

eCommerce in the Customer Empowerment Era

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Abstract

This Article begins with a description of the early years of eCommerce and the limitations of the existing eCommerce systems. The second section lists the drivers for eCommerce Applications and describes different categories of eCommerce Applications, followed by a step-by-step approach for building an eCommerce Applications and describes the Logical Architecture of eCommerce ecosystem. A final section explores the benefits of and trends in eCommerce systems.

Introduction

E-commerce applications began in the early 1970s with such innovations as electronic transfer of funds. However, the applications were limited to large corporations and a few daring small businesses. Then came electronic data interchange (EDI), which added other kinds of transaction processing and extended participation to all industries. Since the commercialization of the Internet and the introduction of the Web in the early 1990s, EC applications have rapidly expanded. The field of e-commerce is broad. E-commerce is usually associated with buying and selling over the Internet, or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer-mediated network.



Figure 1: What you need?

Limitations of eCommerce Application

EC has limitations, both technical and nontechnical, which have slowed its growth and acceptance. Some have been contributing factors to the failures of many EC projects in recent years. Despite its limitations and failures, ecommerce has made remarkably rapid progress. As experience builds and technology improves, the ratio of EC benefits to cost will increase, resulting in an even greater rate of EC adoption. Those limitations are listed in the table below.

Technical Limitations	Non-Technical Limitations
<ul style="list-style-type: none"> • Lack of universally accepted standards for quality, security, and reliability. • Insufficient telecommunications bandwidth. • Still-evolving software development tools. • Difficulties in integrating the Internet and EC software with some existing (especially legacy) applications and databases. • Need for special Web servers in addition to the network servers. • Expensive and/or inconvenient Internet accessibility for many would-be users. 	<ul style="list-style-type: none"> • Lack of government regulations and industry standards. • Lack of mature methodologies for measuring benefits of EC. • Many sellers and buyers waiting for EC to stabilize before they take part. • Customer resistance to changing from a real to a virtual store. People do not yet sufficiently trust paperless, faceless transactions. • Perception that EC is expensive and unsecured. • An insufficient number (critical mass) of sellers and buyers exists for profitable EC operations.

Figure 2: eCommerce Limitations

Business Drivers for eCommerce Systems

There are at least three major forces fuelling e-commerce economic forces: marketing and customer interaction, and technology.

