The Future of the Internet: Made in the USA… and China?

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Historically, internet usage and the evolution of internet business models in China have been commonly described as lagging the United States and taking a simplistic approach of replicating existing US internet business models. However, there has been significant change and innovation across the internet globally in recent years, and we believe it would be an inaccurate oversimplification to think about the United States versus China internet investment framework in this manner. For example, the rapid pace of smartphone adoption in China has led to a proliferation of low-cost mobile internet access, providing a foundation for new business models. We believe that investors should follow developments in the Chinese internet landscape for insight on how US mobile usage and monetization models could continue to evolve and impact legacy industries that don’t embrace the change.

In this paper, we examine and compare how internet adoption in the United States and China has fueled the growth of e-commerce, online advertising, and other areas of innovation and disruption, often at a scale in China far surpassing that in the United States. We also share our outlook for some selected key investment topics in the internet sector.
Internet Penetration Trends

Internet penetration has been high for a long time in the United States, first exceeding 50% of the US population approximately 15 years ago and now approaching 90%. The country’s commitment to broadband internet connectivity drove early and continuous innovation in the internet spanning the web 1.0 portals like Yahoo and AOL, e-commerce with eBay and Amazon, search with Google, and social platforms like Facebook and Twitter. Now many new models are emerging as mobile applications, completely bypassing the desktop-based internet.

At the time these US internet companies were being founded, internet penetration in China was very low at less than 10% of the population. However over the last 7–8 years, China’s internet adoption and usage has expanded rapidly and now approaches 50% penetration and a staggering 640 million users versus almost 300 million in the United States (Exhibit 1).

So how did we see so much progress so fast in China? The acceleration in the adoption curve can be attributed to many factors including government focus on infrastructure buildout to improve connectivity and bandwidth availability, as well as a rising middle class, but also importantly by the evolution of the smartphone industry. The iPhone was launched in 2007, which sparked innovation in the handset industry in both hardware and software. Smartphone shipment growth accelerated in China as the open-source Android operating system from Google helped commoditize the hardware. This drove down the average selling price (ASP) in China for smartphones from $300–$400 to below $200 since 2013. Many models are now selling below $100, and China is now the largest smartphone market in the world at over 400 million unit shipments a year (Exhibit 2). This decline in the cost of smartphone hardware dramatically improved the affordability of internet access compared to the alternative cost of a personal computer at average prices near $600.

The installed base of smartphones and mobile internet users has provided the foundation for structural shifts to online across multiple industries, and at an impressive scale. Many of the initial internet business models in China were born out of necessity, as US search and social networking services were blocked. However, we are now also seeing unique trends in the Chinese markets, which in many respects have outpaced those in the United States in terms of online penetration and scale. Disruption is most evident in the retail, advertising, and financial sectors, and there is potential for further innovation across many other markets.

E-commerce Adoption in China Is Moving Structurally Higher Than It Is in the United States

With a well-developed home delivery infrastructure and high internet penetration, e-commerce has seen a very steady progression in the United States, consistently taking share from offline retail spending. As shown in Exhibit 3, it took a lot longer for e-commerce to gain traction in China, but once internet adoption achieved critical mass, and industry leaders began to organize their own courier and delivery networks, e-commerce ramped rapidly. E-commerce spending as a percentage of
total retail sales in China surpassed that in the United States in 2012, and it is likely to exceed 10% this year compared to the US level of 6%-7%.

While it is impressive to see China’s rate and pace of e-commerce growth move past the United States’ so quickly, it should not be surprising once we look at the legacy offline retail industry in China against that of the United States. China has a less mature physical retail industry. There is no Chinese equivalent to Macy’s or Nordstrom, for example, and there is 77% less retail space per capita compared to the United States. This absence of established distribution brands and the small amount of retail space has provided an opening for online retailers as they do not have stiff offline competition and can undercut the prices of potential upstarts operating with brick and mortar infrastructure. So with significantly fewer physical retail shopping alternatives, as well as fewer and weaker established retail brands, China is ripe for significant e-commerce disruption.

Another key difference between the e-commerce markets is the amount of concentration in the Chinese market compared to the much more fragmented US market. Alibaba controls more than 75% of the Chinese e-commerce market with over $400 billion of gross merchandise selling on its platform in the 12 months ended June 2015. Alibaba is similar to eBay as Alibaba’s marketplace platform enables 8 million merchants to list their inventory for sale and reach over 367 million active shoppers.

