China’s E-Commerce Market: The Logistics Challenges

Distribution gains importance as online markets heat up in China
A population of more than 1.3 billion people. A middle class 200 million strong and growing. More than 450 million Internet users, including 150 million online shoppers. As China’s remarkable growth continues, the conditions for the e-commerce market are only improving. But logistics, a key element in providing customer service, remains a major challenge for e-commerce players big and small. If the logistics market falters, will it bring down the e-commerce industry? Not if the e-commerce players confront the issue—and quickly.

In barely five years, China’s e-commerce market—which makes up almost 90 percent of its overall business-to-consumer (B2C) market—has become a formidable force. E-commerce has expanded at a compound annual growth rate (CAGR) of 90 percent over the past five years, rising from roughly $750 million in 2004 to more than $32 billion in 2009. By 2014, we estimate the Chinese e-commerce market will be worth $175 billion (see figure 1 on page 2).

However, success in this rapidly growing market is not a given. In particular, logistics will be a challenge as e-commerce players attempt to reach more customers over wider geographic regions while improving the quality of their offerings. The growth of domestic express delivery—most directly tied to e-commerce—is lagging the exponential growth of e-commerce in China, raising concerns about how well logistics players can handle ever-increasing volumes.

In fact, managing logistics may be the main differentiator as the online market heats up—along with other B2C segments, such as TV and mail-order. We researched the e-commerce industry to determine how major players are tackling the logistics issue. This paper highlights our findings.

**Trends in e-Commerce**

Amid the rapid growth in China’s e-commerce market, several trends are shaping the near-term landscape.

**Rise in access channels.** An estimated 150 million people shop online in China today, according to Shanghai-based iResearch. That number is expected to rise significantly as more Chinese consumers purchase Internet-enabled cell phones—today more than half of China’s Internet users already use their mobile phones for Internet access. On Taobao (an eBay-like site that is the country’s leader in e-commerce), more than 200,000 sellers

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1. All monetary amounts in this paper are U.S. dollars; growth rates are compound annual growth rates (CAGR).
have opened “cell phone stores,” which could increase sales even more (see sidebar: Who? What? Why?...China and the Online (R)evolution).

Increase in B2C business. Currently, China’s e-commerce market is dominated by the consumer-to-consumer (C2C) industry, accounting for 85 percent of the market in 2009 and driven primarily by Taobao’s early successes. However, B2C is gaining momentum and is expected to reach 40 percent of the market by 2015. As C2C consumers gain more e-commerce experience, they are moving to B2C sites searching for higher-quality
products and services (see sidebar: B2C On Your Laptop on page 6). And as C2C sellers become more established, they are launching their own B2C sites.

More geographic spread. The geographic growth in online shopping is becoming a vital issue for the e-commerce industry. The consumer market is currently concentrated in regions, with the top 10 cities (in terms of Taobao usage) all located on the coast (see figure 2). Shanghai is the largest market with $2.6 billion in total online spending from May 2009 to May 2010, accounting for 8.7 percent of total spending.

However, eight of the top 10 fastest-growing cities on Taobao in terms of total online spending are inland tier-2 and -3 cities (see figure 3 on page 4). This trend is expected to continue as wealth in the inland cities increases. As overall geographic coverage expands with deeper penetration into tier-3 and -4 cities, the ability to offer reliable and consistent services and delivery will be among the biggest challenges—and a major source of competitive advantage.

Fixing Logistics: Three Proven Strategies

The relative scarcity of high-quality logistics providers in China often means problems for e-commerce firms: late deliveries, damaged and lost parcels, negative attitudes from delivery people, slow cash-on-delivery (COD) processes, poor return procedures, and no special services such as installation or “product try-on.” Such last-mile delivery and customer interface issues inevitably affect the creditability and brand image of e-commerce firms.

Furthermore, e-commerce leaders in certain industries—including baby goods, consumer electronics, telecommunications, computer products and furniture—are struggling with logistics

Who? What? Why?...China and the Online (R)evolution

E-commerce has experienced exponential growth in China since the mid 2000s, when it was just a blip on the retail radar screen. What factors have spurred this online evolution?

More online shoppers. China has 460 million Internet users—after 86 million new users connected in 2009. Yet this number is still low when considering Internet penetration rates; China’s current Internet penetration rate is 32 percent, compared to the United States’ 77 percent. But China’s Internet users are spending more time online, averaging 20 hours per week. The ratio of online users over age 30 rose 2.4 percent in 2009 to 41 percent. According to Shanghai-based iResearch, almost 145 million people shop online in China, most between age 18 and 35, with women shopping slightly more than men.

