

# The CPT Framework: Understanding the Roles of Culture, Policy and Technology in Promoting Ecommerce Readiness

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## Abstract

Ecommerce has been readily adopted in more developed countries, but is still lagging in less developed nations. In this work, we synthesize lessons learned from economies that have already adopted ecommerce, and propose strategies that can be used to promote ecommerce adoption. We propose a comprehensive framework that simultaneously examines the importance of culture, policy and technology in promoting ecommerce within an economy. Our recommended strategies also utilize a 3-pronged approach that describes how changes in culture, policy and technology can be made to drive each other, so as to increase the readiness of the economy for ecommerce.

**Key words:** Ecommerce, international, culture, policy, technology.

## 1. Introduction

Over the last decade, the use of the Internet for commercial transactions has seen significant increases. Ecommerce is a segment of the economy that first developed in countries with sufficient economic and technical resources (Travica, 2002). Countries that are less developed follow at variable paces (Ein-Dor, Goodman, and Wolcott, 2000; Petrazzini and Kibati, 1999).

While the pace of adoption of ecommerce in developing countries has been slower, the benefits to doing so are well documented. The Group of Eight (G8) countries (comprised of Canada, France, Germany, Italy, Japan, Russia, the UK, and the USA) has released a statement that "IT (information technology) empowers, benefits and links people the world over.....access to digital opportunities must therefore be open to all"(Countries, 2000). It is widely accepted that ecommerce provides new efficiencies within an economy, and also allows developing countries to participate in the global economy (Mansell 2001; Gibbs, Kraemer, and Dedrick, 2003). Some researchers have argued that developing countries have even a greater incentive for adopting ecommerce than developed ones. For example, Panagriya (2000, p. 5), states:

*"...Given that cost savings offered by Internet technology and the relative ease with which it can be provided, they (i.e., developing countries) can now skip several stages of technological development through which developed countries had to go. Stated differently, developing countries are much farther inside the technological frontier and, therefore, have larger potential benefits from moving to it."*

While extensive earlier research has examined ecommerce diffusion in developed countries, much of this work is not applicable to developing countries that differ from developed countries along several dimensions. There is limited earlier work that specifically addresses how developing countries can enable the adoption of ecommerce within their economies (Travica, 2002; Gibbs, Kraemer, and Dedrick, 2003). Much of this work is in the form of specific case studies relating to adoption within a particular country. For example, Travica (2002) studied the adoption of ecommerce in Costa Rica. Chen and Ning (2002) examined constraints on ecommerce adoption in China. Gibbs, Kraemer, and Dedrick (2003) studied the adoption of ecommerce in ten countries (five of which would be classified as developed) and present lessons learned from these case studies. Palmer (2000) examined the diffusion of ecommerce in Bahrain, and described barriers to adoption.

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In this work we extend earlier work presenting a comprehensive framework that can enable economies to facilitate ecommerce adoption, by simultaneously addressing three dimensions: a) the culture of the players in the economy, b) the policies proposed and enacted by the government in the economy, and c) the state of technology within the economy. We term this the CPT (Culture-Policy-Technology) framework. The main advantage of our framework is that it considers the interplay between three important dimensions, all of which have been separately considered in earlier works and shown to be important in the facilitation of ecommerce.

The rest of this paper is organized as follows. In Section 2, we present the CPT framework and explain how it relates to other existing frameworks that study ecommerce adoption. In Section 3, we describe how factors in the CPT framework affect business to consumer (B2C), business to business (B2B) and consumer to consumer (C2C) ecommerce. Section 4 contains recommended strategies that economies can use to enable ecommerce. We conclude in Section 5 with contributions and limitations of this work, as well as opportunities for future work.

## 2. The CPT (Culture-Policy-Technology) Framework

We first develop the three dimensions of the framework, and then compare it with existing frameworks.

### 2.1. Developing the Three Dimensions of the CPT Framework

#### 2.1.1. Culture

While numerous cultural differences exist between countries, and indeed within countries, we use the nation as the unit of study in this work. Further, we concentrate only on those cultural factors that *prima facie*, would come into play as a national economy moves towards ecommerce.