To frame its scale and concentration of the market, Alibaba’s sales are (Exhibit 4) seven times larger than the number-two player JD.com, and now surpass Walmart’s entire US business. Alibaba is four times larger than US e-commerce leader Amazon’s US business, which only controls 29% of the more fragmented US e-commerce market, despite its perception of a more dominant presence.

More recently there has been an aggressive push by both the large internet players in China, as well as venture capital funded startups, to bring additional categories of consumer spending online beyond just traditional retail goods. These more nascent “O2O” (offline to online) markets are still early in their development and size in areas like food delivery, local services, transportation, and health care. However, much like retail e-commerce in China, these O2O markets have the potential to be larger scale and gain quicker adoption than in the United States given weaker incumbent brands and infrastructure in the offline markets. Movie tickets is an example of an O2O market where Baidu has seen quick traction in driving online purchase penetration to 50% of the market, versus just 10% a few years ago. Over the next five years, in both countries, it will be interesting to see how the e-commerce market broadens from just ordering goods over the internet to including new innovative O2O services like on-demand pay-per-appointment video conferencing with doctors.

### Shift to Online Advertising Is Driven by Mobile and Social

The online advertising markets have developed quite similarly in the United States and China so far, each with a large dominant search provider and a more fragmented display advertising market, but the shift from desktops to mobile is accelerating the pace of change.

In Exhibit 5 we can see that as media consumption shifted online, the advertising budgets then followed, to the point where each country now sees more than 25% of advertising spend online. One key difference that benefits the US online advertising market is that the more fragmented e-commerce landscape means that consumers in the United States often begin their shopping experience with search, which encourages very aggressive advertising spend by the e-commerce players, accounting for roughly 21% of US online advertising.

However in China, most shoppers go straight to Alibaba or JD.com, bypassing the search engine, which limits the need for search advertising spend by the more dominant e-commerce players in China.

As internet usage has shifted from desktops to mobile devices, social networking and messaging platforms have emerged as some of the most widely adopted and used apps on smartphones. The functionality of the social platforms continues to expand and evolve, as the smartphone’s unique characteristics of having always-on connectivity, as well as being location and identity aware, have enhanced the power and strategic value of the handful of social apps that have leading scale and user engagement.
Today, Tencent has the clear leading position in China with over 600 million active users on its Weixin/WeChat social media platform, which is almost all of the country’s internet population. In contrast, Facebook, which remains blocked in China, is the global leader in social media with 1.5 billion users. Each market is at varying stages of maturity in terms of monetization of their large user bases. US advertisers have embraced the unique combination of targeted advertising at scale, as Facebook receives 76% of its advertising revenue from mobile devices and the company is near a $12 billion annual mobile ad revenue run rate. Meanwhile, China’s social platforms have had monetization success via micro payments for gaming and digital stickers/goods, accelerating the mobile gaming market to over $7 billion in 2015 in China. We believe both the US and Chinese companies are still in the early stages of monetizing these messaging platforms and it will be interesting to monitor how payments, e-commerce, and advertising features continue to become integrated into these social platforms, which have built audience scale at unprecedented rates (Exhibit 6).

Online Payments: Dominated by Incumbent Networks in the United States, but Key Internet Platforms Are Shaping the Landscape in China

Online payments are a key enabling technology for the e-commerce and online advertising markets we have been discussing. The ability to accept payments online in an integrated and seamless manner is obviously a critical necessity for completing e-commerce transactions, but it is also increasingly important for closing the loop between online advertising and the eventual conversion of clicks/views into transactions. To the extent that online payments integration removes friction and enables more transactions to be completed online instead of offline, the trail of data generated will make it easier to measure the return on investment for advertising spend, and should provide insights to drive higher conversion rates from ad to purchase.

In the United States, Visa and MasterCard did a good job helping to facilitate payment acceptance online in the early days of e-commerce. Today, as more commerce takes place on smartphones, there is still room for significant improvement in mobile payments in terms of ease of use, seamless integration, and leveraging data, which creates opportunity for innovation by mobile wallets and online platforms like PayPal, Apple Pay, and Android Pay. However these newer mobile wallets are likely to partner with the incumbent banks and networks of Visa and MasterCard, rather than displace them.

In China, the online payments landscape is different, as the incumbent government-sponsored debit card leader, China UnionPay, was slow to navigate the shift of commerce to online payments, but is currently the leader by volume. Therefore, we have seen the three largest internet platforms (Alibaba, Tencent, and Baidu) build their own payment networks and control the online payments market. Alipay, given its integration with Alibaba’s e-commerce marketplace, leads the group with close to $800 billion of annual payment volume, and is expanding towards a more fully featured online bank including person-to-person payments, bill pay, lending, and asset management. The competition remains aggressive from Tencent and Baidu, as both are spending to acquire new wallet users given the strategic value of controlling the payment layer as more transactions move online. Exhibit 7 displays payment volumes from traditional networks and newer online wallets in the United States and China.

