards vs Cash

Internet shopping payment modes also represent a difference between the two markets. The adoption of e-commerce in the US has been largely dependent upon the credit card system. On the other hand, the credit card system in China is not as widespread as in the US. Golden Card was the first credit card verification scheme designed to promote the use and dissemination of cards.[10] However, in practice it worked more like a debit card. A national clearing system, the Centralized National Automated Payments System (CNAPS), was also being built at the time. Nonetheless, Chinese consumers historically have preferred to pay by ready money and that is why at the very beginning of e-commerce, Internet users were paying by cash on delivery. Fast forward a few decades and we can see that today's "online to offline" platforms resemble some of these characteristics. On the other hand, China has been pioneering

[7] Ibid pp 89
[8] The Evaluation of E commerce Impact on Business Efficiency by Petras Barsauskas, Tadas Sarapovas, Aurelijus Cvilikas pp 76-77
[9] Cultural differences in E – Commerce: A comparison Between the US and China p 49
Diagrams –Internet Users Age in China Source: China Internet Network Information Center; Internet Users Age Source: Statista
[10] Constraints on E commerce in Less Developed Countries: The Case of China p. 33

payment applications on smartphones, which has driven the rapid development of mobile business applications. The number of mobile payment users increased by 63% in the first half of 2014 to reach the utilization rate of almost 40%, compared to 25% in 2013.[11] This trend has been having a profound impact on mobile shopping but also on the financial and banking system of China. The reason Chinese have been so willingly approving the payment application system is that it is one of the more secure payment methods. In an instant the buyer can pay and the seller can receive the money, as if the transaction has been occurring by the most preferable way - cash. In that respect, Internet companies such as Alibaba and Tencent have been able to attract their users' deposits. This is proving to be a significant competitive advantage as the two companies have diversified from social networking and e-commerce into the financial sector. This in turn has had a profound impact on the banking system in China. Due to the mobile payment system, there has been a significant increase in the number of online payment users in China, reaching 300 million in 2014.





Infrastructure

At the start of the century, Chinese Internet companies did not have the necessary infrastructure for delivery and payment transactions.[12] At that time, the state-owned Post Office that provided the main delivery services was notoriously slow. One could have never have imagined that e-commerce in China would become as efficient as it is today. One of the main drivers for the rapid improvement in infrastructure has been the "delivery man". The Chinese market has an abundant supply of delivery employees.

Individual vs Group

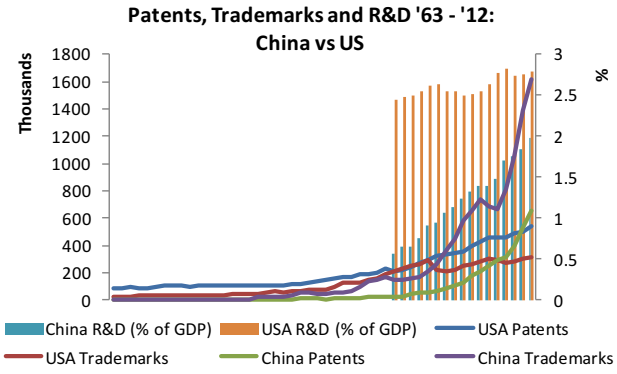
Chinese society puts more focus on social relationships, and this has also indirectly shaped their approach to the Internet and to e-commerce. This is very different to the individualistic society as seen in the US. Even with advanced e-commerce, many Chinese prefer personal dealings with those whom they have already traded rather than unknown Internet sellers.[13]

