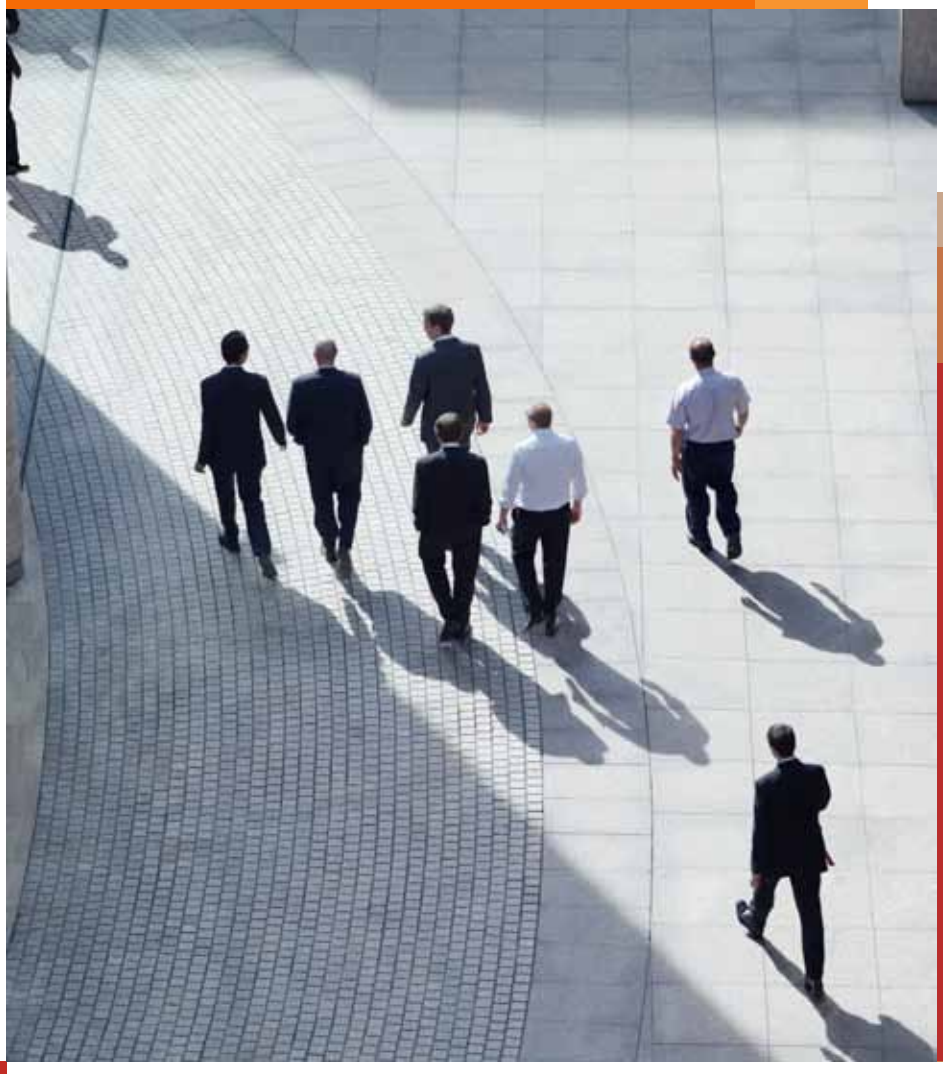
Evolution of e-commerce in India

Creating the bricks behind the clicks

ASSOCHAM INDIA



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Foreword

Recent years have seen a remarkable transformation in the way India shops and trades. E-commerce has taken the world of retail by storm and captivated the imagination of an entire generation of entrepreneurs, with e-commerce ventures with various business and commercial models. The explosive growth in the last few years has already catapulted the biggest firms among these ventures past the billion-dollar territory. The sector has grown three times in four years to nearly 12.6 billion USD in 2013. Various industry estimates project that the sector will further growth five to seven times over the next four to five years.

Online retail, while today representing a small fraction of the e-commerce space is one of the fastest growing segments. It is also the most challenging in fulfilling its fundamental proposition of transcending physical boundaries to deliver a variety of products to the customer's doorstep. Logistics and infrastructure in e-retailing becomes the very backbone of the fulfilment network and the basis on which stringent service level expectations are set and met, and customer mind-space among competing alternatives is won. In India, these are arguably the weakest links, and therefore the enhanced need for greater attention and management bandwidth to these critical functions.

We estimate that a large proportion of investment in e-commerce retail will flow into logistics and infrastructure. In the absence of an incumbent ecosystem, e-commerce providers are beginning to build these functions from scratch. This will also spawn infrastructural investments into allied sectors such as warehousing, air cargo, road and rail-based transport transportation. As delivery reach and fulfilment networks become more entrenched and increasingly complex, opportunities will emerge for logistics service providers and 3PL players. All of these trends point to a bright future for talented entrepreneurs, operational managers as well as greater employment opportunities for blue-collared workers.

