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Future of e-Commerce:
Uncovering Innovation

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Foreword

Hemant Joshi

The listing of Alibaba on the New York Stock Exchange at the valuation of $231 billion has brought global focus on the e-commerce market. The e-commerce industry continues to evolve and experience high growth in both developed and developing markets. With the emergence of non-banking players in the payments industry and innovative vertical specific startups, the Indian e-commerce market is expanding at a rapid pace. The digital commerce market in India has grown steadily from $4.4 billion in 2010 to $13.6 billion in 2014 while the global market is forecasted to reach $1.5 trillion in 2014. Increasing mobile and internet penetration, m-commerce sales, advanced shipping and payment options, exciting discounts, and the push into new international markets by e-businesses are the major drivers of this unprecedented growth.

The M&A deals (Softbank's $627 million deal with Snapdeal, Flipkart acquired Myntra for $370 million, Ola Cabs acquired TaxiForSure for $200 million) and sky-rocket valuation of these e-commerce giants rising in last one year shows that the sector is heating up. The question would be whether these valuations are sustainable despite showing no signs of profitability. The global players like Amazon and Alibaba have deep pockets to rely on their parent companies for continuous funding support. The homegrown players would definitely need different metrics to preserve the investor confidence build in the sector.

The big retailers are increasingly focusing on their digital strategies in order to gain the obvious benefits of online platforms – wider reach, always on, personalization to name a few. The e-commerce companies are concentrating their efforts on increasing the penetration of their mobile apps for higher growth. Big players in this space claim to have more than 50% of their revenue coming from mobile apps.

The supply chain and logistics in e-commerce business are highly complex to manage in a vast country like India where infrastructure is not well-developed to reach every remote and rural area. The taxation policies for the e-businesses are not well-defined depending on different business models and transaction types. The complexity has further amplified with transactions happening across borders for online selling of goods and services. Moreover, e-businesses do not take sufficient steps to deploy a security solution, which is hindering the consumer from transacting online.

Newer technologies that could significantly bring a paradigm shift in the online businesses are analytics, autonomous vehicles, social commerce, and 3D printing. Companies have started to invest in data analytics to gain real-time insights into customer buying behavior and thus offer personalized user experience. The e-commerce companies are building communities on social media networks to better understand customer needs and to drive effective marketing strategies.

The future of e-commerce is bright and growth will come from mobile platforms, personalization, social media analytics, omni-channel service, and sharing economy business models.

The e-commerce industry is an exciting place with the interplay of social, mobility, analytics, cloud (SMAC), digital, 3D and, virtualization. The current high valuations, in spite of losses, perhaps, are indicative of the future potential.

Message from ASSOCHAM

Increasing internet and mobile penetration, growing acceptability of online payments and favorable demographics has provided the e-commerce sector in India the unique opportunity to fundamentally alter the way companies connect with their customers. Due to this digital revolution, the e-commerce sector in India has become 4 times its size, from $3.8 billion in 2009 to $17 billion in 2014, growing at a CAGR of 37%. The sector is expected to cross the $100 billion mark within the next five years, contributing over 4% to India's GDP.

Online travel, one of the key drivers of India's e-commerce market, accounts for nearly 71% of e-commerce business in India. Though the online retail market in India, currently at $1.6 billion, is a miniscule fraction of India's overall $500 billion retail industry; retail e-commerce has recorded a three-fold growth since 2011, predominantly driven by million dollar investments by domestic and foreign investors.

2014 known as the 'BILLION DOLLAR YEAR', was critical for the burgeoning e-commerce industry with many companies attracting private equity investments, which catapulted them to billion dollar valuations within less than a decade of operations. These valuations further drew interest not only from the conventional VC and PE firms but also Hedge Funds, Sovereign Funds and even private capital from industry leaders.

On the other hand, mobile commerce (m-commerce) is growing rapidly as a stable and secure supplement to the e-commerce industry. Shopping online through smart phones is proving to be a game changer, and industry leaders believe that m-commerce could contribute up to 70% of their total revenues.

The Government's ambitious 'Digital India' project that aims to offer a one-stop shop for Government services will further bolster the sector by introducing internet and broadband to remote corners of the country and increase trade. This initiative through a targeted investment of nearly $17 billion will transform India into a connected economy and also attract investment in electronics manufacturing and create millions of jobs.

It is therefore important to overcome challenges in Financing, Infrastructure, Logistics and focus on building Customer Loyalty to usher in the next wave of sustainable growth in e-commerce. Dedicated e-commerce laws are required to address issues in the sector's legal and regulatory framework and Banks must play a leading role as 'Facilitators' by offering cost effective cash management solutions, secure payment gateways and other relevant banking services.

I am confident that ASSOCHAM's 4th National Conclave on E-Commerce India will be instrumental in addressing challenges in garnering investments into this sunrise sector and ensuring its increasing contribution to India's growth story.

Rana Kapoor
President, ASSOCHAM
Managing Director & CEO,
YES Bank

Message from ASSOCHAM

India is at the cusp of an e-commerce revolution. Although e-commerce has been making rounds in the country for over a decade, it is in the recent years that the appropriate ecosystem has started to fall in place. Factors like accelerating internet access, staggering penetration of mobile phones and robust investment have driven the growth of this industry and if current projections are anything to go by, India is on route to becoming the world's fastest growing e-commerce market.

ASSOCHAM has been doing a remarkable job in promoting e-commerce in India through various measures and events, including the e-commerce India Conclave. After massive success of first three editions of the conclave, it is really a pleasure to know that ASSOCHAM is organizing the 4th National Conclave e-commerce India in New Delhi. I wish them all success in their noble endeavors and I am sure they will keep up the good work in the field.

On behalf of ASSOCHAM I would like to thank the team at Deloitte for preparing a comprehensive white paper on e-commerce in India. The e-commerce industry is one of the fastest growing sectors in the country today, spurring first generation entrepreneurs, large scale manufacturing by SMEs, and most importantly impacting the infrastructure growth of the country. The recent Spectrum Auctions, roll-out of 3G and 4G broadband services and the National Broadband Plan will certainly usher new business opportunities for e-commerce in the country.

We are happy to note that the leading e-commerce companies are participating in the 4th National Conclave: e-COMMERCE INDIA to deliberate upon the emerging opportunities in this area.

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

Bikky Khosla
Chairman, ASSOCHAM
National Council on
e-Commerce & CEO,
tradeindia.com

D. S. RAWAT
Secretary General,
ASSOCHAM

Overview of e-Commerce

Over the last decade, the Internet has changed the way people buy and sell goods and services. Online retail or e-commerce is transforming the shopping experience of customers. The sector has seen unprecedented growth especially in the last two years. The adoption of technology is enabling the e-commerce sector to be more reachable and efficient. Devices like smartphones, tablets and technologies like 3G, 4G, Wi-Fi and high speed broadband is helping to increase the number of online customers. Banks and other players in e-commerce ecosystem are providing a secured online platform to pay effortlessly via payments gateways.

The homegrown players have shown tremendous growth and attracted some big investors. The entry of global biggies like Amazon and Alibaba has taken the competition to a new level. E-tailers are differentiating themselves by providing innovative service offerings like one-day delivery, 30-day replacement warranty, cash on delivery (CoD), cashback offers, mobile wallets, etc. The supply chain has improved significantly and e-tailers are even leveraging on the services of Indian Post for greater reach across the country. In 2014, Indian Post collected ₹ 2.8 billion through CoD option of payment. [1]

India slipped from 14th to 20th rank among the top 30 developing countries in 2014 Global Retail Development Index (GRDI) that looks at measures for retail investments worldwide. [2] Chile and China are leading in the GRDI rankings. The sector is still in its growth stage in India and has enormous potential to offer in the coming years. The government's most prestigious Digital India project could take the sector to new heights.

**Figure 1: B2C E-commerce Segments**
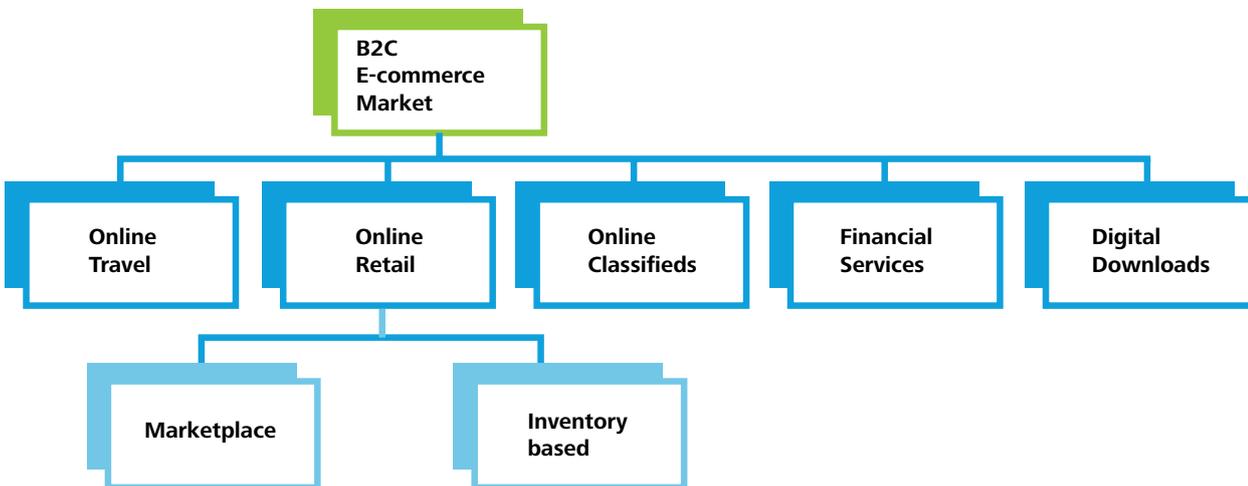
Market Size

The digital commerce market in India has grown steadily from $4.4 billion in 2010 to $13.6 billion in 2014. As per industry estimates, the digital commerce market in India is expected to reach $16 billion by the end of 2015 on the back of growing Internet population and increased online shoppers. Online travel accounts for nearly 61% of e-commerce business while e-tailing contributes about 29%. [3] Visa India spend data showed 53% growth in the number of e-commerce transactions in 2014. [4]

Figure 2: Online Retail in India - Market Size ($ billion)