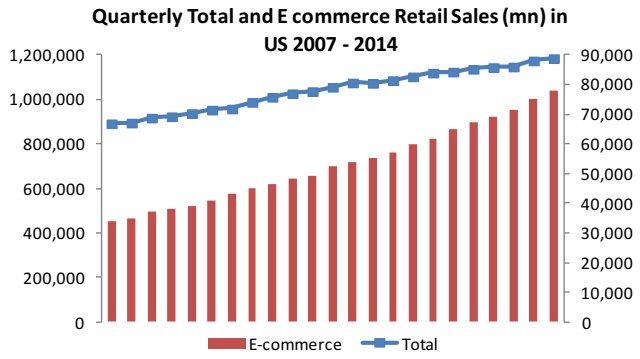
[11] China Internet Network Information Center report p. 4
Diagrams – China No Users and Utilization Ratio of Mobile / Online Payments Source: China Internet Network Information Center; Credit Card Holders in the US Source: Statista
[12] Cultural differences in E – Commerce: A comparison Between the US and China p. 53
[13] Constraints on E commerce in Less Developed Countries: The Case of China p. 35

In the US, institutions such as research universities, government, venture capitalists and law firms have been the key to the innovation process. In Silicon Valley, the leading figures from these institutions and operating companies know each other both formally and informally, which is very important for innovation. On the other hand, such informal relations in China are either absent or under construction.[14]

Intellectual Property

Trademarks and intellectual property had historically been one of the main ingredients for innovation. According to a social community app start-up founder in China, a company must grow fast in order to survive.In the US, there is a well-established copyright system in place, but in China there is tendency to copy ideas that are seen as successful. US start-ups, on the other hand, aim to offer the same solution that is upgraded to benefit end customers and be more competitive. Moreover, as the Chinese market further develops, there will be an increasing focus on copyright protection that will enable competition by offering upgraded solutions.



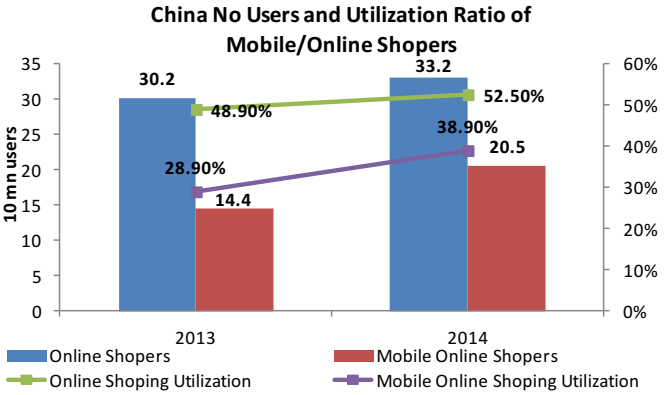


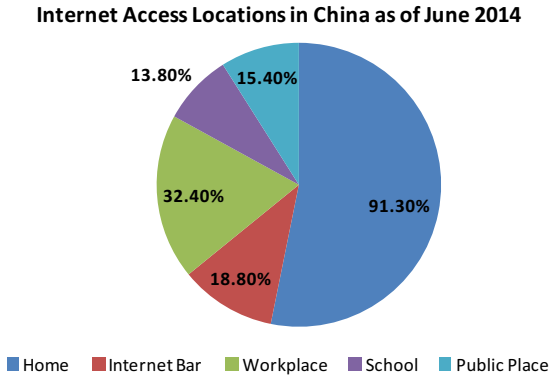
Aggregate vs Personalize

If we look at the two markets' e-commerce giants such as Alibaba and Amazon we see that they have both been built on the premise of aggregate traffic. However, as the consumer becomes more informed and gains access to limitless data through smartphones, the purely aggregate traffic business model might not be enough to maintain the present market share. As consumers turn more individualistic, the behavioral patterns will be crucial for an e-commerce to reach their users. In the US, we have witnessed many apps diverting traffic from bigger platforms, which has also been the case in China, albeit at a slower pace. As a tech industry analyst put it during an interview with BBC News, "unlike in other parts of the world, potential entrants to the Chinese market are facing well funded aggressive home grown players".