Manish R Sharma
Logistics Leader, PwC India

Acknowledgement

On behalf of ASSOCHAM I would like to thank the team at PwC for preparing a comprehensive and neutral white paper *'Evolution of e-commerce in India: Creating the bricks behind the clicks'*. The e-commerce industry is one of the fastest growing sectors in the country today, spurring first generation entrepreneurs, large scale manufacturing by SMEs, jobs and most importantly impacting the infrastructure growth of the country.

We hope that this paper will be read by all the relevant stakeholders of the industry and that they will benefit from its extensive research.

D S Rawat
ASSOCHAM

Evolution of e-commerce in India

The rapid growth of e-commerce in India

Over the last two decades, rising internet and mobile phone penetration has changed the way we communicate and do business. E-commerce is relatively a novel concept. It is, at present, heavily leaning on the internet and mobile phone revolution to fundamentally alter the way businesses reach their customers.

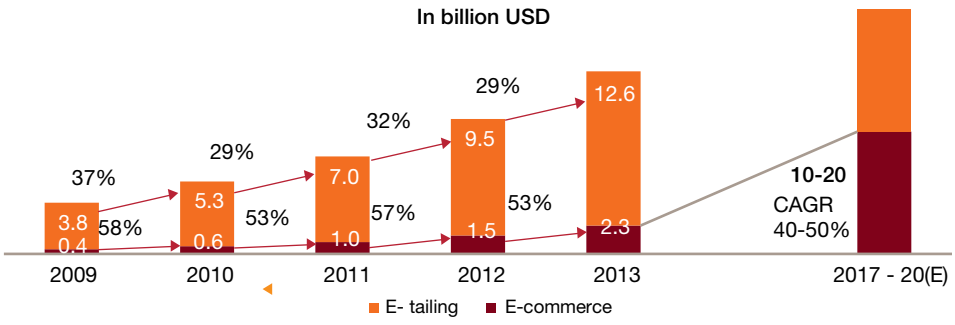
While in countries such as the US and China, e-commerce has taken significant strides to achieve sales of over 150 billion USD in revenue, the industry in India is, still at its infancy. However over the past few years, the sector has grown by almost 35% CAGR from 3.8 billion USD in 2009 to an estimated 12.6 billion USD in 2013[1].

Industry studies by IAMA[2] I indicate that online travel dominates the e-commerce industry with an estimated 70% of the market share. However, e-retail in both its forms; online retail and market place, has become the fastest-growing segment, increasing its share from 10% in 2009 to an estimated 18% in 2013[3]. Calculations based on industry benchmarks estimate that the number of parcel check-outs in e-commerce portals exceeded 100 million in 2013. However, this share represents a miniscule proportion (less than 1%) of India's total retail market, but is poised for continued growth in the coming years. If this robust growth continues over the next few years, the size of the e-retail industry is poised to be 10 to 20 billion USD by 2017-2020. This growth is expected to be led by increased consumer-led purchases in durables and electronics, apparels and accessories, besides traditional products such as books and audio-visuals.

E-commerce logistics models: A radical shift from regular logistics

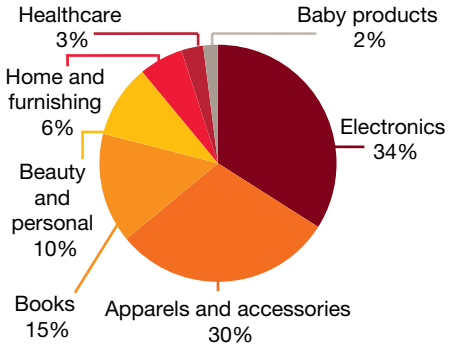
The strong emergence of e-commerce will place an enormous pressure on the supporting logistics functions. The proposition of e-commerce to the customer is in offering an almost infinite variety of choices spread over an enormous geographical area. Firms cannot compete solely based on sheer volumes in today's ever-evolving, information symmetric and globalised world of e-commerce. Instead, the realm of competition has shifted to delivering to ever-shortening delivery timeliness, both consistently and predictably. Negligible or zero delivery prices, doorstep delivery,

Growth in e-commerce and e-tailing



Source: Crsil, IAMAI, PwC analysis and Industry experts

Commodity distribution in e-tailing



Source: Internet and Mobile Association of India research

1. *Source: Internet and Mobile Association of India research report*
2. *Source: IAMAI report titled'e-Commerce Rhetoric, Reality and Opportunity'*
3. *Source: PwC analysis*

traceability solutions and convenient reverse logistics have become the most important elements of differentiation for providers.