More purchasing power. China’s economic affluence has increased significantly in the past decade. Personal disposal income per capita reached almost $1,500 in 2008 and is expected to rise by 11 percent to more than $2,800 in 2014. The percentage of households earning more than $10,000 per year is also rising, from 3 percent in 2008 to an estimated 8 percent in 2014.

More online security. With the arrival of Web 2.0, e-commerce sites in China have begun tracking and publishing credibility records of online sellers, reducing the risk of fraud. This has helped e-commerce overcome perhaps its biggest psychological barrier. Reliable payment methods, such as cash-on-delivery and Alipay, are also making online transactions more convenient and trustworthy. While “seeing is believing” still rings true for most Chinese consumers, these payment methods allow customers to see the products before paying for them, thus increasing the number of transactions.
suppliers’ inability to handle large or irregularly shaped shipments at lower costs. Few domestic express companies are equipped to handle freight, and freight companies cannot provide door-to-door service.

Faced with these and other challenges, we recommend three time-tested and proven strategies for e-commerce firms to address their logistics needs.

Build your own networks. Many large e-commerce players are choosing to build their own internal logistics networks, incorporating their own teams into the business model to ensure quality. Most of these companies established the in-house capabilities at their inception, but some only did so after suffering serious logistics bottlenecks from relying on third-party logistics centers and delivery teams. The improved quality and resource control have proved worthwhile, both in increased speed of delivery and improved customer experience.

For example, 360buy.com posted a 300 percent growth rate in the past five years after logistics bottlenecks forced the company to establish its own express delivery operation, headquartered in Shanghai, in January 2009. With its own network, this consumer electronics, computer and telecom company now provides same- or next-day deliveries from four distribution centers in Beijing, Shanghai, Guangzhou and Chengdu. The company plans to invest more than $100 million to build a massive new distribution center in Beijing in 2012, which is said to include a 300,000 square-meter parcel with a 150,000 square-meter warehouse and the capacity to process 100,000 orders per day—what would amount to a $3 billion business.

However, building a logistics arm is not for every company—only for those with large volumes and efficiencies, especially in last-mile delivery, which often accounts for half of total logistics costs. For example, with fewer than 500 deliveries per day in a city, deploying a company-owned delivery team could cost up to 15 RMB ($2.28) per parcel, eating away at profits. This cost could drop to less than 2 RMB ($0.30) per

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**Figure 3**

Online spending in tier-2 and -3 cities is growing fast

<table>
<thead>
<tr>
<th>City</th>
<th>2009 Spending</th>
<th>2010 Spending</th>
<th>Growth (%)</th>
</tr>
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<tbody>
<tr>
<td>Macau</td>
<td>10.52</td>
<td>10.48</td>
<td>10.52</td>
</tr>
<tr>
<td>Luohe</td>
<td>9.30</td>
<td>7.74</td>
<td>7.71</td>
</tr>
<tr>
<td>Ezhou</td>
<td>7.03</td>
<td>6.22</td>
<td>6.07</td>
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<tr>
<td>Simao</td>
<td>5.33</td>
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<td>Guigang</td>
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</tbody>
</table>

Sources: Taobao, A.T. Kearney analysis

*X times growth refers to the number of times the city has grown; for example, Macau grew 10.52 times from 2009 to 2010.*
parcel with more than 100,000 deliveries per day in a city (see figure 4). As such, it is doubtful that even the largest e-commerce players can fully address the demand internally and profitably, considering the wide geographic spread of the market. Leading companies understand if and where to deploy their own logistics capabilities.

Outsource to third-party providers. Given the lack of scale and capabilities, most e-commerce companies still outsource their delivery services to third-party express companies. Most express delivery providers in China can be grouped into two types (see figure 5):

**Large networks offering basic services.** Firms in this group typically have large network coverage but can provide only basic delivery services. Most rely on franchised models to expand rapidly (only 20 to 40 percent are self-owned) and compete mostly on speed and price. Network coverage is wide, especially with back-up from the state postal service for remote areas.

These large networks do not offer more complex services such as scheduled returns, exchanges or collect-on-delivery (COD). Given their franchised or sub-contracted models, there are also inherent risks. For example, most players offer a one- or two-week COD repayment cycle, exposing e-commerce companies to a significant amount of risk, especially when many of the logistics and express players are franchised or heavily subcontracted. Ensuring the integrity and viability of the entity collecting the cash is a crucial element to consider.