2010	2011	2012	2013	2014	2015f
4.4	5.9	7.9	8.9	13.6	16
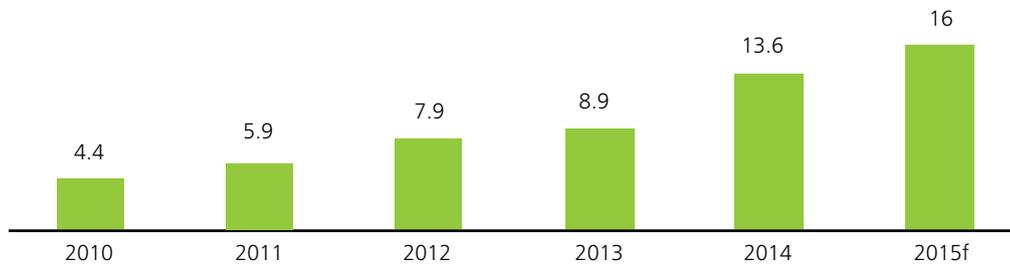
Source: IAMAI, Deloitte Analysis

Similarly, there is an almost similar growth trend of e-commerce in the global market. The eMarketer report had predicted that the business-to-consumer (B2C) e-commerce sales worldwide will reach $1.5 trillion in 2014, increasing nearly 20% over 2013. [5] As the e-Commerce players from the US, Europe and Japan are seeing slower growth in home markets, they are increasingly looking to enter developing economies of India, Brazil and China which have forecasted growth rates of more than 20% over coming years. Most popular e-commerce categories are non-consumable durables and entertainment-related products.

Players

Several players have established their place in e-commerce market just in few years. With the rising demand of digital commerce, innovative startups are emerging in all segments. Home grown players are trying to compete head-on with global players who have the advantage of scale, technology and deep pockets. According to Deloitte's study "Global Powers of Retailing 2015," Amazon continues to dominate the world of e-Commerce with net product sales of $61 billion in 2013. Flipkart is the largest e-tailer in India with a valuation of about $11 billion and trying to raise funds to compete with global biggies like Amazon and Alibaba. Snapdeal is another homegrown player with a valuation of $5 billion. [6] In October, Snapdeal raised $627 million from the Japanese telecom and media group Softbank, who also has a 37% stake in China's e-commerce leader Alibaba. Other emerging players are – BookMyShow with almost 90% of the online entertainment ticketing market; Paytm with almost 20 million users is leading provider of virtual wallet.

The global e-commerce market is more advanced in terms of technology, awareness, and payment systems. Amazon and Alibaba are two big players when it comes to global e-commerce market. Alibaba accounts for more than 80% of all online purchases in China and has a global presence. It manages the marketplace and has commission based business model with no products of its own. Amazon, on the other hand, started as online book store and expanded the business as marketplace and also sells its own consumer electronics such as Kindle eBook readers, Fire Tablets, and Fire TV. Only two pure play web-only e-tailers (Amazon and JD) of the top 50 e-tailers were large enough to rank among top 250 retailers.

Figure 3: Pure-play e-retailers command top two slots

#	Company	2013 e-commerce Retail Revenue	FY13 growth	Top 250 ranking
1	Amazon.com, U.S.	$ 60,903mn	▲ 17.7%	🌐 15
2	JD.com, INC., China	$ 10,826mn	▲ 66.2%	🌐 92
3	Wal-mart Stores Inc., U.S.	$ 10,000mnᵉ	▲ 29.9%	🌐 1
4	Apple Inc., U.S.	$ 9,000mnᵉ	▲ n/a	🌐 46
5	Otto (GmBH & co. KG), Germany	$ 8,188mnᵉ	▲ 7.0%	🌐 70
6	Tesco PLC, UK	$ 5,250mnᵉ	▲ 11.0%	🌐 5
7	Liberty Interactive Corporation, U.S.	$ 4,884mn	▲ 10.9%	🌐 99
8	Casino, France	$ 3,952mn	▲ 19.4%	🌐 13
9	Sunning Commerce Group Co., Ltd., China	$ 3,536mn	▲ 43.9%	🌐 59
10	Macy's Inc., U.S.	$ 3,100mn	▲ 37.8%	🌐 34

$: 2013 e-commerce Retail Revenue in USD millions   🌐 Top 250 ranking   ▲ FY13 e-commerce growth rate

Source: Deloitte Global Powers of Retailing 2015 Study

Business Models

E-commerce market in India has started to become crowded and complex with several players fighting for a fair share of customers' mind and wallet. As the competition in the e-commerce heats up, the companies are using multiple business models in order to get customer attention including:

- Inventory model e.g. Shopper Stop, Croma
- Social networks e.g. TripAdvisor
- Aggregator Model e.g. Ola Cabs
- e-Marketplace e.g. Flipkart, Snapdeal
- Transaction broker e.g. IRCTC
- Click and Collect service e.g. Amazon

To survive and sustain operations in the competitive market, companies are also taking advantage of one or multiple revenue models including:

- Advertising revenue model e,g. Yahoo.com
- Subscription revenue model e.g. Flintobox
- Transaction fee model e.g. eBay
- Sales revenue model e.g. Amazon
- Affiliate revenue model e.g. CouponDunia

Enabling Technologies

The greater adoption of Internet and smartphones is the biggest driver of e-commerce in India. Internet penetration is rapidly increasing with around 300 million users in 2014. The smartphone is steadily growing and consists of 35% of the overall mobile phones market in the country. [7] The success rate of some of the technologies is directly connected to the success of e-commerce.

Cloud: Most of the e-tailers are depending on cloud technology for its flexibility, scalability, availability, mobility, and efficiency. Cloud communications can be an important enabler in helping e-commerce companies in ensuring personalized consumer engagement throughout the purchase cycle and also in executing effective and near real-time marketing campaigns.

Mobile Applications: More than 235 million people in India access internet through mobile devices. This is the primary reason for e-tailers to focus their efforts on mobile app penetration across the country. The mobile applications are helping to reach more customers located even in remote and rural areas. E-commerce companies have been able to bridge the service gap considerably by sending service updates and other communication via their mobile app, e-mail, and SMS. The revenue coming from mobile app is on the rise e.g. 50% for Flipkart while 70% for Quikr. [8] Customers can get alerts, view product catalogues, purchase and pay with a simple mobile application offering a compelling user experience. Also, from mobile usage, the e-tailers get valuable customer information which can be used for analytics to improve their services and sales.

Digital Advertisements: The digital advertisement industry is growing rapidly as there is a growth in digital communication devices around the world. The increase in smartphones, tablets is enabling advertisers to reach a wider audience. According to analysts, the Indian online ad market will grow year-on-year at 30% to reach ₹ 35.75 billion by March 2015. [9] The digital advertisements are flexible and can be adapted for any kind of device like Television, laptop, tablet, or smartphone. The two-way interactive capability and the ability to customize the ad for target audience also make digital advertisements more effective.

Search Engine Optimization (SEO): With thousands of products in the digital catalogues, the e-commerce players find it easy to be visible with the help of SEO technology. SEO can help the websites to be more specific, measurable, realistic, and time efficient and hence can significantly boost profits. E-tailers should optimize the critical aspects of their online store and earn rich snippet displays in search results on various search engines to drive more targeted, motivated buyers to their products.

Challenges

Though the e-commerce sector is growing exponentially in India, it faces several challenges like customer mindset, high cash on delivery (CoD) based orders, reachability, poor courier services and other policy-related issues.

High competition: There are several players doing the same business in almost the same way. With intense competition the profitability is decreasing due to aggressive pricing strategies, heavy discounts and offers, free delivery, high commissions to affiliates and vendors during sale period to name a few. Online retailers lost around ₹ 10 billion because of heavy discounts to attract customers.[10]

Poor logistic & supply chains: E-commerce companies live on the reach and the ability to stock more items than physical stores as these are their biggest differentiators. With this benefit also comes the challenge of robust supply chains and logistics networks, which are not comparable and developed to global standards in India. The courier companies do not have nationwide delivery networks and also do not have the skills of handling commercial value goods. They also do not have the skills for handling CoD, recheck return parcels, and other complexities related to digital sale. This is forcing several e-tailers to establish their own delivery network across the country and might have to engage with multiple shipping methods using FedEx or DHL for the last mile delivery.

Payments: E-commerce companies have to offer a wide variety of payment options including CoD, credit and debit card, internet banking, among others. 60-70% of the payments are made using the CoD option in India as customers fear to share information online and do not trust the website for secure payments. Moreover, the return percentage of orders in CoD is much higher compared to online payments. To counter these fears, e-tailers have started to provide facility of paying with Card on Delivery. For example, Amazon's delivery person brings point-of-sale device to accept payment at customer premise.

" "m" is increasingly replacing the "e" in E-commerce, as more Indians get on to their smartphones to buy stuff online. From a technology perspective, on the small screen, discovery of the right products as well as payments present 2 key challenges as well as opportunities. Whoever can solve these challenges faster and in a sustainable manner, can challenge the status quo in e-commerce markets."

**Ambrish Bajaj**

Head of Mobile, Jabong

Trends

Time for stronger Mergers & Acquisitions: The year 2014 saw some high profile mergers and acquisition in the Indian digital commerce sector. The biggest one being the Flipkart and Myntra merger, which was ₹ 20 billion deal helping reduce completion in the market. The Ibibo Group, a subsidiary of the South African mass media company Naspers, acquired Pilani Soft Labs, which runs bus ticketing website redBus.in for about $135 million. Ola Cabs acquired the rival TaxiForSure for $200 million to eliminate competition. These deals have further bolstered investor confidence in the sector. M&A trends are expected to follow in the coming years as the industry consolidates backed by high valuations and scaling up operations.

**Living on valuations**: The staggering growth of digital commerce is attracting investors from within and outside the country. The homegrown players Flipkart and Snapdeal are taking every necessary step to stay ahead in the race. Online players remain optimistic of the profitability of their ventures in the long term and continue to invest heavily to build capabilities and gain bigger share of the market.

As per analysts, the ₹ 200 billion investments in e-commerce in 2014 were driven by sky-high valuations. [11] The valuation of Flipkart sharply increased from $1.9 billion at the start of 2014 to reach $11 billion by the end of the year. [12] It raised $1.9 billion in three rounds of fund raising despite incurring losses of around ₹ 4 billion. Similarly, Snapdeal saw its valuation increase from $350 million to $3 billion after raising funds of $850 million. [13] Snapdeal also posted losses of ₹ 2.64 billion in FY14. [14] The valuation can play a major role for an e-commerce player irrespective of the profitability of the company.