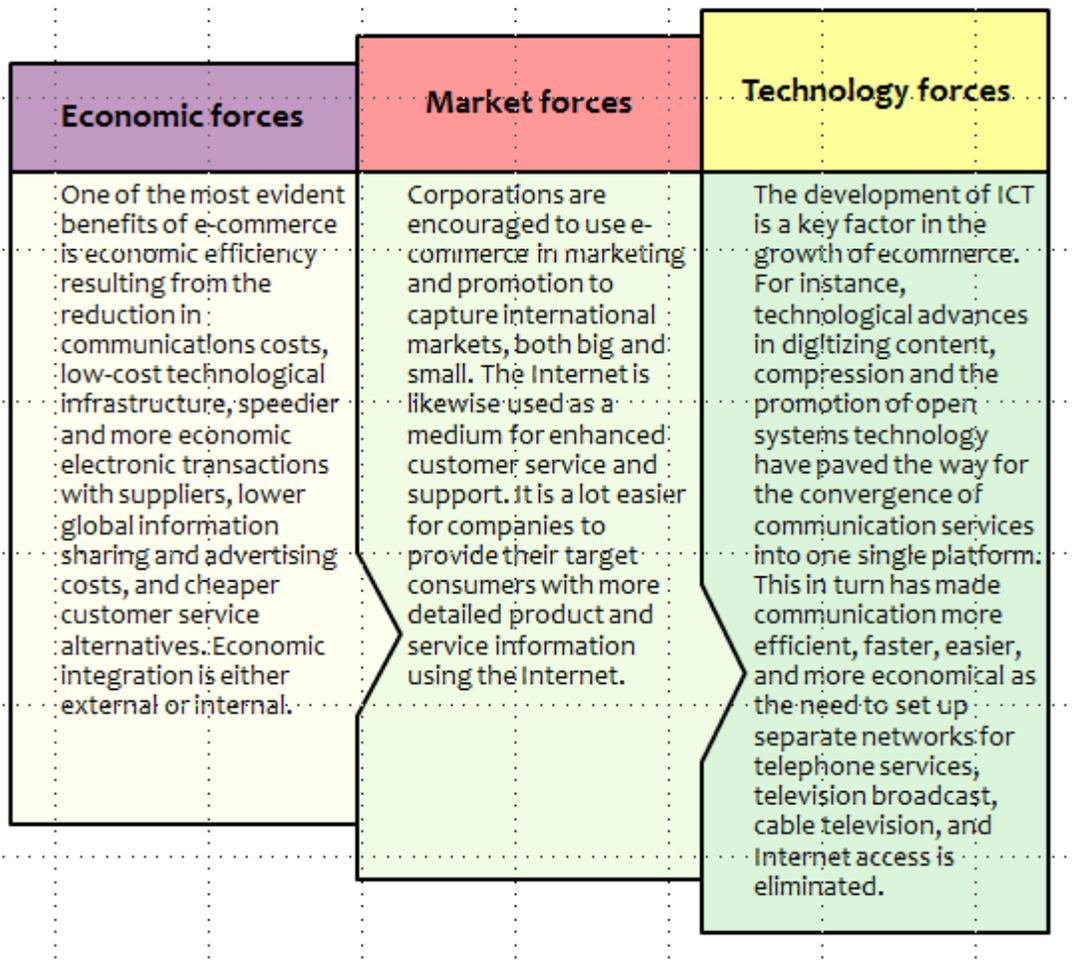


Figure 3: eCommerce Drivers

Types of eCommerce Applications

The different types of eCommerce systems are business-to-business (B2B), business to- consumer (B2C), business-to-government (B2G), consumer-to-consumer (C2C) and mobile commerce (m-commerce).

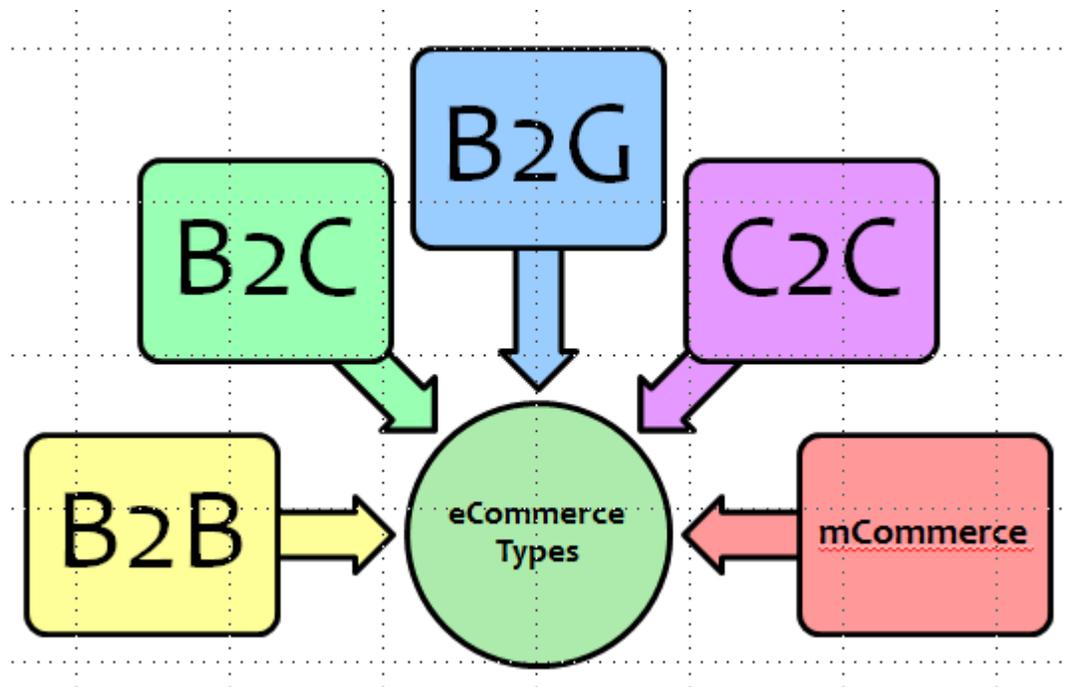


Figure 4: eCommerce Categories

B2B e-commerce:

B2B e-commerce is simply defined as e-commerce between companies. This is the type of e-commerce that deals with relationships between and among businesses. About 80% of e-commerce is of this type, and most experts predict that B2B e-commerce will continue to grow faster than the B2C segment.

B2C e-commerce:

Business-to-consumer e-commerce, or commerce between companies and consumers, involves customers gathering information, purchasing physical or information goods, and for information goods, receiving products over an electronic network.