**Outlook**

Over the coming years, there is little doubt that smartphone adoption and ubiquitous connectivity will enable a continued shift of more global economic activity to online platforms. We will be watching as incumbents evolve their business models to integrate new mobile capabilities, and as startups and the major internet platforms innovate and disrupt existing markets. In this section we conclude with some of our forecasts which inform our investment process. Key factors that could alter our current forecasts include:
• Smartphone ASPs for low-end devices, and feature improvements for high-end devices.
• Availability and cost of wireless and Wi-Fi connectivity.
• Availability of venture capital for startup innovation, which impacts investment by leading internet platforms.
• Regulatory environment for internet innovation versus protection of legacy industry.
• Data and infrastructure security, and personal information privacy.
• Mobile payment adoption as an enabling technology of online commerce and advertising.

**US e-commerce penetration will be structurally lower than that of China.** We expect US e-commerce will continue to take share of overall retail sales, but with structurally lower long-term penetration than that of China e-commerce. Strong national US offline brands and retailers are investing aggressively into an “omni-commerce” vision, to integrate online and mobile technologies into the shopping experience. The scale of the offline incumbents and investment in physical retail is likely to limit the rate and pace of pure play e-commerce share gains.

**China’s e-commerce market will likely become more fragmented.** The e-commerce market in China will likely see increased fragmentation, and while Alibaba will continue to growth and remain the leading player, its 75%+ share can be eroded. The asset-light marketplace model of Alibaba gave it the ability to scale quickly as an early mover in the space, similar to how eBay was the early leader in US e-commerce. However, asset-heavy e-commerce models that hold and control inventory and distribution can offer better consumer experiences and more quality control, despite being less financially productive and slower-to-scale models. This is why Amazon has been so successful in the United States, and we believe Alibaba will cede share to competitors with better customer experience like JD.com, and to startups that carve out and focus on e-commerce niches, like Vipshop in the discount flash sale space.

**Search growth will remain strong for longer.** Many investors have questioned the importance of search in a mobile world where consumers spend more time in apps. We believe search leaders Google and Baidu will remain more important, with stronger growth rates, for longer than the market believes. In the highly fragmented internet, beyond the handful of vertical-specific apps that consumers use on a regular basis, search remains in control of the window to the web. We would even argue that with 30% of mobile search queries being related to location, the leading search players become even more important in mobile given their mapping assets. And to provide a sense of how fragmented the web is and how vital search is to serve consumers where apps cannot, 20% of search queries each day have never been searched for before. Only search can serve this long tail of the highly fragmented economy and web. Mobile devices make the internet easily accessible in our pockets, and therefore we will only continue to search more frequently, not less.

**Mobile monetization can surprise to the upside.** Internet companies in both the United States and China have faced initial challenges in monetizing mobile traffic relative to historical desktop monetization, with mobile often tracking 20%–40% below desktop levels. We believe that mobile enables unique characteristics of location awareness, identity awareness, and always-on connectivity, which are likely to push mobile monetization above desktop rates over the medium term. Delivering the right ad, to the right person, at the right time is getting easier, which should make mobile advertising more effective and valuable than desktop advertising, despite initial challenges in the transition.

**Mobile payments and banking are expected to be disruptive in China, versus complementary in the United States.** The US payment networks and banks have been successful in evolving their products for online use, and therefore most new mobile wallet competitors are choosing to partner with the traditional payments ecosystem. However in China, we expect mobile wallets from Alipay, Tencent, and Baidu to continue to disrupt the offline payment and cash methods, and push deeper into other online financial products including lending, investing, money transfer, and credit scoring. Chinese consumers and small businesses are underserved by the traditional banking industry, and therefore we expect the major internet players to leverage their platforms to fill the consumer’s need.

**China to lead the O2O market globally.** The large Chinese internet platforms, as well as venture-backed startups, are investing aggressively to gain first-mover advantage across multiple O2O categories. Given this capital being deployed and fragmented offline incumbents, we expect China to lead the world in many O2O categories such as online ordering for food, transportation, movie tickets, and local services. A key question to monitor is if or when we could start to see some of the US internet leaders step up O2O investment, instead of leaving more of the market development to startups.
Notes
1 Source: Euromonitor International
2 Source: IAB
3 Source: Credit Suisse
4 Source: Google earnings call

Important Information
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