While the current logistics challenges relating to manufacturing and distribution of consumer products and organised retail are well-known, the demands of e-commerce raise the associated complexities to a different level. E-commerce retailers are well-aware of these challenges and are cognizant of the need to invest in capital and operational assets.

Reaching the customer: Going beyond the traditional definition

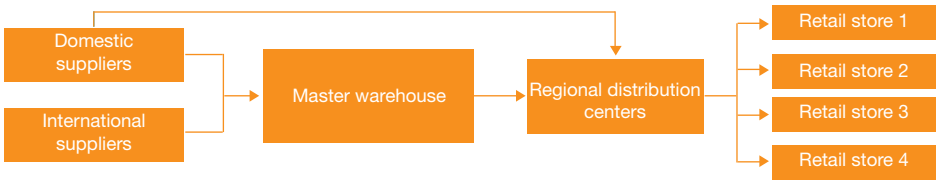
The essence of e-retailing is in its ability to transcend physical boundaries and reach customers in a manner different from the traditional brick-and- mortar stores, to their very doorstep. However, the base of the e-retailing model is technology and logistical solutions that facilitates the customer acquisition and the final 'reach' process. E-commerce further brings to the table vagaries in customer orders accompanied with difficult scenarios such as free delivery, order rescheduling, cancellation, returns and cash-on-delivery.

Additionally, an expected minimised turn-around-time (TAT) which will potentially lead to word-of-mouth publicity, feedback and customer retention to the e-portal or website. An information network which shares updated information with respect to inventory status, demand schedules and forecasts, shipment schedules and promotion plans among all the stakeholders of the supply chain will form the backbone of an e-retailer.

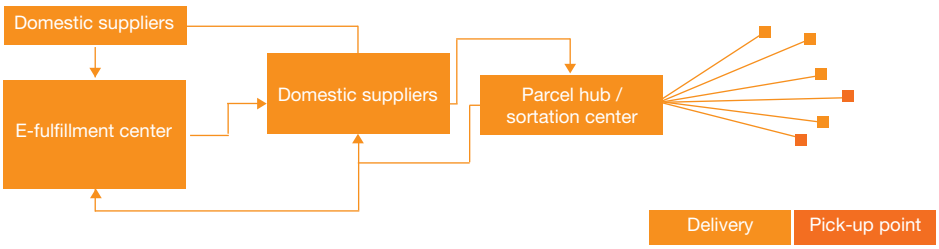
Need for different management of physical infrastructure

The business model of the conventional retailers and e-commerce providers differ significantly. The conventional infrastructure model relies on increasing depth and breadth of coverage through several inventory nodes, warehouses and stocking points connected by based on various other factors ranging from production cycles, nature and variety of the SKUs to even local taxation laws. The conventional order point occurs at retail stores and static customer fronts located at the end of the chain, and inventory requirements are predicted empirically based on several months or years of past data. In fact, competing sales channels may also duplicate infrastructure, an indication of the typical sub-ordination of the logistics function within the overall sales and distribution process.

Conventional retail model



E-tail model



On the other hand, e-commerce providers operating either through inventory-led or marketplace models, are entering an entirely different paradigm of operations, where management of the supply chain is core to the business of creating more business. With real-time demand and tight delivery expectations, the supply chain needs to be built from the customer-end, with the fundamental difference being the proliferation of delivery points and the need to move large number of orders of small parcels (one or two goods) across the length and breadth of the country at an affordable cost.

In India, foreign direct investment (FDI) within the business-to-consumer (B2C) e-commerce segment is not allowed where as foreign investment in the business-to-business (B2B) e-commerce segment is allowed. This means that inventory led e-retailing model cannot attract FDI whereas market-place based e-retailing model can still attract FDI. Most e-retailers have started practicing the market-place business model with suppliers storing on their behalf and delivering as per the requirement and thus falling under the B2B category.