B2G e-commerce:

Business-to-Government e-commerce or B2G is generally defined as commerce between companies and the public sector. It refers to the use of the Internet for public procurement, licensing procedures, and other government-related operations.

C2C e-commerce:

Consumer-to-consumer e-commerce or C2C is simply commerce between private individuals or consumers. This type of e-commerce is characterized by the growth of electronic marketplaces and online auctions, particularly in vertical industries where firms/businesses can bid for what they want from among multiple suppliers.

mCommerce:

mCommerce – aka mobile commerce is the buying and selling of goods and services through wireless technology-i.e., handheld devices such as cellular telephones and personal digital assistants (PDAs). As content delivery over wireless devices becomes faster, more secure, and scalable, some believe that m-commerce will surpass wireline e-commerce as the method of choice for digital commerce transactions.

Stepwise Approach for Building an eCommerce Solution

Once it has been determined that a business can benefit from an online presence, the business type, the product line, the business's organization, and the budget dictate what functionality the Webstore should have and how the Web site should be developed. Companies can choose from a number of different types of Web sites, including B2C, B2B or C2C.

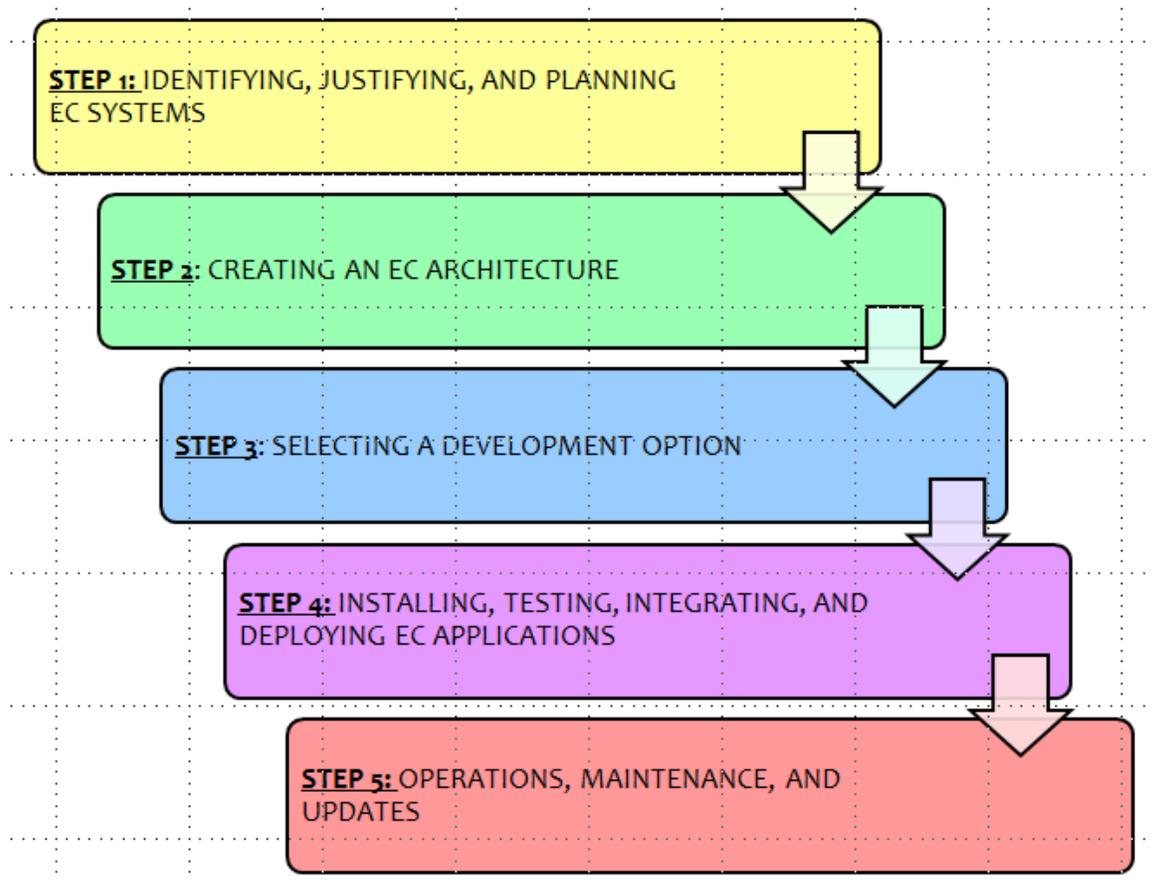


Figure 5: Stepwise Journey

STEP 1: Identifying, Justifying, and Planning EC Systems:

EC applications are built to enable one or more business processes. Consequently, their planning must be aligned with that of the organization's overall business plan and the specific processes. Existing processes may need to be restructured to take full advantage of the benefits of the supporting IT. The output of this step is a decision to go with a specific application, with a roadmap, budget, and governance. This first step is typically performed in-house. All other steps can be completed either in-house or outsourced.