Figure 4: Annual results FY14 ($ million)
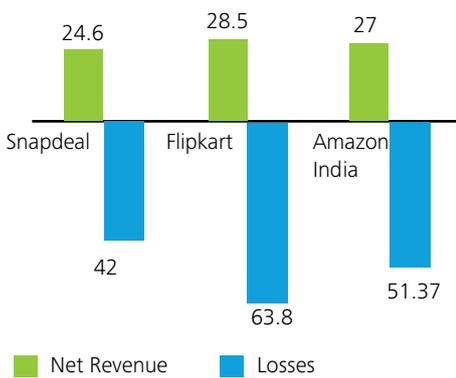
Figure 5: Valuations & funds raised in 2014 ($ million)
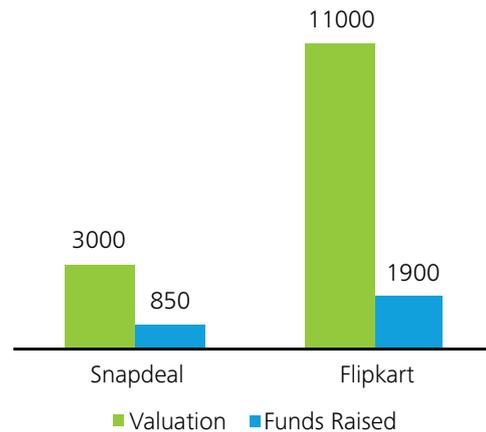
Source: Various Industry News

Vertical specific e-tailers on the rise: Vertical specific e-tailers find it motivating to focus on a niche product or service as they can differentiate their services from mainstream e-commerce players. The value proposition of these ventures helps them raise funds easily and also helps in customer acquisition as they generally try to solve the challenges faced by people daily. The critical aspect of these industry specific ventures is offering a compelling and user-friendly experience, mostly driven by convenience, richness of information, and cost effectiveness.

Big Basket, an online grocery store, is marketing to deliver groceries at home without the hassles of traffic and saving time to do better things. Ola Cabs, a cab service provider, differentiates its offerings by providing a great user experience to people looking for car rentals and cab service.

There are many innovative startups coming in the service industry trying to organize the unorganized sectors in India. For example, UrbanClap, an online platform for customers to scout for the best professionals in the service industry—architects, wedding photographers, yoga teachers, educational counselors or lawyers. Similarly, innovative startups like Timesaverz provide online platform for home services – plumbing, repair, electrician, or cleaning to the urban people who are ready to pay a price for convenience. [15] According to Deloitte prediction, Massive Open Online Courses (MOOCs) could be successful for test preparation in Freemium model, where the basic content would be free while advanced content and tutoring would be a paid service. [16] It was predicted that MOOCs could represent about 10% of all the courses taken globally in tertiary and enterprise continuing education by 2020. The eVisits have proven in developed world, and as the necessary infrastructure is deployed in the developing world, they are likely to offer affordable primary medical and diag-nostic care to very large populations that do not have access today. [17] Deloitte had predicted that in 2014, there will be 100 million eVisits globally, potentially saving over $5 billion when compared to the cost of in-person doctor visits.

Figure 6: Vertical specific e-commerce players in India (Illustrative)

Travel	Real Estate	Fashion	Furniture	Health	Education
• MakemyTrip • Goibibo • Yatra • IRCTC • Cleartrip	• MagicBricks • CommonFloor • 99acres • Housing	• Jabong • Myntra • YepMe • Zovi • FashionandYou	• FabFurninsh • Pepperfry • Urban Ladder • Zansaar	• Healthkart • LensKart • Portea Medical	• EduKart • Meritnation • Edureka • Toppr • embibe

Figure 7: Vertical specific global e-commerce players (Illustrative)

Travel	Real Estate	Fashion	Furniture	Health	Education
• Expedia • Booking • Airbnb	• Zoopla • Property Wire • Realtor	• ASOS • BOOHOO • Stylebop	• IKEA • Home24 • Stellar	• Global Health Store • VitaminGlobal	• Pearson • McGraw Hill • Alison

Retailers are going online: The big retailers are trying to complement the traditional retailing with digital commerce by tying up with big e-tailers. The partnership between Snapdeal & Croma or Amazon & Future Group owned Big Bazaar is no more a partnership between two retailers. It has extended to a vendor and technology partners offering technology and logistics services. Reliance retail is planning to launch its e-commerce website seeking to attract people from online retailers. Shoppers Stop is revamping its digital platform, which currently contributes 1% of the revenue. [18] The extended reach of the online channel is the primary reason for offline retailers to launch e-commerce offerings.

"The worldwide spread of internet accessibility via desktops and smartphones is driving an expansion of ecommerce that is continuously changing the retailing landscape. It is also changing the way India trades and shops.

A large number of SMBs are now selling online, the channel contributing a significant portion of revenue for these businesses. Snapdeal has 100,000 plus SMBs doing business on its platform currently, thousands of these sell goods worth more than $250,000 annually only on the Snapdeal platform. A growing number of small start-up retailers also find internet as an easy & inexpensive way to build brands and sell products. Online marketplaces for these SMBs are driving the digital commerce growth in India. To stay relevant in the market, ecommerce players need to focus on not only expanding sellers and selection on their platforms but also ensuring the existing sellers have adequate capacity to meet the consumer demand. We at Snapdeal thru our 'Capital Assist' program provide financial assistance to SMBs doing business with us; these SMBs have been largely left out of the traditional banking channel.

On the consumer front, lack of organized offline retail beyond metros coupled with proliferation of cheap smartphones and falling data charges are driving the online commerce in India. While ecommerce is still growing in urban markets, the exponential growth is being driven by the Tier 2 & 3 cities. At Snapdeal, 70% of our consumers are from outside metros primarily driven by Mobile commerce; 71% of Snapdeal sales are from these markets.

Most ecommerce players are working towards seamlessly integrating all the consumer touch points – mobile phones, desktops and tablets. The need to be present across multiple channels is blurring the lines between online and offline retail. Businesses are continuously using a combination of both online and offline channels to engage with customers and provide a wholesome shopping experience. Omni-Commerce is coming together of offline and online retail providing the customers the best of both worlds. With Omni channel, a customer would be able to buy online and collect / return offline. Recent trends have also led to the emergence of a new set of players who are setting up mobile only marketplaces and tapping social media to grow customer base.

Emerging new digital product categories are also significantly driving the ecommerce growth and primarily contributing to the increased frequency of transactions online. Currently there are 75 million mobile recharges daily in India, majority of these would move online in not so distant future increasing the online share of a customer's wallet.

Periodically purchased low involvement products like consumables, magazines, can also be subscribed through websites and delivered to customers regularly. It will help in acquiring customers over long term, predicting demand and streamlining inventory accordingly.

While India's retail trade is dominated by cash transactions, growth in online payments continues to outpace growth in other payment methods. Number of users transacting online is expected to reach 100 million by the end of this year; this will lead to more innovation in the payments space resulting in simpler and incrementally secure payment options. Among other benefits, Snapdeal provides its customers easy finance options for high value transactions.

To provide customers an outstanding shopping experience and outrun competition, large ecommerce players are focusing on building the last mile delivery network or hyper local delivery networks. Multiple offline/online retailers are partnering with local delivery services to help them deliver their goods at required destinations quickly.

To summarize, unique changes to the existing business model which can get more sellers & customers to transact online, integrated and improved multiple touch points, identifying categories which drive frequency of usage coupled with innovative payments and quick delivery will be the key to success in the Indian ecommerce domain. It is critical for all players to build an ecosystem encompassing all the mentioned areas for digital commerce rather than just monolithic platforms. We, at Snapdeal, are constantly innovating our existing business model and bringing about such changes which will help us in not only improving the seller and customer experience but also stay competitive in this dynamic industry."

Kunal Bahl
Co-founder & CEO, Snapdeal

Innovative and Emerging Business Models

India's e-commerce market is set to hit $76 billion by 2021 from $13.6 billion in 2014, according to e-Tailing India. [19] However, as business model changes have become more frequent and delivery more complex, increasing innovation in promotion, pricing, sale, and even distribution channels will be seen going forward. Entrepreneurial ecosystem is evolving with innovative startups capturing the mass market of India and taking opportunity in solving some of the big challenges faced by the country. For example, BigBasket & MyGrahak for delivering groceries at home, Portea Medical with home medical care, Housing.com for realty based challenges.

Riding high on commissions

There has been rise in startups that primarily depend on commissions to earn their revenue. For example, Freecharge's primary revenue source is commissions from telecom operators which ranges from 2% (for incumbent operators) to as high as 5% (for new & small operators). [20] IRCTC, which accounts for almost 40% of India's online travel, makes 60% of its profit from commissions on ticket sale. [21]

In such business models, the e-commerce provider offers the online platform to the merchants to gain better visibility and reach in the market. At the same time, they provide the market intelligence and data to better target their products and services compared to competition. This helps in solidifying the relationship with merchants and also to increase their user base. For example, Foodpanda have helped restaurants develop their online footprint in the market. [22]

E-commerce sites such as CouponDunia have also started to gain commission from brands on redemption of their free coupons offered by the site. The affiliate websites of price comparison, cash-back offers, discount coupons, etc. which are estimated to account for 8% of e-commerce sales in India, furthermore gain significant commissions from other e-commerce sites such as Flipkart, Amazon, Snapdeal to help drive traffic to these sites. [23] These commissions could range from 5% to 50% depending on the product range, time span, and the size of players.

Incredible success of aggregator model

From a transport app service provider Uber in the west to Ola Cabs in India, the aggregator model has already written its success story. Aggregators could be market creators (e.g. eBay, Zomato, Portea Medical) providing a digital environment where buyers and sellers can meet and transact or transaction brokers (e.g. MakeMyTrip, BookMyShow) to process online transactions for consumers. Their revenue model is generally based on transaction fees for enabling or executing the transaction and value proposition is convenience, on-demand and cost effectiveness for the consumer. Although the backend of these marketplaces involves extremely complex integration to create sharing economy, but the success of these ventures depends on the simplified experience they can provide to buyers, sellers, and even the employees. Hence, simplicity is the core to these types of ventures providing the user desired products and services at the click of a button. For example, Ola Cabs punchline Book a taxi with one touch! The customer, on the other side, not only appreciates the WOW experience but is also ready to pay for the value he or she receives.