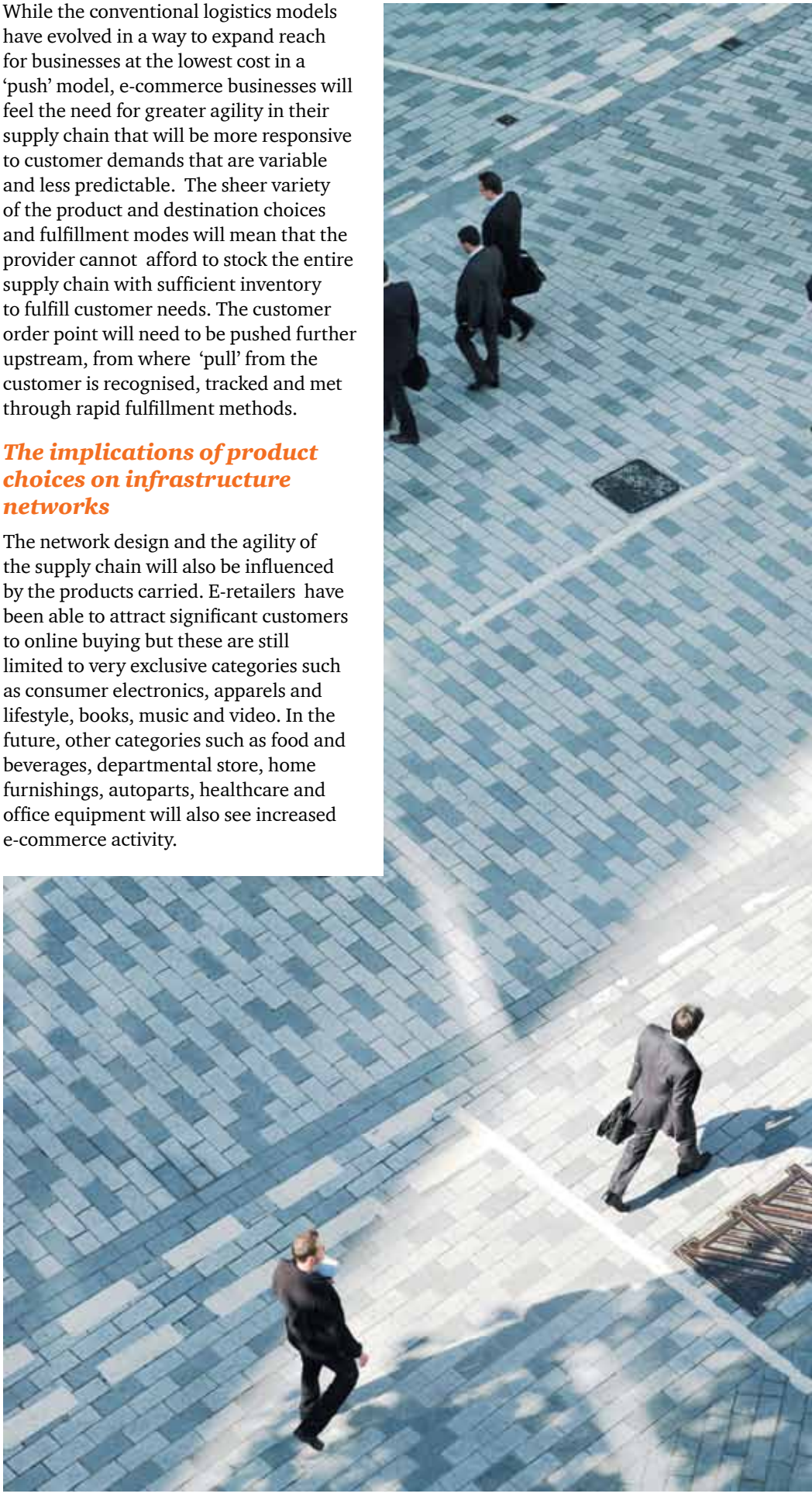
The need to build infrastructure for increased agility

The key to success in e-commerce is an efficient last-mile network to ensure time-bound delivery while maintaining agility in the logistics chain. The fundamental SKU at the delivery point is a 'parcel', of varying shapes and sizes, while the pin-codes of the operation become the determinant of the last-mile network model. The up-stream infrastructure will then need to be built as a layer over this last-mile network with strategic location choices of fulfillment centers proximal to delivery modes. The operations will need to be tightly controlled in such a way that the inventory stocks are converted to parcels and pushed down the chain efficiently, as well as that the fulfillment centers are replenished. The balance between inventory and supply chain costs is therefore a dynamic decision to be taken, considering both cost and service level considerations.

While the conventional logistics models have evolved in a way to expand reach for businesses at the lowest cost in a 'push' model, e-commerce businesses will feel the need for greater agility in their supply chain that will be more responsive to customer demands that are variable and less predictable. The sheer variety of the product and destination choices and fulfillment modes will mean that the provider cannot afford to stock the entire supply chain with sufficient inventory to fulfill customer needs. The customer order point will need to be pushed further upstream, from where 'pull' from the customer is recognised, tracked and met through rapid fulfillment methods.

The implications of product choices on infrastructure networks

The network design and the agility of the supply chain will also be influenced by the products carried. E-retailers have been able to attract significant customers to online buying but these are still limited to very exclusive categories such as consumer electronics, apparels and lifestyle, books, music and video. In the future, other categories such as food and beverages, departmental store, home furnishings, autoparts, healthcare and office equipment will also see increased e-commerce activity.