STEP 2: Creating an EC Architecture:

EC architecture is a plan for organizing the underlying infrastructure and applications of a site. The plan specifies the following:

- Information and data required to fulfill the business goals and vision
- Application modules that will deliver and manage the information and data
- Specific hardware and software on which the application modules will run
- Security, Scalability, and Reliability required by the applications

The results obtained from step 2 are routed to a steering committee at the strategic planning level. Based on the results of step 2, the application portfolio may be modified as required by the decision makers. Once the architecture is determined and the project gets final approval, a decision about how to develop the specific EC application must be made and a development option has to be chosen.

STEP 3: Strategies for Developing an eCommerce System:

EC applications can be developed through several alternative approaches. The criteria for selecting from among the various options are presented in the diagram below

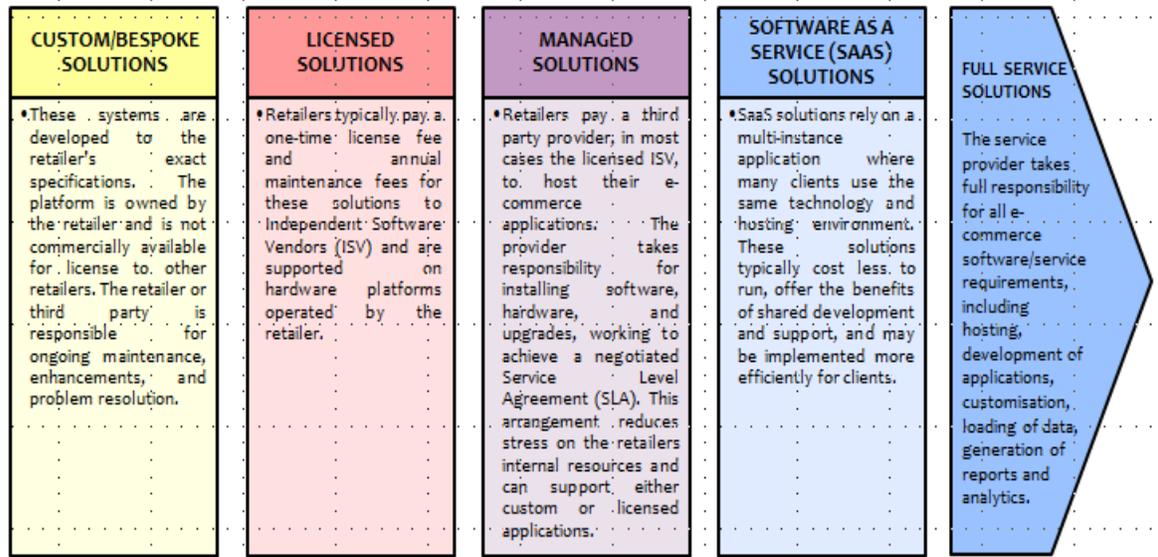


Figure 6: Development Strategy

STEP 4: Installing, Testing, Integrating, and Deploying EC Applications;

Once a system has been developed, the next step involves getting the application up and running in the selected hardware and network environment. One of the steps in installing an application is connecting it to back-end databases, to other applications, and often to other Web sites. Once all of the Web site applications pass all of the tests, they can be made available to the end users.

STEP 5: Operations, Maintenance, and Updates;

Typically it takes more time, effort, and money to operate and maintain a site than it does to build and install it in the first place. To achieve ongoing usability, a site needs to be updated frequently. These changes and updates need to undergo the same testing procedures used during the installation process.

Logical Architecture of eCommerce Application

The emphasis here is on the functional block that relates to the commerce application. The core services layer would typically be achieved through Service Oriented Architecture – SOA. The architecture would incorporate other building blocks from the SOA stack, including but not limited to ESB, BPM, BAM and the adapter library. The consumer touch points would be integrated into the landscape by use of different cross channel and multi-channel technology components. The following diagram depicts the logical architecture of an eCommerce application.