These companies are poised to disrupt the incumbents in several sectors such as transport, travel, hospitality, pharmaceutical among others. This is influencing the growth of vertical e-commerce in India with startups such as Portea Medical, Foodpanda, RedBus, Housing. com building on the customer loyalty and lifetime value by offering a compelling buying experience so that the customer moves from brick and mortar stores to online platforms.

Retailers exploring omni-channel presence

Omni-channel retailing is a relatively new concept that refers to the development of a seamless approach to the consumer experience through all available shopping channels, such as brick-and-mortar stores, smartphones, tablet computers, personal computers, direct mail, television, radio, catalog, and the likes.

With e-tailer disrupting the traditional shopping, every

retailer is looking for an online and offline presence either through omni-channel or through marketplace e-tailers. Retailers that enable more touch points and focus on delivering a smooth, information-rich integrated experience will benefit from higher share of wallet, brand equity scores and ultimately more sales. Successful cases in the west such as Macy's click-and-collect have not only proven that omni-channel strategies can increase spending per customer, but also improve customer satisfaction levels if implemented properly. Similar option of click-and-collect is extended by Amazon in India by providing physical locations to enable customers to pick up the products at time convenient to them.

According to Euromonitor, store-based retail sales will increase 10% in the next five years, while online sales are projected to increase by 40% in India. [24] The retailers in India have also started to work on their omni-channel sales strategy. For example, Future Group inked an exclusive deal with Amazon while Tata Group owned Croma partnered with Snapdeal to sell private brands online and to leverage the strengths, investments and innovations in technology and talent to reach out to wider set of consumers. While the reverse is also true with companies like FirstCry opening physical stores later to complement the online sales and experience. Just as physical stores are seeking to get into the online and mobile space, the time is also right for online stores to make their presence felt in the offline space.

Organized retailers will need to invest significantly more to compete with the e-commerce giants. According to analysts, all brick-and-mortar retailers together spent about 10% of the advertising cost of top online players.[25]

"The advent of e-commerce in India has revolutionised the approach towards running a business for best customer satisfaction and at scale. With innovation becoming the new strength, entrepreneurs are coming up with clutter-breaking ideas to create newer verticals. This has given rise to new shopping experiences to the customers. These emerging experiences are being embraced by retailers to reach the customers in newer ways. At FirstCry.com, we wanted to create an ecosystem for parents where every need of theirs will be met effortlessly as per their convenience. For such an ecosystem, we established an omni-channel business model wherein we have seamlessly integrated the web, offline and mobile platforms. For an e-commerce and retail business model as ours, the omni-channel model has turned out to be the best format in this emerging market and customer has the choice of where to buy from."

Supam Maheshwari
Founder and CEO, FirstCry

Increasing flash sale tactics

Flash sales are limited time offers of physical goods that is mailed to an address and offered in limited supply or for a short period of time. Flash sale sites, such as Groupon and LivingSocial, targeted for US customers, have enjoyed media buzz and merchant enthusiasm for years. These types of daily deals are quite popular in the western world and are now entering the Indian market. A disruptive new business model, flash sales are especially run on special days like festivals or weekends. Such daily deals are now increasingly seen on Indian e-commerce sites such as Flipkart, Snapdeal, Amazon, where the stocks are generally cleared in few minutes. For example, the Micromax subsidiary Yu's sale of Yureka smartphone saw all handsets being sold out in just 5 seconds on Amazon. [26] Such flash sales are also used for quick experimentation of new products or services.

Snapdeal Savings Day deals are available to people visiting the popular e-commerce store via desktop, mobile, or apps, just as you'd expect. On the other hand, Amazon, in a bid to promote the use of its apps, is celebrating Amazon Appiness Day, wherein deals are visible only to people who are browsing the store via one of Amazon's apps. [27]

Digital offers are still a popular promotional marketing tactic, but merchants are demanding more value from providers and seeking new ways to distinguish their offers from those of their competitors.

In response to increasing competition and growing demands from merchants, digital offer providers are also trying to differentiate their sites and mobile apps, attract new sellers and buyers by expanding into luxury goods and exclusive experiences. For example, Snapdeal acquired the luxury brand Exclusively.in to provide access to widest range of aspirational, high-end products and services.

E-commerce providers such Flipkart also provide a white-label platform for other companies such as Chinese smartphone-maker Xiaomi, which enable the scalable execution of multiple flash sales by consolidating expenses such as technology and sales. [28]

Subscription-based ventures on the rise

The e-commerce subscription service is an emerging trend that all online retailers could learn from.

Successful subscription models are based on product discovery, demo or utility. Several ventures are offering a range of products including cosmetics, healthcare, food, educational toys, etc. on monthly subscription basis as it provides regular recurring sale, predictable inventory, steady cash flow and also an option to upsell. The entrepreneurs who are behind some new companies such as recreational toys provider Flinto or healthcare provider HealthKart appreciate the flexibility the subscription model delivers, as well as the deeper customer relationships they can develop quickly. [29] The loyal customers could amplify the brand and refer the products to friends through word of mouth and social media. Suppliers can test new products by sending sample-sized products for free to targeted customers and the e-commerce platform provider does not worry about the margin as it gets the monthly subscription from its customers. [30] In case of white labeling the products, the e-commerce provider does not have to manage huge inventory and can manage the demand of its products better through subscription and it will not lose in the price war against the incumbents. Such models are beneficial for both customers and retailers. The customer gets convenience at door step, free trial of new products on regular basis. For a business, it is a blessing as they can not only predict volume and demand in advance but also reduce stock piling and wastage. Since the subscription demands upfront payment, the cash flows are safe and steady thus maintaining investor confidence.

"Digital commerce is going to impact multiple industries & business models. We can clearly see a significant transformation in sectors like consumer healthcare through digitally driven innovations like HealthKartPlus. Digital commerce will unleash a new wave of innovation in such sectors, where provision of information, transparency, choice and access would help revolutionize the way this sector has worked. Today, any citizen with a mobile phone can learn about his medicines, compare prices between multiple brands and also become aware about possible side effects and interactions - enabling him to maximize effectiveness and minimize the costs of his medication. The entire space of consumer healthcare, which has been built with inherent opacity for a consumer traditionally, will be transformed into a new model with the consumer & transparency at its center. This means a huge change in the way healthcare works in India and across the world - and the change has already started with initiatives like HealthKartPlus. In a similar way, all such areas where transparency and choice have been missing will get revolutionized by the advent of digital commerce."

Prashant Tandon

MD & Co-founder, HealthKart

Modern Enabling Technologies

The pace of technology change is very fast and individuals, businesses and Governments need to be in sync with it. Internet and smartphones are becoming an integral part of every life. Internet is no more a source of information, but has become an important tool for shopping, learning, working, communicating and even connecting with plumbers, carpenters, doctors, etc. SMBs and large enterprises are also embracing advanced technologies to stay in business. Several industries including retail are going digital and online to increase the reach and to better connect with customers. Supply chains are becoming leaner and smarter as digital platforms are helping to connect buyers and sellers directly. In the future, technology landscape for various aspects of e-commerce will be very different. The future technologies enabling e-businesses will be revolutionary and bring faster dynamics into the operations. Some of these enabling technologies for e-commerce are discussed below:

Analytics

The rise of Internet, smartphone and social media users have made analytics an integral part of any digital business. There is abundance of customer data in every business including e-commerce and analytics helps in deriving meaningful insights to help the business in growing and serving the customers better. Massive increases in the volume of data and the complexity of information from CRM, ERP, point of sales (POS) data and other systems make it difficult to have customer behavior insights without a focused analytical interface. The e-commerce industry generates data from several sources like e-tailer website, IT systems, review and ratings providers and social media sites. e-tailer need to have real-time access to information to measure return on online investments and optimize the channel mix.

There are basic analytics capabilities available with the e-commerce players like basket size analysis, average order value and conversion ratio, but with the changing scenario and increasing customer base the organizations need to deploy deeper analytics solutions that provide actionable insight around overall digital customer experience. The analytics solution should include end to end process starting from the vendor management and supply chain to customer satisfaction. It should have holistic view of the data spanning across all departments such marketing, sales, customer service, finance and the supply chain for gaining better insights and making strategic business decisions.

The availability of e-commerce applications on various mobility devices is helping to drive sales and revenue. E-tailers like Flipkart, Amazon and Jabong now get 50% of their revenues from consumers shopping on their mobile phones. Predictive analytics is helping the e-tailers to provide better solutions in real-time enabling compelling user experience even on mobile screens.

Analytics is the future of the online business but it needs a focused study of the organizational objectives and goals for effective implementation and cost savings.

Payment Gateways

When it comes to running an online business the crucial part is how the customer will pay. An e-commerce payment gateway is a service that authorizes credit card, debit card or online banking payments and processes them securely with a user's merchant account for electronic fund transfer (EFT). The world is moving from cash to digital money and thus there is a need of payment gateway for sustainable future e-commerce. The Indian e-commerce sector is heavily dependent on Cash on Delivery (CoD) mode of payment as it is the most preferred choice for Indian consumers due to lack of trust in online transactions, limited adoption of credit/debit cards, and security concerns among others. More than 50% of online transactions are done on cash on delivery method and it is available across 600 cities and towns of India. [31]
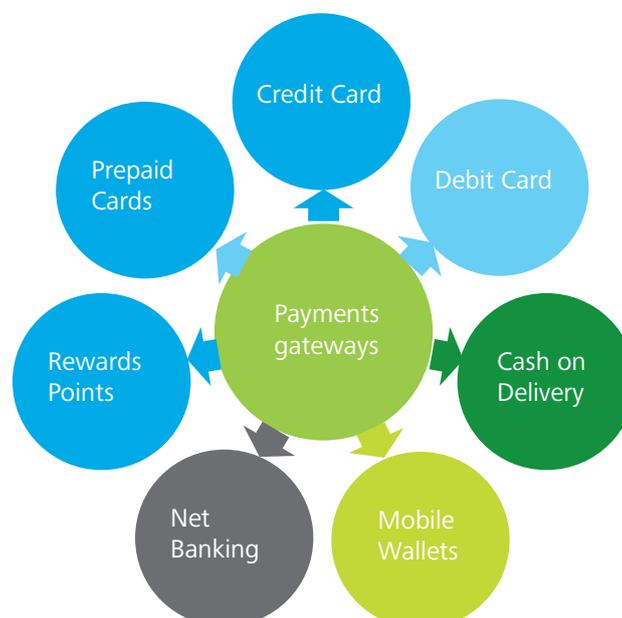
Payment gateways help the e-tailers to receive money instantly rather than waiting for the CoD payments, thus reducing chances of theft and fraud. The retailers are slowly moving towards payment gateways for improving security and dealing with other complexities which arise with financial transactions. The banks as well as the e-tailers are offering different offers like cashback and easy Easy Monthly Installment (EMI) to encourage customers for card-based payments. Startups like Paytm and FreeCharge are providing mobile wallets while almost every commercial bank is providing the option to pay online via credit or debit card. The popular EMI option which can be availed by credit card users with online payment are luring customer to pay online upfront for high-value items. The payment gateways use various security measures such One Time Password (OTP), CVV in case of debit/credit card, etc. Amongst the several payment gateways in India, some well-known payment gateways that are widely used include CCAvenue & Tech Process.