It is important to note that each product category will have its own customised logistics requirements which can alter the balance between inventory and supply chain costs.

Within the apparel and lifestyle category, for example, localised suppliers or warehouses can be used to good effect in tune with the buying patterns and ensuring seasonal inventory replenishment. For books, music and video, a large centralised inventory for a large region may be better suited. For consumer electronics and durables, which have lesser SKU proliferation, higher product value and higher security and handling needs, a JIT and direct fulfillment model may need to be put in place. For hot and cold merchandising, localised sourcing and continuous availability of temperature controlled infrastructure throughout the supply chain becomes the critical need. The challenge is to ensure that the supply chain needs of the specific product segments are married with customer propositions that offer better customer value than traditional retail models.

Logistics infrastructure to be the weakest link in the Indian e-commerce story

Logistics in developing economies such as India may act as the biggest barrier to the growth of the e-commerce industry. Till date, logistics models developed in India target the metropolitan and the Tier-1 cities where there is a mix of affluent and middle classes and the internet penetration is adequate. In India, about 90% of the goods being ordered online are moved by air, which increases the delivery costs for the e-retailers.

Most e-retailers were initially dependent on third party delivery firms. However as the market evolves and customer expectations increase, city or geography centric service levels are becoming the need of the hour. Moreover, issues specific to e-retailing such as the problems associated with fake addresses, cash-on-delivery and higher expected return rates have made e-retailers consider setting up their captive capital intensive logistic businesses. For instance, Flipkart has set up several regional warehouses and is constantly increasing the supplier base across the country to achieve low transportation cost by ensuring delivery from the nearest supplier or regional warehouse. Flipkart is growing its logistics arm E-Kart whereas Amazon India is building capacities with its logistic arm Amazon Logistics.

While establishing the captive logistics infrastructure was a consequence of need for better service delivery by actively controlling the logistics chain, it has pushed up the delivery costs. According to industry benchmarks, the delivery cost in the captive logistics models are 10 to 20% expensive than the 3PLs whose expertise lies in quick delivery at an affordable cost. Further, the logistics set-up and requirements in developing countries are also dependent on the purchasing behaviour of the customers

Chief characteristics of the e-commerce market which impact the logistics models

- **'Cash-on-delivery':** India has been a vibrant cash economy where the consumer's purchasing behaviour involves an initial overall inspection of the product from different perspectives and paying subsequently. Further, customers in India do not extend much trust on the transit facilities for the delivery of the products. This has resulted in 'cash-on -delivery' (COD) as a preferred payment option of majority of the Indian consumers buying online.
- Consumers in India expect the return process to be seamless and convenient. However, with an expectation of return of the items purchased online, online shoppers have made available the option to return the purchased goods at the behest of the retailer. Retailers have considered this option of return to develop trust and confidence which results in seamless subsequent purchases and positive word-of-mouth support.
- **Free and quick home delivery** is another characteristic of the e-commerce industry in India. E-retailers offer free delivery of the products within a promised timeline. Though this may be unsustainable in the long run but e-retailers have to offer the same convenience of free and quick shipping to compete with other retailers.

These factors will call for strengthening the logistics infrastructure and increased number of failing which the e-retailers will have to start up or strengthening their own logistics counterparts. Higher delivery costs can result in withdrawal of free delivery by e-retailers on the back of high delivery costs and complex business models threatening already wafer-thin business margins.

Infrastructure will demand a large proportion of investment in e-commerce

Active management of logistics, infrastructure and service levels is core to the e-commerce business in any market. E-retailers need to have a hybrid model of their own captive logistics arm which takes care of their specific business model needs and strictly monitored service level agreements with 3PLs to rationalise the delivery costs.

The future competitors and winners in the e-retailing space will be the ones which will use both bricks and clicks and not bricks or clicks alone.

This is evident from the evolving logistics and storage strategy of Amazon in the US. Amazon has changed its logistics network from the 'sell all, carry few', model to the 'sell all, carry more' model and increased the number of warehouses across the US. This eventually proved beneficial for Amazon as the increased number of warehouses led to both better reach and range for the suppliers and customers which eventually resulted in faster service delivery and increased customer retention. Amazon is further investing 14 billion USD in increasing its warehouses' base by 50 in the US.

Strictly monitored service level agreements with 3PLs which have developed the expertise and skills to handle the vagaries of the customers in the e-commerce space has proven beneficial for e-retailers as they are able to outsource the skills best suited to the 3PLs. A successful example in terms of usage of SLAs with 3PLs is of eBay which has partnered with couriers and allied service providers for the logistics with closely controlled SLAs.

