

# QUO VADIS ELECTRONIC COMMERCE: A PRELIMINARY INVESTIGATION

*Lady Dawn C. Seballos, Teletech, Blk. 3 Lot 18 St. Matthew Subd. Lipa City, Batangas,  
Philippines 4217, 011-63-9158912028, [jerlay88@yahoo.com](mailto:jerlay88@yahoo.com)  
Efraim Turban, University of Hawaii, 3435 Kehala Dr. Kihei HI 96753  
808-269-9178 [efraimtur@yahoo.com](mailto:efraimtur@yahoo.com)*

## ABSTRACT

Since its inception two decades ago, electronic commerce (EC) has grown exponentially, adding new models and services and capturing a larger market share. The questions are: What is next? Where is this field going? To investigate these issues, we developed a framework that portrays the drivers of EC growth. Recognizing that EC in totality is too broad and diversified, we suggest using the framework only on segments of EC. This framework can be used as a basis for future investigations by researchers and for strategy formulation by practitioners.

## 1. INTRODUCTION

This paper briefly describes the major elements of the framework, including technology, innovative business models, EC attributes, and the relevant business environment. The framework recognizes three groups of participants: consumers of EC, suppliers of EC and third party service providers.

Two questions to ask are: Where is EC going now? and Which of its segments will blossom and which will fail?

Unfortunately, there is only much speculation and little research that attempts to answer this question. Actually, it is difficult to answer this question since there are many influencing factors. In order to help investigating this area we developed a simple framework that organizes these factors around the major drivers of EC. Researchers can use this framework to develop their agenda.

This paper is structured as follow: In Section 2, we provide some background information related to the growth of EC in general. In Section 3, we present our proposed framework. The major elements of the framework are described in the following sections: Attributes and benefits are described in Section 4, Section 5, summarizes relevant emerging technological developments. In Section 6, we illustrate some innovative business models including some Chinese ones. In Section 7, we describe some relevant factors in the business environment. Finally, conclusions are provided in Section 8.

## 2. The Growth of the Electronic Commerce Field

According to the U.S. Census Bureau [29], e-commerce sales in 2011 accounted for 49.3 percent of total sales of all manufacturing activities in the United States, 24.3 percent of

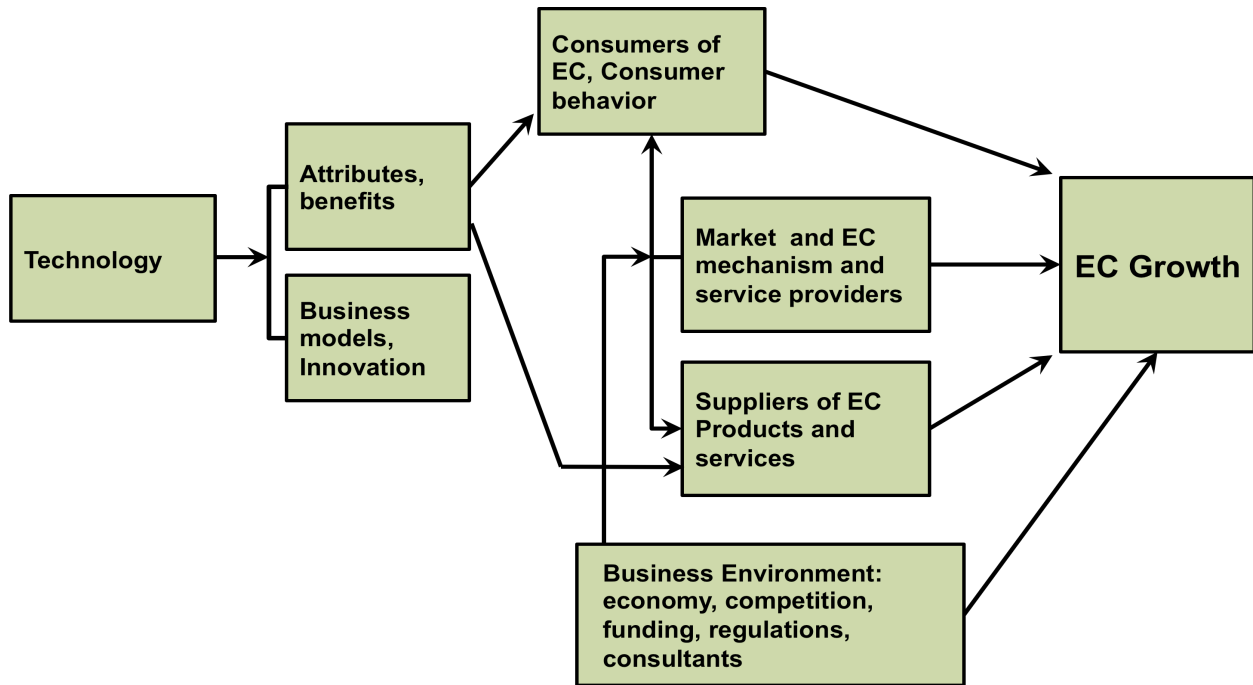
merchant wholesalers, 4.7 percent of all retailing, and 2 percent of all sales in selected service industries. EC is growing much faster than the total commerce (by about 16 to 17 percent annually against 2-4%). For a more detailed breakdown, see the U.S. Census Bureau [29] report as well as Plunkett et al. [23].