The mobile payments have also started to pick up. There are multiple ways to enable mobile devices for transactions through Near Field Communication (NFC), Quick Response (QR) code, sound wave or Bluetooth low energy (BLE) technologies. Point of Sale (POS) device is enabled to process on-premises payments using these technologies. These processes are not only easy, convenient, and fast but also quite secure.

Social Media

Social networks have started to play a significant role in the growth of the e-commerce business. The maturity of social media and its reach across masses and classes makes it a suitable platform for online sales. Social media pages provide information regarding new products in the market, user reviews and ratings of the product, recommendations, share products, etc. Every 30 seconds, e-commerce industry generates $1.2 million revenue with Facebook, Pinterest and Twitter contributing $5,483, $4,504 and $4,308 respectively. [32] In 2013, 39% of Facebook users liked brand pages to research products while 74% of consumers rely on social media for product-related guidance. [33]

Social media also helps e-tailers to build brand awareness by responding to customer queries. Seasonal sales and offers are displayed in social networks to reach maximum number of people. E-tailers have even started

to motivate customers with reward points to provide feedback on the product on social networks. Prospective customers also interact with users of the product or service on social networks before making purchase decision. According to analysts, product reviews and ratings, as well as product recommendations, were the most popular social commerce features integrated into leading e-commerce sites as of August 2013. [34] Increasingly social networks have direct links to e-commerce sites, which provide complete product description, availability status, pricing and delivery information, and access to product reviews and ratings, all of which help prospective buyers to make a purchase.

The social media provides a platform for e-tailers to engage with customers for:
• Advertisement
• Building brand awareness
• Developing a community of trusted users
• Spreading Word-of-Mouth
• Customer feedback

Autonomous Vehicles

Though autonomous vehicles are in their nascent stage, they have high potential in the future for e-commerce. The growth of e-commerce in the last decade and the projected growth in the near future are putting upward pressure on large players like Amazon, Flipkart in order fulfillment. They have challenges in scaling up the inventory to satisfy more number of customers and providing better variety due to limited space of warehouses and manual processes. Inventory scaling needs an efficient solution for handling inventory. Small autonomous, robotic vehicles have been deployed in warehouses in recent years, replacing conventional systems composed largely of static conveyor belts. Autonomous vehicles could greatly help in the order fulfilment process by reducing the cost and time of delivery, thus providing better customer experience. With the rising demand for e-commerce in India, autonomous vehicles could be a boon to solve several challenges faced by the e-commerce industry. There are several players working on building capabilities in this area and running small pilots to test their solutions. For example, a small pizza shop in Mumbai succeeded in making a test-delivery less than 3 km away from its outlet by using a remote-controlled, GPS-enabled drone. [35] However, regulations in India currently do not permit commercial deliveries by unmanned aerial objects.

Indian Automated Guided Vehicles (AGVs) solution provider, Hi-Tech Robotic Systemz, is focusing on automating e-commerce fulfillment centers. The company expanded into warehousing specifically for omni-channel fulfillment using mobile robots addressing main challenges including, extreme peak season/day volumes, small number of items per order, large number of SKUs, high rate of customer return and optimal use of space among others.

3D Printing

The rise of e-commerce is empowering the customers to not only choose from a number of products but to also customize them as per their needs. The massive growth and competition in the e-commerce market necessitates the players to differentiate their offerings through customization, better pre- and post- delivery and compelling overall user experience. 3D printing can minimize the time required to take a product from design to production and production to market. The manufacturers can increase the range of products with small variations to achieve greater customer satisfaction. The other advantages of 3D printing are that the retailers can sell the design rather than the end product to the customer with a license to print the product. The e-commerce provider can provide a digital platform for the customer to self-design the products and subsequently place an order. The self-printing product market will expand if the 3D printer prices come down and become more accessible.

3D printing is yet to reach the masses but it has a tremendous potential to disrupt the manufacturing and retail sector. E-tailer, eBay has rolled out an iPhone application named eBay Exact, which allows customers to browse and buy customizable print-on-demand merchandise from three 3D printing companies. [36] Apart from eBay, Amazon in partnership with 3DLT will offer 3D printing service with 50 items that can be printed and shipped within 6 to 10 days. [37]

"We are in exciting times when Information technology is transforming analogue & electrical part products to that of combined sensors, data storage & software products, which are connected through Internet. These mutually connected products through the benefits of Internet connectivity unleashed a whole new era of opportunities.
I too represent a big data, smart software and public solutions company, which is solving the city traffic, congestion & traffic related problems by simply connecting a commercial vehicle driver to the customer directly. OLA is an enabling technology that connects millions of commuters making their lives easy.
In my opinion, innovation changes the scenario much faster & it overtakes the pace with which the public policy changes. In India where every year thousands of innovations happen but only few are able to survive because of archaic laws & non-conducive regulatory framework. It's the time to innovate the policy formulation process."

Arvind Singhatiya
Vice President, ANI Technologies

Cyber Security Challenges

The rapid evolution of online and mobile channels has carved out new markets and brought huge opportunities for emergent and established organisations alike. However, unfortunately the past decade has also witnessed significant disruption to ecommerce payment processes and systems. The interconnected, anonymous and instantaneous nature of these channels has inevitably led to the development of malicious threats targeting ecommerce and retail services firms, their people and their customers.

These e-crime and digital fraud threats continue to evolve rapidly, with attackers utilizing increasingly sophisticated techniques to target vulnerabilities in people, processes and technologies. The e-crime threats, if successfully realised, can undermine essential digital services, cause significant damage to brand reputations, and result in considerable financial and operational pain for organisations and their customers.
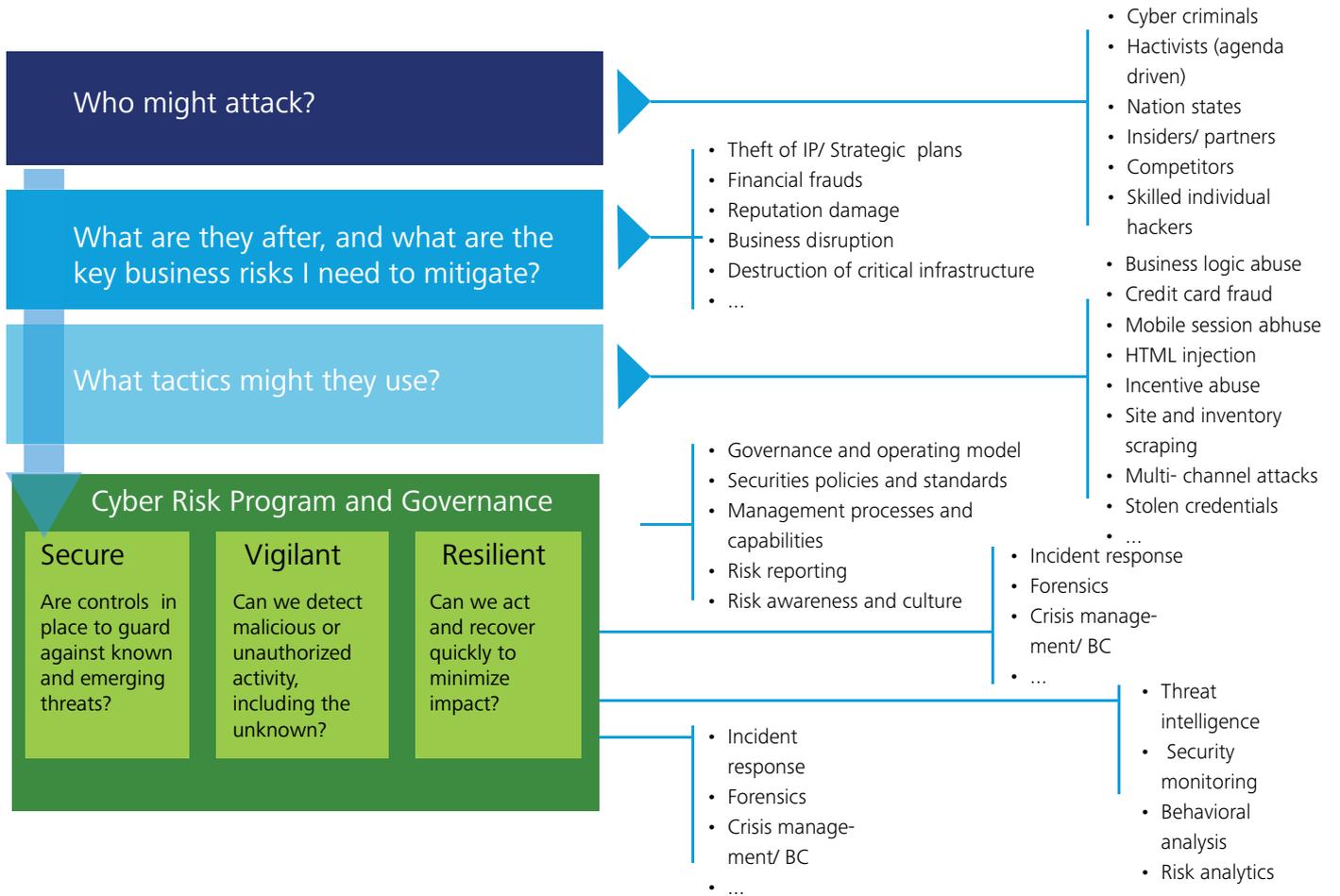
Worldwide, regulators are also turning their attention to these threats, with enhanced scrutiny of organisational resilience and the introduction of stringent compliance requirements. The challenge that ecommerce services firms are facing is to deliver richer, integrated services, through multiple remote and digital channels, under significant cost restraint, and in the face of sophisticated e-crime threats. Recent cyber-attacks highlight the urgency for retail organizations to contend with ever increasing risks to customer protection, continuity, fiduciary responsibility, and operations.