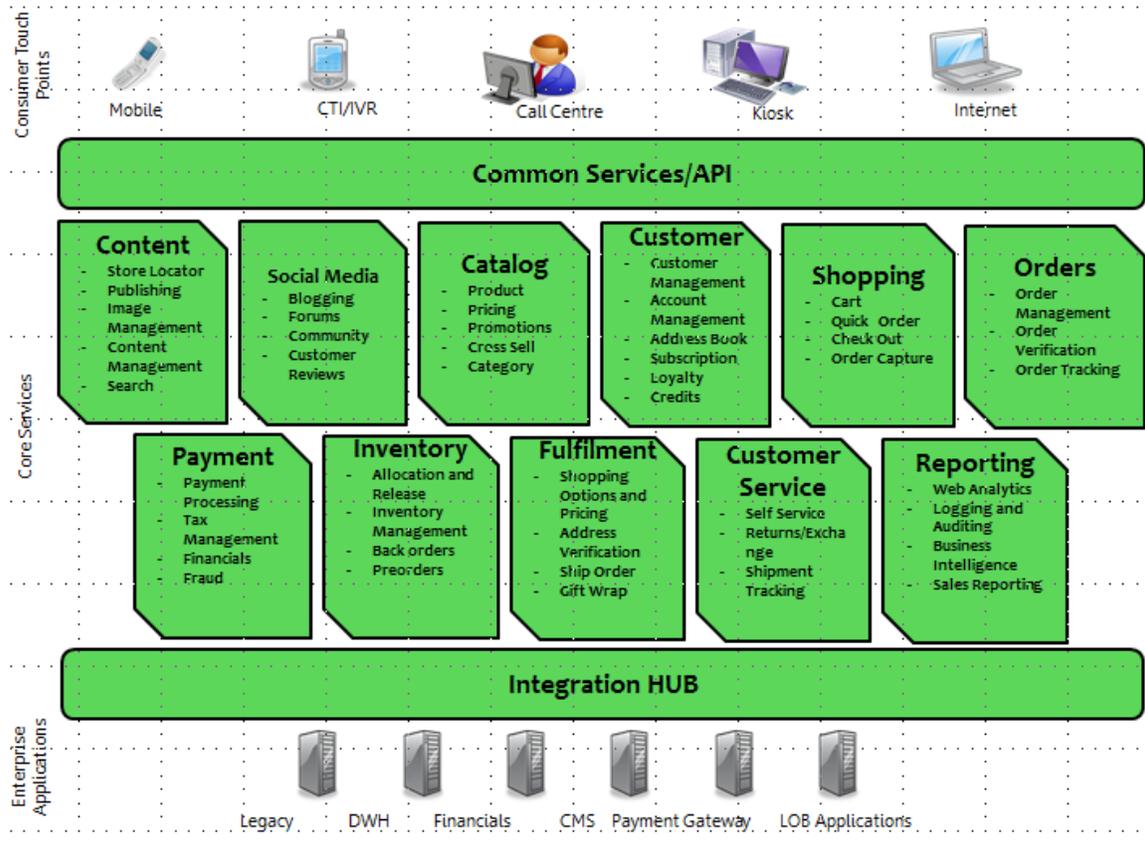


Figure 7: eCommerce Logical Architecture

Trends impacting eCommerce Systems

Consumers, once wary of virtual buying, are now gaining confidence in on-line purchasing as a result of optimized sites that provide a consumer-friendly experience. The next few years will doubtless witness even greater growth in eCommerce than the past few years have seen.