An exception is Shunfeng Express. The largest private express company in China with more than 2,000 fully-owned locations and reliable and fast service, Shunfeng maintains a premium position in the market. But its standardized services are not

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**Figure 4**

Last mile (intra-city) delivery economics

![Graph showing the relationship between total parcels delivered and average cost per parcel in RMB, with data points for owned and outsourced services.](source: A.T. Kearney analysis)

**Figure 5**

The competitive landscape for domestic B2C parcel delivery providers

![Diagram showing the competitive landscape with service levels and coverage and density categories, highlighting different companies and their market positions.](source: A.T. Kearney analysis)
These are exciting times for China’s business-to-consumer (B2C) market, thanks largely to the growth of e-commerce. How are the different market segments faring?

**E-commerce.** Almost 90 percent of the B2C market in China is e-commerce, which has experienced 90 percent annual growth since 2006. This rapid growth is expected to continue, with the e-commerce market possibly reaching $32 billion by 2014. More than 80 percent of e-commerce takes place in online marketplaces, of which Taobao (similar to eBay), is the largest. Taobao customers combined account for nearly 3 million transactions a day—including purchasing 969 pieces of clothing, 203 pairs of shoes and 164 accessories every minute.

Online stores are expected to be a big share of the e-commerce market in the future, even as adoption rates vary across industries. The largest e-commerce segments are home supplies, apparel, publications (including books and DVDs), and consumer electronics (see figure).

**TV shopping.** TV-based shopping is the second-largest B2C segment reaching about $2.5 billion in 2009, with four players (Acorn, HappiGo, OC and Seven Stars) comprising roughly 60 percent of the market. Yet TV shopping is still relatively new to China consumers—accounting for only 0.2 percent of nationwide retail sales compared with 10 percent in the United States and Japan and 5 percent in South Korea. We expect TV shopping to reach 5 percent of Chinese retail sales in the next decade.

**Mail order.** Unlike European and North American markets, mail order remains a small market in China, with a few pure-play mail-order companies and some top global firms (such as Bertelsmann) that entered in the 1990s and eventually exited. Existing players tend to combine online shopping with mail-order, with the latter serving mostly as a marketing tool.

**Figure:** The largest e-commerce segments in China are housewares, apparel, publications and consumer electronics.

Note: Figures for 2010-2014 are estimates.

Sources: iResearch, Analysis International, A.T. Kearney analysis
for everyone. China Post’s EMS, with more than 20,000 locations, has the largest network, but speed and reliability continue to be issues.

**Smaller networks offering more complex services.** These typically fully owned companies have relatively smaller network coverage—some, such as Topname, only compete regionally—and their focus on regional services enables full-fledged value-added services such as warehousing, COD and customized delivery. These companies are selective about where they expand their networks, selecting cities only if there is enough volume, and they focus mainly on the B2C market.

International companies such as FedEx and TNT also fall into this category. They have more limited networks than the domestic players but offer a broader range of services and are more reliable and consistent. Other providers, such as Kerry EAS, also serve the B2C market, with strengths in warehouse pick-and-pack operations rather than delivery.

There is a clear gap in the market—as no player offers the breadth of services needed at a competitive price across a broad network demanded by e-commerce companies. However, many logistics companies are investing heavily to broaden their capabilities to fill this gap, particularly in line haul and last-mile deliveries (see figure 6). Warehouse pick-and-pack, which could represent 40 percent of total logistics cost of a parcel (and is a manual operation today), is another opportunity. When sizing up a potential third-party logistics provider, it is important not only to look at their current capabilities but also at their growth and investment plans.

**Form partnerships or acquire existing firms.** A third approach is to invest in existing logistics companies or form partnerships with them. Alibaba, the e-commerce giant that owns Taobao, invested $4.5 million in Star Express and Best Logistics and acquired a 70 percent stake in HTO; Star Express and HTO are the major Chinese express delivery companies. However, given Taobao’s size (3 million shipments a day) no logistics player or acquisition alone will meet its speed and service requirements. As such, Alibaba plans to invest $4.6 billion over the next five years to build a network of warehouses across the nation.

**Logistics: The Key to E-success**

The rapid growth of e-commerce and the subsequent logistics challenges means both e-commerce companies and logistics providers have an opportunity to move quickly to address their problems.

**Figure 6**

Logistics companies are investing heavily to broaden their capabilities

**Cost structure per parcel (illustrative)**

- **Collection**: 6%
- **Sorting**: 4%
- **Line haul**: 37%
- **Last-mile delivery**: 53%

*Source: A.T. Kearney analysis*
The solutions are unlikely to come from e-commerce in-house logistics, for market growth will soon make these unsustainable. The real solutions are more likely to be found in strategic partnerships between e-commerce firms and third-party logistics providers. Indeed, within a few years, we expect to see a transformation in China’s e-commerce logistics landscape, where e-commerce plus logistics providers will equal market success.

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