[14] Ibid pp 40

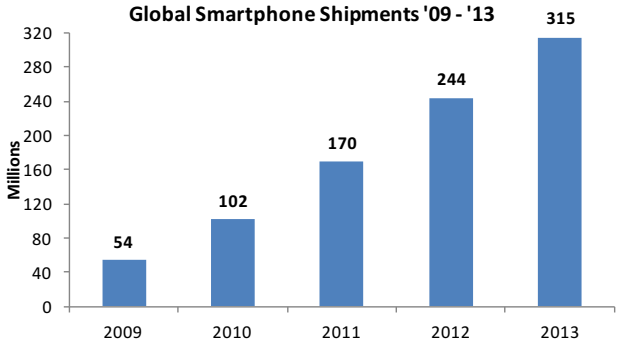
Diagrams – Patents, Trademarks and R&D China vs US Source: World Bank *R&D measured from '96; China trademarks from '80 and patents from '85; Quarteryl total and E commerce Retails Sales Source; China Internet Network Information Center

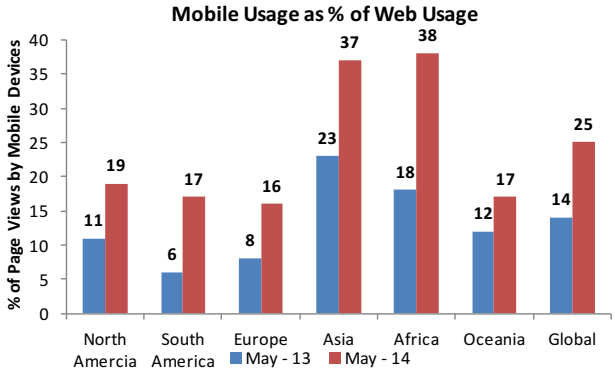


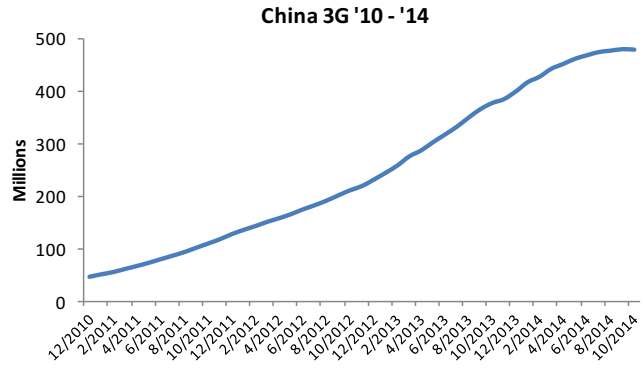


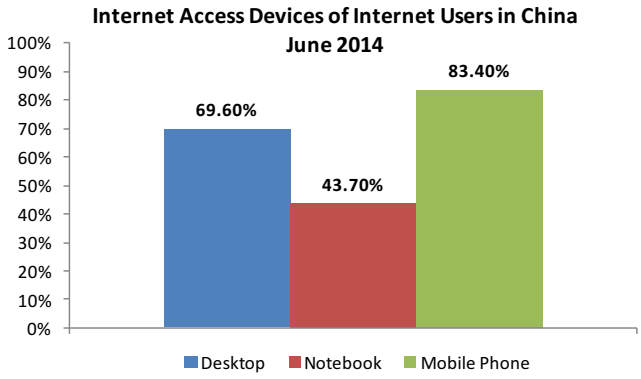
M commerce

Overtaking mobile phones as the fastest-selling devices in history, smartphones are conquering our planet. Developing countries, in particular, have experienced an increasing number of users. At the end of 2013, more than 30% of global phone users were using smartphones.[15] According to estimates, about half of the global adult population owns a smartphone.[16] The device is essentially a portable personnel computer that represents a new computing cycle following the original computers.









[15] KPCB Internet Trends; Morgan Stanley research

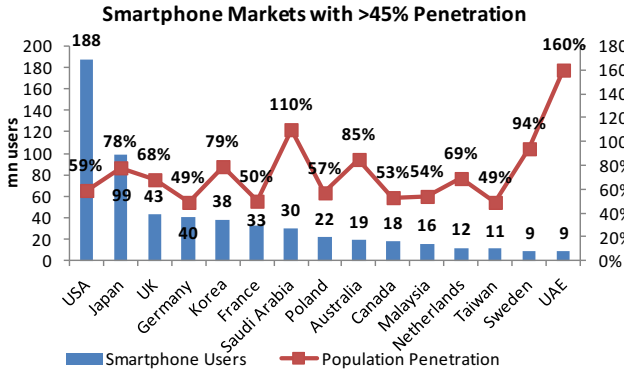
[16] Economist Magazine March 2015: Planet of the Phones p. 7