Flipkart (inventory-led model)

Flipkart has started as a price comparison online portal with an initial investment of 8,000 USD and later turned into an e-retailing giant which recently ticked the 1 billion USD in gross merchandise volume. It started with a consignment model where goods were procured on demand and turned into inventory e-retailer supported by registered suppliers since it provided better control on the logistics chain.

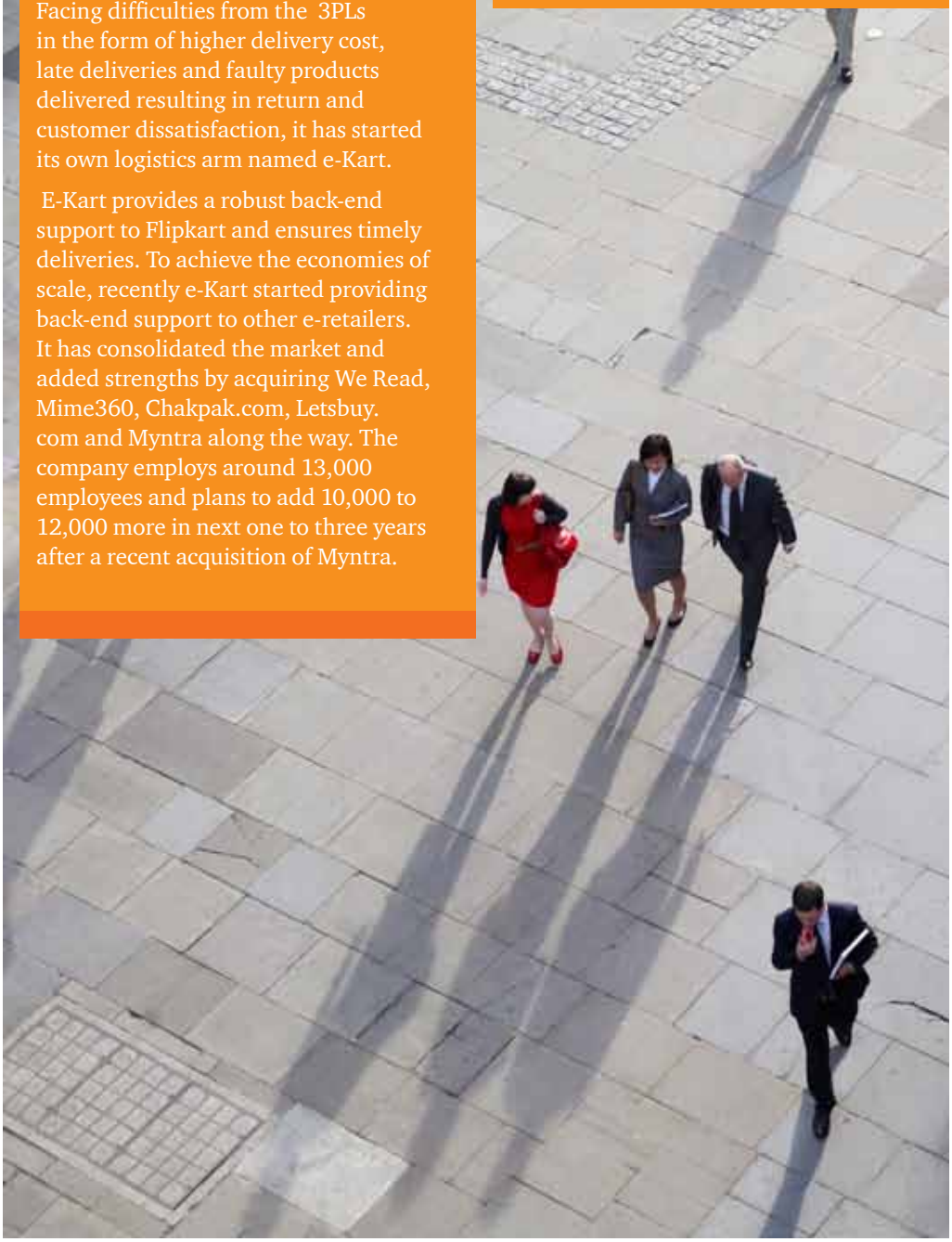
Flipkart established warehouses in Delhi, Bangalore, Mumbai and Kolkata managing a fine balance between inventory and cost of delivering goods. Facing difficulties from the 3PLs in the form of higher delivery cost, late deliveries and faulty products delivered resulting in return and customer dissatisfaction, it has started its own logistics arm named e-Kart.

E-Kart provides a robust back-end support to Flipkart and ensures timely deliveries. To achieve the economies of scale, recently e-Kart started providing back-end support to other e-retailers. It has consolidated the market and added strengths by acquiring We Read, Mime360, Chakpak.com, Letsbuy.com and Myntra along the way. The company employs around 13,000 employees and plans to add 10,000 to 12,000 more in next one to three years after a recent acquisition of Myntra.