In order to achieve the security objectives, it is necessary to recognise that the security of the services and the protection of the customers' data are essential. To this end, and specifically to support the current security equation, it is necessary to have an enterprise wide target customer security model. This should be designed to deliver enhancements to both customer-facing and back office security capabilities, and in particular to improve existing security defences for remote online, telephone and mobile banking channels.

"There are two kinds of big companies in the United States. There are those who've been hacked by the Chinese and those who don't know they've been hacked by the Chinese." - James Comey, FBI Director [38]

Figure 8: Cyber Risk Taxonomy

Who might attack?

What are they after, and what are the key business risks I need to mitigate?

What tactics might they use?

Cyber Risk Program and Governance

Secure
Are controls in place to guard against known and emerging threats?

Vigilant
Can we detect malicious or unauthorized activity, including the unknown?

Resilient
Can we act and recover quickly to minimize impact?

- Cyber criminals
- Hactivists (agenda driven)
- Nation states
- Insiders/ partners
- Competitors
- Skilled individual hackers

- Theft of IP/ Strategic plans
- Financial frauds
- Reputation damage
- Business disruption
- Destruction of critical infrastructure
- ...

- Business logic abuse
- Credit card fraud
- Mobile session abhuse
- HTML injection
- Incentive abuse
- Site and inventory scraping
- Multi- channel attacks
- Stolen credentials
- ...

- Governance and operating model
- Securities policies and standards
- Management processes and capabilities
- Risk reporting
- Risk awareness and culture

- Incident response
- Forensics
- Crisis management/ BC
- ...

- Threat intelligence
- Security monitoring
- Behavioral analysis
- Risk analytics

- Incident response
- Forensics
- Crisis management/ BC
- ...

Source: Deloitte

Evolving Degree of Threats

The threat landscape is ever evolving and increasingly challenging. Customer data with retailers and e-commerce firms has been increasing at a rapid pace. As per the incremental service provisioning in e-commerce, more data will be generated in the next two years than was generated ever before. Access to all this data has made the retail industry one of the primary targets for cyber-attacks. Some of the key threats today's organizations are vulnerable to include:

- User account takeover via robotic attacks, password guessing, HTML injection and Man-in-the-Middle or Man-in-the-Browser. Account peeking is a very common behavior by fraudsters as it allows them to validate the login credentials, identify higher value accounts and understand the controls which must be defeated to complete future unauthorized transactions.
- Business Logic Abuse or the use of portal's functionality for malicious or exploitative purposes (e.g., abuse of loyalty point programs or shopping cart functionality, fraudulent account set up, Scripted attacks to find valid coupon codes.). Impact of such abuse may include effect on the genuine customer due to unauthorized use of coupon offers, overall decrease in revenue due to offer abuse, incremental portal overhead due to scripted attacks and site scraping by resellers or coupon aggregator sites.
- Distributed-Denial-of-Service or DDOS attack on the application layer where a deluge of page requests coordinated by a bad actor overwhelms the server and brings the site down.
- Site or Architecture Probing to gather as much information about site structure and security vulnerabilities as possible to prepare for an attack on that site.
- Site & Inventory Scraping or data theft perpetrated by copying large amounts of data from a website, typically via automated scripts.

As these threats evolve, it is clear that traditional tech-niques won't be able to prevent all threats. Additional layered security and specialized visibility into these attacks is needed.

Issues

Cyber Security issues lead to brand degradation and change in consumer behavior. Attacks are exploiting weaknesses in traditional controls, some very destructive. Traditional controls around Point of Sale and other IT systems are necessary but not adequate – greater emphasis must be placed on preventative controls, rapid detection, and rapid response. Retail innovations that drive growth (e.g. Digital, Omni-channel retailing, social etc.) also create cyber risk. Cyber risk management strategy must be a component of business strategy, and can't simply be delegated to IT.

1. Lack of appropriate control and transparency add to cyber security risk
Despite growing frequency and sophistication of cyber-attacks on the ecommerce industry, payment settlement agreements between credit card networks, the banks and the merchants have remained a closely guarded secret. Neither the government nor any database shares the list of defaulters with the public. Banks and credit card companies determine fault on a case-by-case basis through private contracts with individual merchants. Fines and the reasons for them remain sealed. Due to the lack of transparency, the majority of customers is not aware of any cyber security breaches and remains vulnerable to cyber attackers.

2. E-commerce firms and retailers face heat to increase efforts to ensure greater cyber security.
In the wake of recent data-security breaches at large retail corporations, retailers have been pushed to spend more to ensure tighter customer data security. While the traditional retailers have been investing millions of dollars to compete with online retailers the cyber-security threats have multiplied their operational expenditures.

3. Third-party cyber risk

As firms look to exploit the competitive edge they gain from the data they capture about their customers, they are increasingly leveraging the expertise of third parties such as analytics specialists and social marketers. Couple this with increasingly lengthy and complex supply chains, retail organizations are increasingly becoming enmeshed in very complex, interconnected value chains where sensitive data is shared and dependencies are introduced between business critical systems.

Firms are rapidly waking up to the realization that they often have very little visibility in these areas, and that they do not have a good understanding of where their customers data is travelling, and what their risks are. We should focus on to map these interconnections, develop robust risk management frameworks, and provide firms with assurance that they have understood and actively managed the risk of each partner relationship.

4. Inadequate joint efforts by banks and retailers to counter cyber security threats

While collaborated efforts are expected to ensure tighter cyber-security, banks and retailers differ in terms of responsibility sharing. Banks want retailers to bear more of the costs of replacing cards after breaches occur whereas retailers say banks have been slow to adopt new, more secure debit card technology.

Recommendations

The rapid pace at which technology is changing has provided large opportunities for organizations to develop new business models, services, and products. While the digital revolution has transformed the way we do business, it has also created complex and sophisticated security issues. Assets and Information that were once protected within the organization are now accessible online; customer channels are vulnerable to disruption; criminals have new opportunities for theft and fraud. With organizations growing organically and inorganically, complexity of managing businesses & security operations are also becoming complex.

So what is needed to address these targeted attacks? How can you gain visibility into these attacks and how can you stop them from causing further damage?

Organizations today thus face a continuously evolving threat landscape where the speed and intensity of attack is incrementing and response time is subsiding. As a result, organizations need to have rapid detection and response capabilities that allow for the synthesis of external and internal threat intelligence in a timely manner. This "situational awareness" is a required component of an organization's overall security posture and critical to maintaining the confidentiality, integrity, and availability of its information assets. Some of the key recommendations for an organization to step towards an effective security equation include:

- Set risk appetite and drive focus on what matters. Establish purpose and direction. Clearly articulate your cyber risk appetite and strategy. Support it by requisite action through funding and resourcing.
- Define the right balance between threat-centric vs. compliance-centric programs. Fully integrate cyber risk management into IT disciplines.
- Break down silos. Cyber risk is an enterprise-level issue. Lack of information-sharing is a top inhibitor for effective risk management.
- Be creative about cyber risk awareness. Your weakest link is the human factor. There is not enough talent to do everything in-house, so take a strategic approach to sourcing decisions.
- Incentivize openness and collaboration. Build strong relationships with partners, law enforcement, regulators, and vendors.
- Prepare for cyber-attacks by conducting war games, penetration tests, and exercising the cyber incident response plans.
- Have a threat intelligence mechanism in place – Focus on restructuring the diverse unstructured security data and information gathered from all the security entities and devices (recent and past events) to consolidate intelligent feeds, advice or a product, which could be used to make informed decisions in order to mitigate dynamic threats as pet the environment.

"The e-commerce market in India has really taken off aided by the growth in internet penetration on the back of mobile internet and availability of cheaper smartphones. While PCI-DSS compliance helps from a website security point of view the Two Factor Authentication (2FA) on card payments mandated by RBI helps protect customer payment security.

However, currently in view of abysmal wired broadband, the e-commerce growth is being driven through mobile internet. In such a scenario it is very cumbersome for customers to toggle between screens on the mobile to see and remember the 2FA pin and punch it back in the merchant site or app. Also, the payment gateway infrastructure on the mobile platform is still nascent and success rates are nowhere close to those on the desktop or laptop as all parties including bankers/merchants/etc. are still to optimize this on the mobile. Therefore, allowing small value transactions without 2FA if the customers are already logged into the merchant sites or apps might be a good way of removing obstacles in the completion of e-commerce transactions and help drive growth. App-in-app communication between PGs/Banks/Merchants or automated reading of PIN would enable futuristic technologies that can drive payment success rates higher.

On the tax side lot of undue hardship has been inflicted on the e-commerce merchants by department seeking TDS on payment gateway charges treating it on lines of bank commission and in the absence of tax not being deducted at source disallowing the expense in tax returns. These kinds of tax nuances need to be understood better and solved for early in the day to enable investments in the space and help drive growth. A big positive of the e-commerce growth is that it curbs cash economy and is therefore also a right step in the right direction. Hence it will be prudent to at least avoid tax issues if not provide tax incentives to the e-commerce industry."

Mohit Kabra
Chief Financial Officer, MakeMyTrip

Taxation Challenges

E-commerce is the 'new normal' with goods and services having moved from a physical platform to a digital one i.e. goods and services being transacted online or being themselves digital. The current tax laws could pose significant challenges in e-commerce, especially international transactions, and this calls for a new tax system which specifically recognizes and deals with e-commerce.