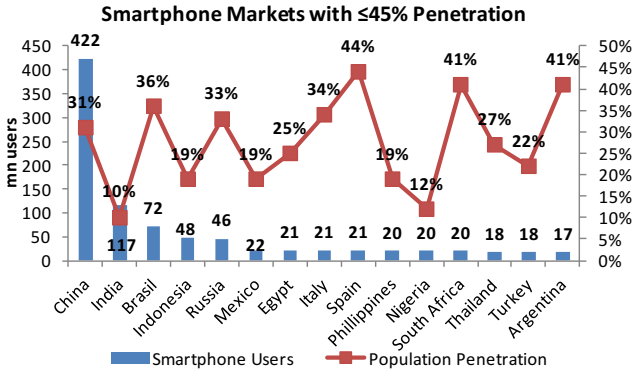
Diagrams – China No of Users and Utilization Ratio of Mobile Online Shoppers and Internet Access Location in China Source: China Internet Network Information Center; Global Smartphone Shipments Source: Morgan Stanley; Mobile Usage as % of Web Usage Source: StatCounter

According to the Internet trends research done by Kleiner Perkins Caufield Byers (KPCB) at the end of 2013, 97% of global smartphone operating systems originated from the US compared to only 5% in 2005. Systems such as Android and IOS have been dominating the upstream market apps' platforms. This is also the reason why many of the tech start-ups are based in Silicon Valley.

China has been experiencing a mobile miracle for a number of years now where mobile data usage has been surpassing the wired personal computers in some parts of the country. Smartphones are proving to be a cheaper alternative for Chinese to stay online and that is why m-commerce is said to have an even brighter future in this country. Increasing mobile data usage fundamentally represents the mode of how e-commerce is being brought to China.

Two smartphones of the same brand look the same on the outside, however they are completely different inside as they are personalized to the needs of two different owners. In turn, these needs and habits are digitalized and, as such, are easily accessible by the platforms holders through big data channels. That is why nowadays many of the tech companies are able to connect and interact directly with their customers.



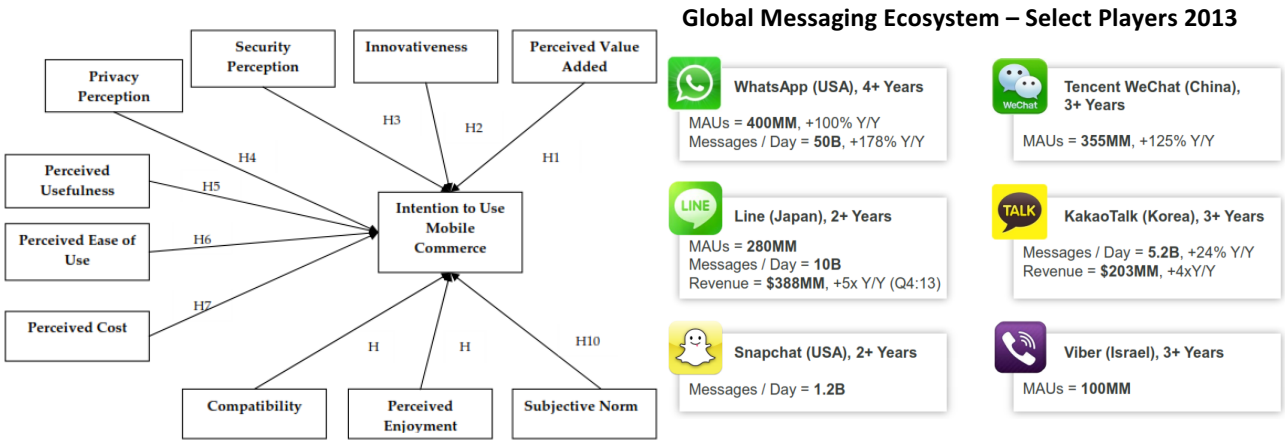


Diagrams – China 3G Source: Ministry of Industry and Information Technology; Internet Access Devices of Internet Users in China Source: China Internet Network Information Center; Smartphone Markets Source: Informa