There is a clear trend that online retail sales are taking business away from traditional retailers (Moseti, [20]). EC is growing not only in the US. For example, according to an Ecommerce Europe press release of June 17, 2014, European e-commerce grew by 16.3 percent in 2013 reaching €363.1 billion (see [ecommerce-europe.eu/press/european-e-commerce-grew-by-16-to-363-billion-in-2013](#)). Finally, in several developing countries, EC is becoming a major economic asset (e.g., see Maitra [16] ) for information on India, and Estopace [7], regarding Indonesia and other countries). Most notable is the growth of EC in China. According to Stanley and Ritacca [25], e-commerce in China is exploding, expected to reach \$540 billion USD by 2015.

According to Tong [27], China passed the US in online EC retail sales in 2013, and Alibaba Group is the world's largest EC company (per [businessinsider.com/these-charts-show-how-alibaba-became-the-worlds-largest-e-commerce-company-2014-5](#)). For a comprehensive overview of EC in China, see Juho [12].

### **3. A Framework of EC Growth**

The phenomenal growth of EC is driven by several factors, depending on the segment and type of EC, the industry, country, culture, and more. However, several major drivers are common to most situations. They are shown in Figure 1.



**Figure 1 A framework for what is driving EC growth**

As seen in the figure, the process described by the frameworks is starting with enabling technology. At the start of EC it was the Internet (specifically, the Web), and later on came mobility, Web 2.0, social networks, cloud computing and analytics, just to name a few. Technology is driving the attributes and benefits of EC as well as providing the basis for innovations and EC business models.

This simple model can contribute to the understanding of the growth of EC and it can be used as a basis for investigation of the success factors, for growth of e-commerce in general, and its segments in particular. In the remainder of this paper, we describe the major elements of this framework.

#### **4. Attributes and perceived benefits**

EC has an ever changing set of attributes and features that result in benefits to EC participants. These benefits have attracted more and more participants. Typical attributes and benefits are:

*For consumers:* Shop anytime from anywhere, pay less, choose from a large selection, be able to self-configure products/services, no sales tax (in some states), can work from home, avoid pushy salespeople, interact and get recommendations from friends and other consumers, get instant delivery of digitized products, learn at home, save time (no need to go to the stores), avoid physical risks at shopping centers and parking lots, and may get better customer service.

*For product/service providers:* Reduce marketing costs (e.g., no need for intermediaries). Global reach of suppliers and customers, businesses can be open all the time, reduced communication costs, more efficient procurement, improved delivery of CRM, ability to personalize products/services and advertisements, better environment for product innovation, better feedback from customers. Lower inventory, facilitation of problem solving, and save costs digitizing products and delivery of services.

*For society at large:* Improved government services, improved delivery of health, education, public safety and more, less pollution due to less driving to stores, and reduced digital divide.

Note that the benefits depend on the type of e-commerce. However, since this is a ‘win-win’ situation, it is no wonder that EC in totality has been growing rapidly and globally.

As indicated earlier, the major drivers of these attributes and benefits are technology and business models.

## **5. Technology**

According to Westerman et.al., [31], technology will lead to business transformation. They list several technologies, most of which are described here.

Many types of technologies are used to enable EC. For example, mobile apps play a major role in many of the new shopping and payment models. The type of technology to consider depends on the EC application. For example, 3D Printing is important for mass customization, and augmented reality is invading retailing. We will provide only a short list and some references.

A good place to start is the IEEE list of top 23 technologies for 2022 (see the list at Taft [26] ). McCafferty [19], selected 11 game-changing technology trends adapted from the IEEE report. Gartner [19] provided a list of top 10 strategic technology trends (an annual report), which are summarized by High [11]. From these lists, the following are those most likely to influence EC: Seamless intelligence networking, cloud computing, machine learning and intelligent systems, universal memory, Internet of Things (Marcovici, [18] ), 3D Printing, crowdsourcing, and big data analytics. Brynjolfsson and McAfee [4] call the new technologies the ‘Second Machine Age’ and describe their impact on business models, work, and quality of life.

Technologies are emerging in almost all areas related to EC. For example, product delivery may someday be done by drones. E-payment via smartphones is progressing rapidly, replacing credit cards and checks.

For additional presentation and discussion, see Gartner [9], Ahmad [2], Gandhi et.al. [8], and Enterprise Innovation Editors [6].

As indicated earlier, advances in technology are also the major enablers of the new and improved EC business models.

## **6. Innovative EC Business Models**

A *business model* in general describes the manner in which business is done and revenue is generated. A major purpose of the EC business model is to attract enough customers to buy the products and services offered online. Business models are also aimed at investors such as venture capitalists, inducing them to financially support EC start ups. In this section, we present several fairly new and innovative business models and some companies that use them. We selected a variety of models used by existing US public companies.

For a list of innovative business models and references see the full version of the paper at the website: [sites.google.com/sites/efraimturban](https://sites.google.com/sites/efraimturban).

## **7. The Business Environment of E-Commerce**

The business environment that surrounds EC is broad and diversified. Examples are the digital economy, the shared economy and regulation and taxation.

## **8. Conclusions**

In this paper, we proposed a framework for investigating the directions of EC growth. We recognized the following elements in this framework: Technology, attributes and benefits, business models, and the business environment. These influence the behavior of three groups of EC participants: consumers (individuals and organizations), suppliers (providers) of EC and third party service providers. The behavior of the participants may determine the direction and magnitude of EC.

Given the diversity and complexity of the EC field, research should be conducted, using this framework, on small segments of the field. For example, one can concentrate on a particular industry (e.g., transportation or health care), or on certain activities (e.g., procurement), or on generic business model. Areas such as social commerce can be divided, for example, into social media marketing and social enterprise.

The full version of the paper, including extensive bibliography and references see the website: [sites.google.com/sites/efraimturban](https://sites.google.com/sites/efraimturban).