Amazon India (marketplace model)

Amazon started practicing the market place model by launching its site in early 2013 in India. It started registering electronics goods sellers and ended FY 2013 offering nearly 15 million products.

Amazon India has two fulfillment centers in Mumbai and Bangalore and plans to start five new fulfillment centres across the country. Known for its strong last-mile delivery network, Amazon India has set up a logistics arm named Amazon Logistics and started offering same day delivery.



The above requirement will only increase in magnitude when operating in India. The exponential growth in e-retailing will also attract 3PL majors like DHL, FedEx, UPS and Gati to play a crucial role in the last-mile delivery. DTDC has already started offering customised services to e-retailers under the name Dotzot. To cater to this potential explosive growth in the absence of a ready-built industry structure, significant investments will need to flow into creating back bone logistics infrastructure from e-commerce providers or 3PLs. Industry interactions indicate that market place operators typically invest 10 to 20% of their revenue to build self-owned infrastructure.

Investments in infrastructure and operating models of the future

The growth in e-retailing will spawn several investments in logistics infrastructure including large fulfillment centers and warehouses, downstream parcel and sortation centers, focus will be on equipping these nodes with state-of-the-art technology and modern warehousing practices promoting visibility across the logistics chain. The kind of infrastructure will not only be bare bone shells but will focus on specific handling requirements of the commodities transacted.

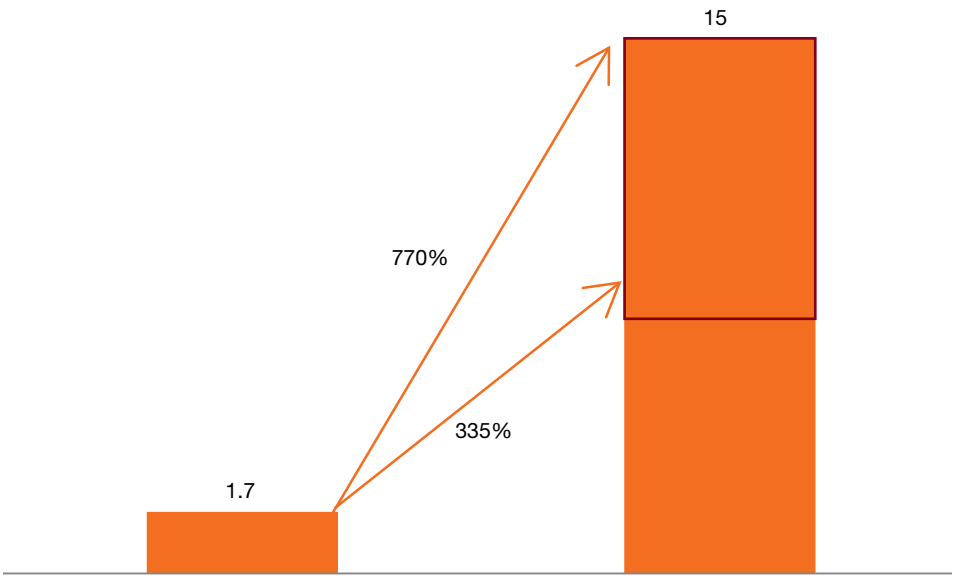
As times becomes the essence of delivery, quicker modes of transportation and reduced transit times will increasingly become the key demands. Currently, India operates at a very low level of air cargo penetration characterised by only a few airports equipped to handle large volumes of express delivery parcels. As the race to the market moves to the Tier 2 and Tier 3 cities a day may not be far off when there is an increasing demand of expanding air cargo connectivity to smaller towns through various merry-go round aircrafts using charter airplanes and general aviation. Airport operators including the Airport Authority of India(AAI) needs to carefully evaluate this particular category of air cargo on par with other categories of airport infrastructure development.

Similarly, for certain product categories, railways movement can also be explored. The Indian railways is exploring various schemes like parcel trains and increasing the competitiveness of parcel loads in passenger trains. For certain commodities on the short haul routes, railway can become a predictable and low-cost transport choice. Therefore the whole transportation paradigm of the future may evolve around a judicious mix of rail, road and air transport modes.