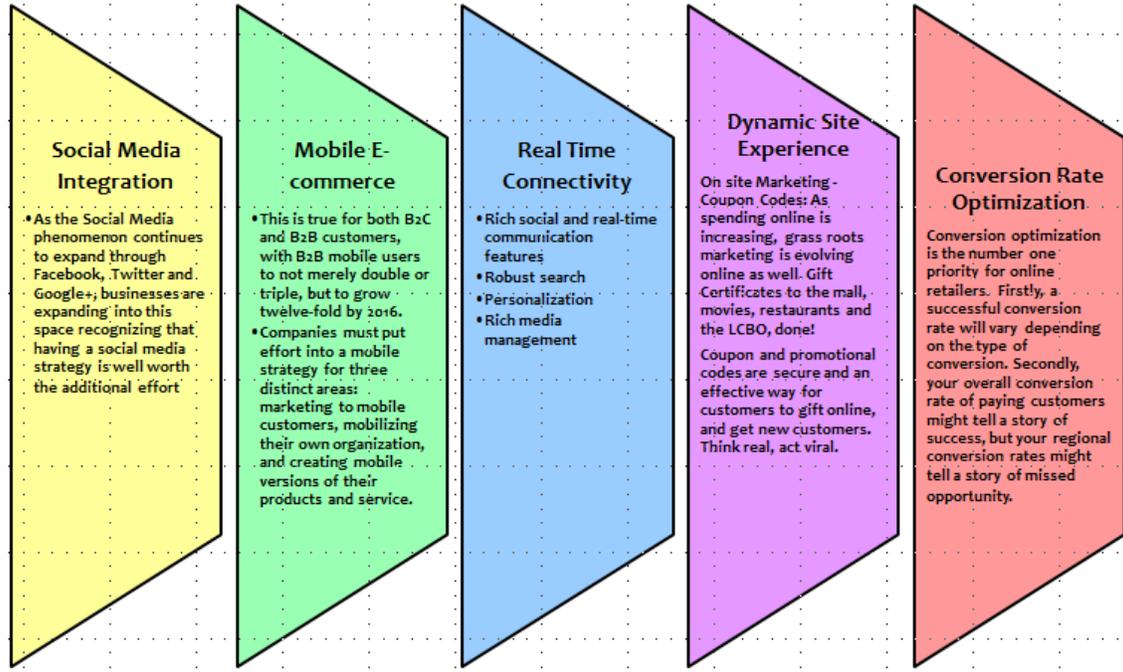


Figure 8: eCommerce Trends

Benefits of eCommerce Application

The major benefits are listed in table below:

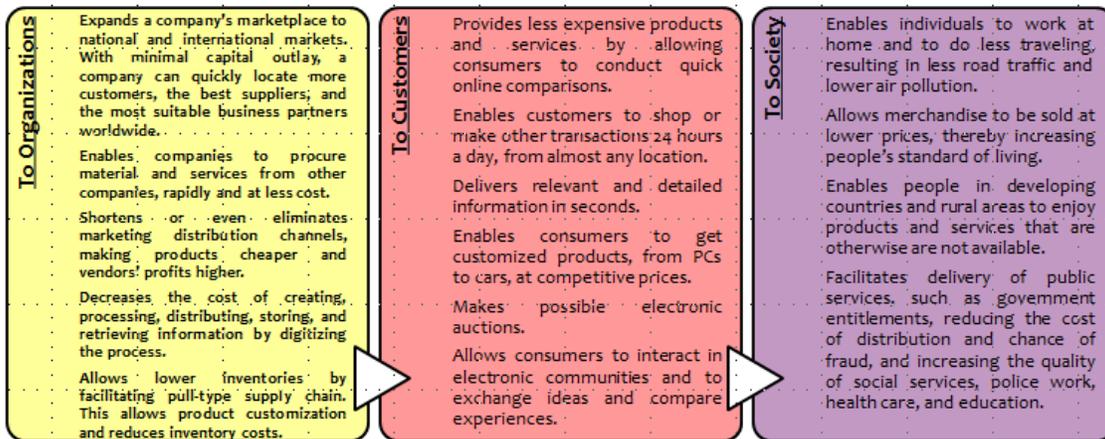


Figure 8: eCommerce Benefits

Conclusion

Online retailers are on the cusp of a totally new way of doing business. They have a unique opportunity to gain a significant competitive advantage in their respective markets, provided they consistently deliver a consumer-friendly experience and enable unique multichannel commerce behaviors before their competitors. Success will depend on honing efforts to address user-centric customer experiences, narrowing the focus to the most-valuable programs, and electing the right technology strategy that will enable internal teams to deliver optimized scalable experiences. Areas to watch are the emergence of real-time retail analytics, social-network enabled commerce, and the continued success of mobile applications, and tools that will enable retailers to target merchandising more effectively.

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Sameer S Paradkar is an Enterprise Architect with EY IT Advisory. Sameer is responsible for the Presales, Consulting and Advisory and Enterprise Transformation. In the past Sameer has engaged with customers at Departmental Heads, Technical and Business leader's levels and advised them on technology adoption strategy and roadmaps. Sameer is creative and out-of-the-box thinker. Sameer has deep understanding of different systems and is able to articulate advantages and disadvantages of each as they relate to a customer business model. Sameer has extensive experience in the ICT industry and he has worked in the U.S.A, UK, Europe, Asia Pacific and the Middle East regions extensively.

Disclaimer

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