The Indian Revenue, having been aware of the unique challenges posed by e-commerce, constituted a High Powered Committee ('HPC') on "Electronic Commerce and Taxation" [39] in 2001 to examine the then current as well as proposed tax treatment of e-commerce. More recently, in 2013, OECD and the G20 countries adopted a 15-point action plan to address Base Erosion and Profit Shifting ('BEPS') strategies adopted by companies to minimise their tax cost through artificial structures; Action 1 of BEPS deals specifically with tax challenges in e-commerce.

Unique tax challenges presently posed by e-commerce

Generally, income of a company is taxed in the country of incorporation. However, a company with global operations is also taxed in countries in which it carries on business ('source country') in case a physical presence i.e. a permanent establishment ('PE') is created in that country. Profits attributable to the business activities carried out by the PE in such source country may be taxed. The physical presence could be in the form of a place at the disposal of the company or presence of employee / dependent agent. The inherent nature of e-commerce permits companies to do away with the need to have a physical presence to carry out business operations in a source country and this gives rise to tax challenges for the source country.

For instance, a challenge arises when a company carries out its business through websites, for example, providing services online, sale of music, etc. As per the Organization for Economic Cooperation and Development's ('OECD') 2014 commentary on its model tax treaty, [40] merely having a website does not lead to a PE; the website must be hosted on the company's server in the source country to create a PE. The servers of e-commerce companies may be located outside the source country, which may lead to the source country being unable to tax the income in the absence of a PE.

This challenge has also been recognized by the HPC in its report.

One of the most challenging supply types identified by OECD is growth of cross-border digital supplies to end customers, where it is difficult for countries to tax supplies made by non-residents. The option for addressing the challenge includes requiring vendors to register and account for taxes in the country of importation. The non-resident suppliers of B2C supplies can register and account for taxes in the customer jurisdiction as implemented by the European Union in 2015.

Another unique challenge arises in case of e-tailers. While maintaining facilities in a source country and making deliveries therefrom may not create a PE under the existing OECD model tax treaty, the same may lead to non-taxation in an e-commerce scenario, where maintaining a warehouse in the market country is a critical activity for an e-tailer which conducts all other activities through automated processes. Also, the e-commerce scenario makes it easier to fragment critical functions of a business and locate the same in different countries owing to increased communication. For example, the intellectual property rights may be situated in a low-tax country and profits in source countries could be reduced due to royalty payments for such rights. Such practices may result in avoidance of PE or low attribution of profits to the PE from a transfer pricing perspective.

The retailers would pay appropriate taxes in B2B or B2C online sale transactions. Where the online portal provides platform for C2C transaction, who has the onus to discharge tax? Already, some States are treating e-tailers as 'agents' of the sellers and therefore directing them to obtain VAT registration and discharge taxes on behalf of the sellers. When the goods are shipped by the retailer and delivered by the e-tailers, there arises a challenge when the destination State demands VAT treating such sale as a local sale in their State.

Aggregators were under the scanner of service tax authorities for rendering cab hiring services to customers. The Union budget 2015-16 has brought in clarity on this aspect. Aggregator or any of his representative office located in India is being made liable to Service Tax if the service is provided using the brand name of the aggregator in any manner.

Characterisation of income is another key tax challenge

in e-commerce and allied activities like connectivity or software payments. Broadly speaking, a payment could be characterised as business income, royalties or fees for technical services ('FTS') and the tax treatment is dependent on such characterisation – business income is not taxed unless there is a PE in the source country whereas generally, royalties and FTS are subject to withholding tax in the source country, irrespective of PE creation. Royalties broadly refer to any payment made for the use of commercial rights (e.g. copyright, trademark, patent), for information about industrial / commercial / scientific experience, for use of industrial / commercial / scientific equipment, etc. FTS broadly refers to payments for technical / managerial / consultancy services.

In e-commerce, there is transfer of digitised goods such as music, videos, software, and content such as social media trends, industry specific reports. Many payments in e-commerce tread the thin line between royalties, FTS, and business income and this is a contentious issue. For example, payment for music by an individual may be business income since the payment is for personal enjoyment whereas payment by a publisher for copyright in a picture to be reproduced as a book cover may be royalty since payment is made for the copyright for reproduction. India has had considerable litigation with regard to software with various courts giving opposing views – while some judicial pronouncements consider software as 'copyrighted article / shrink-wrapped software' and hence giving rise to business income, some others judgments consider use of software as 'use of copyright' and hence giving rise to royalties.

The issue whether supply of software amounts to sale of goods or provision of service has been deliberated by different High Courts and there are divergent views on the issue. While sale of software has been considered as sale of goods in some cases, the same has been considered as provision of service in other cases. The anomaly continues with mobile applications as well. While development of application would be subject to service tax, the possibility of demand of VAT on the same cannot be eliminated.

Social Media: Social media channels (e.g. Facebook, Twitter) and marketing platforms (e.g. Amazon, Flipkart) facilitate the easy exchange of information, reviews, listings, etc. about various goods and services. A

question could arise whether advertising revenue earned from sellers is royalties (for use of platform) or business income. There is general consensus both as per India's HPC report as well as OECD that the same should be considered as business income rather than royalties. However, the possibility of differing views being taken in future cannot be ruled out.

In future, the tax quagmire could only become more complex with technological advances such as 3D printing, autonomous vehicles, and machine to machine (M2M).

3D Printing: 3D printing refers to the process of producing a three-dimensional object by using additive processes in which successive layers of material are laid down under computer control to derive the 3D object. The customers could use the blueprint or design supplied by a manufacturer to produce the product themselves. In such a case, should the manufacturer be taxed in the source country where the customer uses the resources and the 3D printer to manufacture the product? Can the payment made to the manufacturer be attributed to sale of goods or royalties for use of the blueprint or design? How will the traditional Excise and VAT authorities tax this kind of evolutionary transaction?

For Excise and VAT authorities in India, it would be difficult to identify the manufacturer or the goods produced/cleared by them. It is due to factors such as non-registration, self-consumption of goods, barter etc.

Autonomous Vehicles: Autonomous vehicles refer to completely automatic vehicles which have no human intervention whereas M2M refers to machines capable of communicating with each other for performing a function. Tax challenges in this area could include allocation of tax base amongst multiple machines located in different countries, whether payment for software embedded in autonomous vehicles / machines is royalties or payment for equipment as a whole (and hence business income), whether payment for services provided by machines is FTS or regular business income, etc.

Besides tax, one of the major regulatory hurdles in India for e-commerce is that foreign investment, while permitted in B2B activities i.e. sale to business users, the same is not permitted in B2C activities i.e. sale to end retail consumers.

Conclusion

E-commerce is dynamic and is throwing up new business models at a fast pace. It is imperative that tax laws / administration keep pace meeting the challenges posed by such models to ensure appropriate taxation. Suggestions by the HPC report to deal with tax challenges of a digital economy include re-look at the current PE concept and replacing it with a 'base erosion' approach involving a low withholding tax on turnover. The OECD's 2014 deliverable on 'BEPS Action 1: Address the tax challenges of the digital economy' suggests some measures such as modification of PE concept, progressive tax on the bandwidth usage of websites, withholding tax by financial institutions while making payments for digital goods / services.

E-commerce transactions (such as airlines business) are subject to multi-layered taxes today. The Indian Government has proposed to introduce Goods and Service Tax ('GST') by April 2016. It is a destination based consumption tax. Under GST, there is shift of focus from manufacture/provision of service/sale to supply. Hence, GST should be a modern tax to cover additive manufacturing (3D printing), eliminate the anomaly of double taxation on software; address issues faced by e-commerce companies.

It is pertinent to note that the OECD has concluded that it would be difficult, if not impossible, to ring-fence the digital economy from the rest of the economy for tax purposes. It is necessary to adopt global taxation principles for e-commerce which would form the cornerstone of a country's national tax regime to deal with e-commerce scenarios. A guiding light could be the tax principles presented in the 1998 Ottawa Ministerial Conference on Electronic Commerce and accepted by OECD's BEPS Action 1 - uniform taxation between conventional and electronic forms of commerce, minimum compliance and administrative costs, clear and simple tax rules, and fairness in taxation. The borderless nature of e-commerce calls for a coordinated effort at the international level to result in a level-playing field for multi-national companies in all countries.

The Way Ahead

The digital disruptions are very much visible in the retail industry where online businesses are embracing technology and innovating at a pace not seen in the past and the offline retailers are finding it difficult to compete with this change. With the increasing competition in the e-commerce market, players who are able to adapt and innovate in the face of these changes will be in better position for success.

As per Deloitte India TMT Prediction 2015, a new category of service (handyman, delivery, Healthcare, repairing) that touches the daily lives of the consumer would play a pivotal role in the growth of e/m-commerce in the coming years. Although there are several trends that are shaping the market today, some of the key trends that the companies in digital commerce should focus on in the future are discussed below:

Experience matters

Customer is king for the brick-and-mortar stores and the digital age e-retailers. Shopping online is getting easier and the customer expectations are changing quickly. The e-tailers need to differentiate themselves to not only attract customers but also to build trust and loyalty. The big retailers provide product replacement warranty, after sales service, free delivery, etc., which have become norms in an online business.

Customer still wants consistent and seamless experience across all touch points: online, in-store, website, mobile app, social media, customer service, or delivery man. They expect to order, pick up, receive, ship, return from anywhere, anytime and from any device. The e-tailers need to analyze the lifecycle of the customer relationship and enhance the offerings at each stage. Hence, e-tailers need to improve upon the customer experience metrics for attracting and retaining customers to maximize their lifetime value. The website and mobile application of the e-tailer are the frontend for a customer where customers can find product information and decide to make purchase decision. The metrics for analysis could be search optimization, personalization options, user-friendliness, access to information and content appeal. To cater to these expectations, e-tailers will need to modify their internal operations, assemble right tools and infrastructure, and collaborate with third-party vendors and all other players in the e-commerce value chain.

Leading telecom operators are working with mobile app vendors to improve the overall network performance on smartphones which would help better customer experience in terms of network speed, performance of mobile app, battery life of smartphone. [41] All these parameters, although not fully in control of the e-tailer, influence the purchasing experience for customer.