Economic potential due to the rise of e-commerce logistics

The rising growth and complexity of e-commerce categories and delivery networks is expected to have a large spill-over to infrastructure and logistics investments which will include more warehouses, sortation and delivery centers and employment. Based on current productivity trends and growth estimates, it can be estimated that over the next three to four years, there will be an addition of 7.5 to15 million sq ft[4] in the form of additional central fulfillment centers alone with an average size of 80,000 to 1,50,000 sq ft each. This, by itself represents an additional 6 to 12% of all the space available in the form of organised warehousing in India and almost 25 to 50% of all incremental addition of consumption-driven warehousing space[5] in the same period. To enhance the reach further to match the growth in warehousing, additional sortation and delivery centers will also be critical. Such additional centers with each measuring around 10,000 to 20,000 sq ft will be added. Industry estimates[6] reveal that the total spend on warehousing and sortation centers could be as high as 3 to 6% of top-line revenues, which represents an cumulative spend of over 450 to 900 million USD of spend in warehousing till 2017-2020. The industry is expected to spend an additional 500 to 1000 million USD in the same period on logistics functions, leading to a cumulative spend of 950 to 1900 million USD till 2017-2020.

Warehousing requirements



Source: Industry experts and PwC analysis

in million sq.ft

4. PwC analysis

5. Based on estimates from Knight Frank Logistics and Warehousing Report, 2013-14

6. Technopak report on E-tailing in India: Unlocking the Potential

It is also estimated that currently over 25,000 people[7] are employed in e-retailing warehousing and logistics. Even with efficiency improvements in individual performance and productivity (IPPs) in the delivery networks, it is estimated that there will be an additional employment of close to 75,000 people in these two functions alone[8] by 2017-2020, representing an increase in employment by almost three times.

Trends to watch out for

- Evolution of logistics landscape in the country will be a very important factor in determining the course for the e-retailing industry. Logistics evolution will be necessary to realise the potential robust growth.
- Despite a huge potential, long-term profitability of the e-retailing industry in the country is still under question. After so many years of operations, all the major e-retailers are yet to start making profits. In the wake of wafer-thin margins and sub-optimal infrastructure resulting in higher delivery cost, the long-term profitability still seems a distant possibility.
- FDI in the inventory-led retail will also be an important factor in shaping up the future of the industry. In the current scenario, global e-retailing giants like Rakuten and Alibaba are eyeing an entry into Indian e-retail market. Amazon has recently announced a 2 billion USD investment operating on marketplace model. FDI allowance could be a vital factor in attracting significant investments resulting in better infrastructure and robust supply chains.
- Evolution of taxation policies in the country will in a large way effect the way industries practice warehousing. With uniformity in taxation laws across the country, e-retailers are expected to move closer to consumption centers with an aim to address the duplicities in the logistics chain by removing the overlaps in form of delivery and sortation centers which are traditionally closer to the consumption centers. It will also result in uninterrupted access to the e-retailing market. In a recent case, a south Indian state had sent a tax notice to e-retailers resulting in all e-retailers withdrawing services in the particular state because of differing tax policies.
- The evolution of the existing logistics providers and more players entering the 3PL domain will result in realisation of the huge potential of the e-retailing industry. Major 3PL players (such as FedEx, DHL, UPS, Gati, etc) will have to gear up to the increasing demands of the e-retailing industry thereby helping in rationalisation of delivery costs and provide much needed balance between using captive logistics network and 3PLs. To take the opportunity and help the e-retailing industry to overcome infrastructural bottlenecks, resurrection of the Indian Postal Service can be a game changer. Collaborating the strong last-mile capability with technological upgradation will ease the dependence on the other modes of transportation.

After taking a holistic view of the industry trends, e-commerce is poised for an exciting period of exploding growth in a period of three to five years. This is expected to lead to substantial investments in supporting infrastructure and innovative and game changing business models.

7. Technopak report on E-tailing in India: Unlocking the Potential
8. PwC analysis

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ASSOCHAM acknowledged as Knowledge Chamber of India has emerged as a forceful, pro-active, effective and forward looking institution playing its role as acatalyst between the government and industry. ASSOCHAM established in 1920 and has been successful in influencing the government in shaping India's economic, trade, fiscal and social policies which will be of benefit to the trade and industry.

ASSOCHAM renders its service to over 4,00,000 members which includes multinational companies, India's top corporates, medium and small scale units and associations representing the interest of more than 400 chambers and trade associations from all over India encompassing all sectors.

ASSOCHAM has over 100 national committees covering the entire gamut of economic activities in India. It has been especially acknowledged as a significant voice of Indian industry in the fields of Corporate Social Responsibility, Environment & Safety, e-Commerce, Corporate Governance, Information Technology, Agriculture, Nanotechnology, Biotechnology, Defence, Cyber Security, Entertainment and Media, Pharmaceuticals, Telecom, Banking and Finance, Company Law, Corporate Finance, Economic and International Affairs, Tourism, Civil Aviation, Infrastructure, Energy Power, Education, Legal Reforms, Real Estate, Rural Development etc. The Chamber has its international offices in China, Sharjah, Moscow, UK and USA. ASSOCHAM has also signed MoU partnership with Business Chambers in more than 75 countries.

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