Cross Cultural Differences

As it was the case with e-commerce, culture has proved to be an important input in adopting the idea of mobile shopping. Lee et al in 2004 introduced five cultural measures for m-commerce usage: power distance, uncertainty avoidance, individualism-collectivism, masculinity-femininity and long term orientation. The study has shown that there are major differences in culture of m-commerce adoption

between the US and China on uncertainty avoidance, power distance and individualism-collectivism.[17] Hofstede (1991) has found that societies in low uncertainty avoidance are open to embrace new technology such as the US while consumers with high uncertainty avoidance such as Chinese tend to refrain from such technologies.[18] Nonetheless, Chinese smartphone users have been embracing innovation in many of the services offered as long as it is a collective push. Furthermore, in the US, consumers would use more personalized platforms to showcase their individuality, which is opposite to Chinese consumers, who typically feel more comfortable as a part of the group.[19]



The most important aspects of the above model with regards to m-commerce in China have been innovativeness, perceived usefulness, perceived cost, subjective norms and perceived ease of use. On the other hand, for US users the most important aspects were consumer privacy, innovativeness, perceived usefulness, enjoyment and compatibility.[20] According to the results of the research, there was a significant difference in cost perception, enjoyment and subjective norms between China and the US.[21] Moreover, the subjective norms and enjoyment were much higher in the level of importance in the US, while for Chinese users the cost of usage has been the most important.[22] Chinese people consider expenses and functionality before opting to use m-commerce. On the other hand, the US consumer puts more focus on personalization and on the enjoyment aspects of mobile shopping. The characteristics found to be most strong on both sides were privacy, innovativeness, perceived value added, usefulness, ease of use and compatibility.[23]

[17] Mobile Commerce Adoption in China and the United States: a Cross – Cultural Study p. 52
[18] Ibid pp 57
[19] Mobile Commerce Adoption in China and the United States: a Cross – Cultural Study p. 57
[20] Ibid pp 54
[21] Ibid pp 54
[22] Ibid pp 56
Diagrams – mCommerce Adoption Model Source: Mobile commerce Adoption in China and the United States: Cross Cultural Study; Global Messaging Ecosystem Source: KPCB
[23] Mobile Commerce Adoption in China and the United States: a Cross – Cultural Study p. 56

Summary

Global Internet users have been experiencing declining computing costs, declining storage costs and declining bandwidth costs. Factor in the growing population and declining average price of smartphones and you have a ripe environment for the rapid growth of Internet usage. In addition, we have seen a change in business model from users accessing one platform to a number of platforms accessing each user. Namely, after the introduction of smartphones, we have seen a different trend where one Internet user chooses from numerous apps. These apps are developed for a single purpose in order to address a concrete need with the philosophy of "less is more".

The Economist magazine came out with an illustrative title - *The dawn of the planet of smartphones came in 2007*.[24] This latest computing cycle has introduced a whole new mode of how consumers and companies interact. Although Internet and e-commerce have shortened supply chains, smartphone technology has gone one step further by completely eliminating the middle man. Drivers to purchase certain products include authenticity, association, convenience, experience, variety and value. All these have been facilitated with the personal computer in our pocket. With the trend of individual consumerism on the increase, companies are now able to be closer than ever to their customers.

That the Internet is very powerful is confirmed by the fact that light asset companies are now able to significantly change their supply chains and even affect overall economies. One of the most exciting trends is that smartphone technology has enabled people to address some of the most pressing challenges that we as human beings are facing.

Looking into the future, we will see more of devices that are able to gather data that is then used to offer customized services and solutions to end consumers. The most important competitive advantage for Internet companies has been big data and its usefulness through analytics.

[24] Economist Magazine March 2015: Planet of the Phones p. 7