Mobile first

There are about 930 million wireless subscribers in India. The wireless teledensity in urban areas is in excess of 140 while there is still huge potential in rural areas with teledensity of 44. A significantly large percentage of this subscriber base in India will be using mobile devices to access internet, estimated at 235 million users as of September 2014 and growing rapidly. This rapid spread of mobile internet, especially of smart phones could unlock a significant market beyond the Tier 1 cities for the online retail segment. Undoubtedly, mobile retailing is expected to continue to grow aggressively. In the next three years, global e-commerce sales made via mobile devices are expected to top $638 billion. [42]

However, while shoppers want real-time, relevant, and personalized information and offers, retailers will need to surround this service with very strong privacy and security. Trust, transparency, and protecting customer information will be critical in retaining loyalty as mobile retailing becomes the norm.

Online commerce companies should enable all features from search-to-purchase on mobile apps, such as facilitating product research, price comparison, view ratings and reviews, and payment.

The launch of wearables, such as Google Glass and Apple Watch, opens new opportunities for reaching out to customers. E-tailers would keep an eye on developments in this arena, although it might only be an urban phenomenon at the moment.

Growing power of e-Marketplaces

The e-Marketplaces are growing significantly with the increase in the Internet penetration and Smartphone usage. Internet enabled mobiles are making shopping a unique experience for buyers. e-Marketplaces provide a technology platform for sellers to participate and a trusted environment to scale up rapidly, increase profit

and is highly valued by the customers. The non-inventory led B2C model also allows the e-commerce players to provide attractive discounts and offers which are difficult for inventory led brick-and-mortar shops as well as for pure e-Tailers.

According to Deloitte's study "Global Powers of Retailing 2015," online marketplaces rather than pure inventory-led companies tend to serve as the primary e-commerce model in Asia. The high costs of holding inventory, poor logistics and supply chain challenges in India are shifting the inventory-led companies and new entrants to adopt marketplace model. Also, e-Marketplaces work well in India due to high fragmentation on supply side.

The rise of online sales in the developing markets is encouraging retailers to go online for global expansion. The e-retailers are becoming exclusive partners for different brands. e.g. The Chinese smartphone manufacturer, Xiaomi, entered Indian market through Flipkart e-Marketplace that helped to reach a large customer base in a short time. [43] Similarly, OnePlus teamed up with Amazon India for exclusive partnership. [44]

"While a typical e-commerce business model has revolved around developing a marketplace, I feel the future will be all about business models that innovate and transform this very value chain. When we started, we had to constantly innovate and engage with the suppliers to convince them of merits of shifting to a platform that pulls customers towards them (rather than pushes products to them). We were all the time stepping in to their shoes and seeing their perspective of why wouldn't they want to do the same. The emerging business models will challenge the existing ecosystem, and make them more open and transparent so that customers transact on the basis of the product or specific value proposition, rather than just buying for the sake of a relationship."

Alok Bansal
CFO & Co-founder, PolicyBazaar
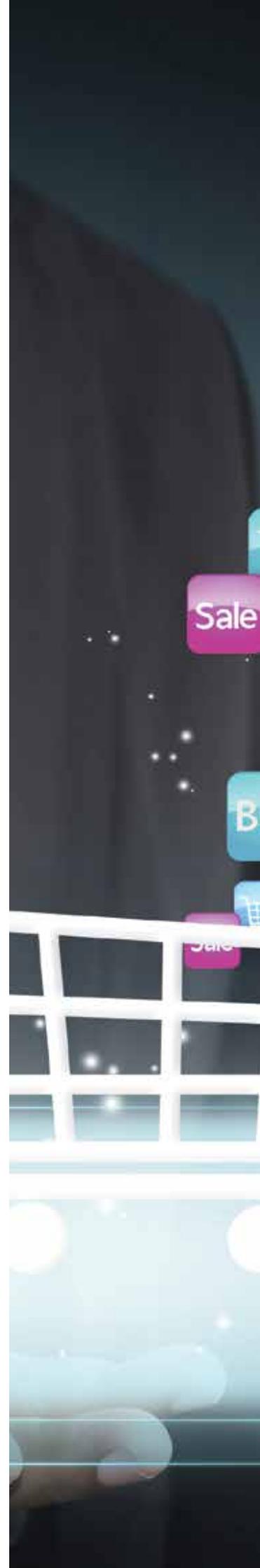
Omnichannel service

The comScore study points that consumers are more likely to shop at retailers who offer online shopping and have brick-and-mortar stores. [45] Traditional retailers view their stores as competitive advantage to connect with their customers and commonly emphasize on the touch-and-feel experience of the products in-store. On the other side, e-commerce players attract customers by offering wide variety of products with price comparison and review comments and deep discounts. However, both, e-commerce providers and retailers agree on the benefits of either model. Increasingly retailers are extending their offline business with e-commerce stores to supplement the sales. Likewise, online retailers also need to have offline presence to give multiple options to the customer. They could also explore the technology based innovations like virtual fitting rooms to give real-life experience in an animated 3D simulation. For example, Myntra acquired Fitiquette, a developer of virtual fitting room technology. Majority of the companies in top 50 in the Deloitte Global Power of Retailing study also revealed to be multi-channel retailers with brick-and-mortar stores as well as online or other non-store operations.

Companies need to manage their marketing and technology platforms to deliver true omnichannel shopping and service experience to maximize lifetime value of the customer. Consistent messaging across all touchpoints - in-store, online, mobile, distribution center, click-and-collect would go long way in making positive impact on customer's mind.

Social media (&) analytics

Social media is becoming increasingly important for e-commerce players to understand reviews of people on products and services. The e-tailers can check their social media footprint with the number of likes and tweets about the brand and products. Social media provides a platform to directly interact with customers and respond to their queries.

E-retailers can promote products as per the trending topics in social media channels. The brand pages can post expert opinions on the products in video or blogs and thus can help in better customer engagement. The social media also provides a suitable platform to perform extensive market research where the e-tailers can recognize changing customer habits, unmet demand, white spaces in market, get early feedback on test advertisements and can gain fast mover advantage.

Online retail players have started to use social media analytics. The analytics can be used to mitigate risks and frauds, to know customer lifetime value, customer segments, forecasting and targeting. The analysis of social media data can provide information on product demand, competitors pricing, customers buying behavior, etc. Prior knowledge of this data can significantly help in customization of service offerings and enhancing user experience. Optimized pricing can be done based on price comparison with the competitor's products and accordingly changes can be done in real-time.

Payments

Cash on Delivery (CoD) is the most preferred mode of payment in India with 45% of the shoppers using it while 21% shoppers opt for debit cards and another 16% go for credit cards. CoD mode has many issues ranging from high direct and indirect costs, security, or time taken to reverse logistics arising from CoD defaults. More people have banking access due to the financial inclusion project - Jan Dhan Yojna of the government. Digital companies such Paytm, Videocon D2H, and telecom operators such as Airtel, Idea are entering the banking arena with payment bank license. Emerging cashless payment solutions will boost the e-commerce sector.

Figure 9: Share of payment systems in India

Net banking, mobile wallets, others	17%
Credit Card	16%
Debit Card	21%
Cash on Delivery	45%
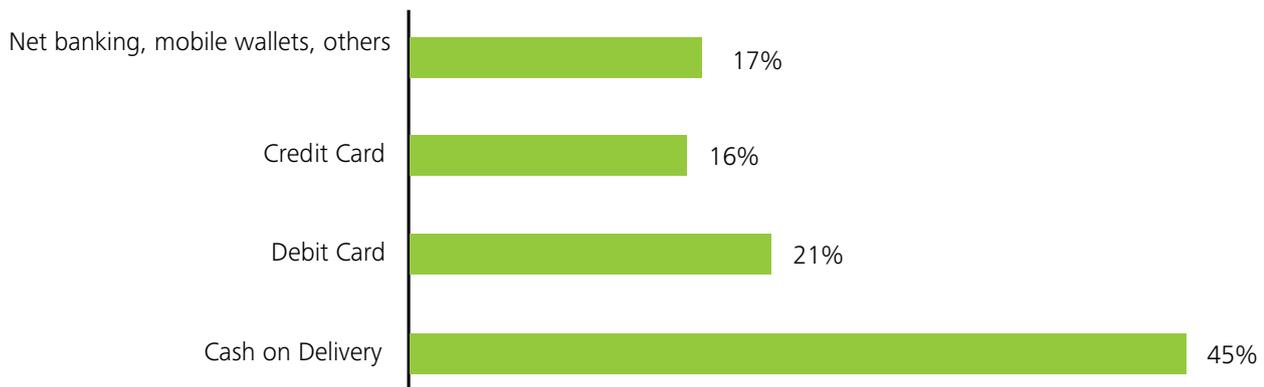
Source: IAMAI

A card based or online payment saves significant costs and time for e-commerce companies. Mobile wallets launched by a few players such as MobiKwik, Oxigen, Citrus in India are user friendly and secure. Smartphone based mobile wallets such as Apple Pay, Google wallet provide easy payment options and even manage the loyalty cards of the customers for future purchase. Banks partner with e-commerce players to provide lucrative offers like cashback, Easy EMI, secured transaction, Loyalty points to promote card or net banking payments. PayPal, CCAvenue and other payment gateways enable secure transactions on digital platforms. All players in online retail ecosystem need to increase customer awareness about the benefits of cashless payments.

Robust supply chains and logistics

Supply chains are the lifeline of e-commerce players. The rapidly growing e-commerce sector needs a robust logistic and supply chain to be successful in future. India being a vast country, the efficiency and reachability of the logistics and supply chain, can make big difference for the e-commerce players. Presently, the courier companies, handling the logistics business in India, have limited reach. To tackle the situation, some of the major players like Flipkart have started their in-house logistics

operations. Recently Amazon started its own logistics arm, Amazon Transportation Services Private Limited, which will ship goods from sellers who transact on the company's online marketplace in India. [48]

The last mile delivery is still a concern for most of the players especially given the high percentage of CoD deliveries in India. Indian Post comes to rescue especially for these CoD-based payments. Small distribution centers across all major cities and towns could guide the products to their destination. These centers could be extended as collection locations for "Click-and-collect" delivery methods. Automated Guided Vehicles (AGV) could solve many logistic problems of the e-tailers and result in highly successful product deliveries. For example, Amazon Prime Air is working on drone-based delivery of its products. [49] Local knowledge of the delivery person complemented by GPS-based device could lead to efficient delivery of products.

Reverse logistics of damaged goods not only results in high cost and time, but also bad reputation for the company. Accurate labelling, tracking facilities, quality material for packing and package cushioning would go a long way in successful order fulfillments.

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