The level of trust between the players in an economy has been shown in numerous studies to affect the efficiencies of commerce (Burns and Brady, 1996; Palmer, 2000). In our context, we define trust along two sub-dimensions: a) the level of expected reliability that players place on each transaction within the economy, and b) the overall level of trust that players have in the institutions of the economy (such as banks, corporations and governmental institutions) in issues of redress of failed transactions.

Transactions in developed economies tend to perform more as expected by both parties (Endo, 2001). There is often also access to better redress, such as an efficient judiciary, efficient arbitration and reliable enforcement of redress decisions in the case of failed transactions.

A second aspect of culture is the level of corruption within a culture. Like trust, we define corruption along two sub-dimensions: a) petty corruption, which is illegal payoffs related to micro transactions within the economy, and b) institutional corruption, which is illegal payoffs and nepotism at the level of social networks within the economy.

It is widely accepted that petty corruption is much more rampant in developing countries. Singer (1991) asserts that, in developing countries, it is often an ordinary practice to hold out a hand for a bribe. Khera (2001) states that many developing countries deliberately pay their officials low wages, with the expectation that many micro transactions that these officials participate in will result in illegal payoffs for them. The question of institutional corruption being a differentiator between developed and developing economies is more open to debate. For example, Rosenthal (1997) asserted that Asian business leaders work in close groups to drive their national economies into chaos, and that nepotism is rampant in Asia. On the other hand, Khera (2001) highlights several examples of institutionalized corruption in developed countries: corruption at the corporate level, and in the influence of corporations on government policy. Carey and Simon (1992) highlight the commonality of insider trading and tax evasion in Germany, and also identify the corrupt methodology employed by Japanese firms when selecting developing countries for "foreign aid" and market domination.

A third aspect of culture in our framework is the patterns of communication that exist within the nation. The two sub-dimensions of patterns of communications that we isolate are: a)

the power distance (Hofstede, 2001) between members of an economy, and b) the richness of interpersonal communication usually accompanying each transaction.

We propose that cultures that have a greater power distance, *i.e.* greater hierarchy amongst members, will face greater difficulty when transacting on the Internet. For example, Asian and European cultures tend to be more hierarchical than the USA. Transactions on the Internet will be harder to complete in such cultures. In cultures with rich interpersonal communication (Lee, 2000), where face to face interaction consists of greater intensity of socializing, more verbal communication, more pronounced body language and greater time of communication, transactions on the Internet often lead to leaner communication, thereby creating barriers to adoption.

### 2.1.2. Policy

We divide the effects of policy into two sub-dimensions: a) the policies related to general trade and commerce in the economy, and b) the policies targeted specifically to enabling Internet usage and ecommerce. Examples in the first category include policies related to copyright protection of intellectual rights, taxation regulations across different parts of the economy and legislation for breach of contract in civil lawsuits. Examples in the second category include tax breaks for telecommunications equipment costs and state spending to promote Internet education and usage.

It is clear that economies with weak protection of intellectual copyright promote greater piracy and illicit sharing of copyrighted material such as music and films. An economy with lower taxes for commerce across different provinces, will be more likely to enable ecommerce (Geist, 2002). Stronger legislation for breach of contract in civil lawsuits also positively influences the level of comfort for ecommerce transactions. Investment by the government that promotes the purchase and usage of telecommunication equipment, as well as access to education to use the Internet all enable the adoption and usage of ecommerce in an economy (Mureithi, 2000).

### 2.1.3. Technology

As mentioned in Panagriya (2000), the Internet presents developing economies with the opportunity to leapfrog several generations of technology development, to gain equal access to world markets, as well as to increase the lifestyle of their citizens. We examine three sub-dimensions in technology that would critically influence the enablement of ecommerce: a) the level of hard wired telecommunications infrastructure that exists in an economy, b) the level of computer engineering expertise in an economy, and c) the level of wireless infrastructure within an economy.

While high levels of hard-wired infrastructure will clearly promote ecommerce, these are not usually found in developing economies. However, developments in the area of wireless networks now make it far cheaper to set up Internet networks, and to bypass the expensive setup of a hard-wired network. The availability of computer engineers clearly affects the robustness of the infrastructure, as well as the cost of access to the Internet, where higher availability would be clearly beneficial in both respects.

Figure 1 displays the three broad dimensions of the CPT framework, as well as the sub-dimensions. Having developed the CPT framework, we next compare it to existing frameworks.

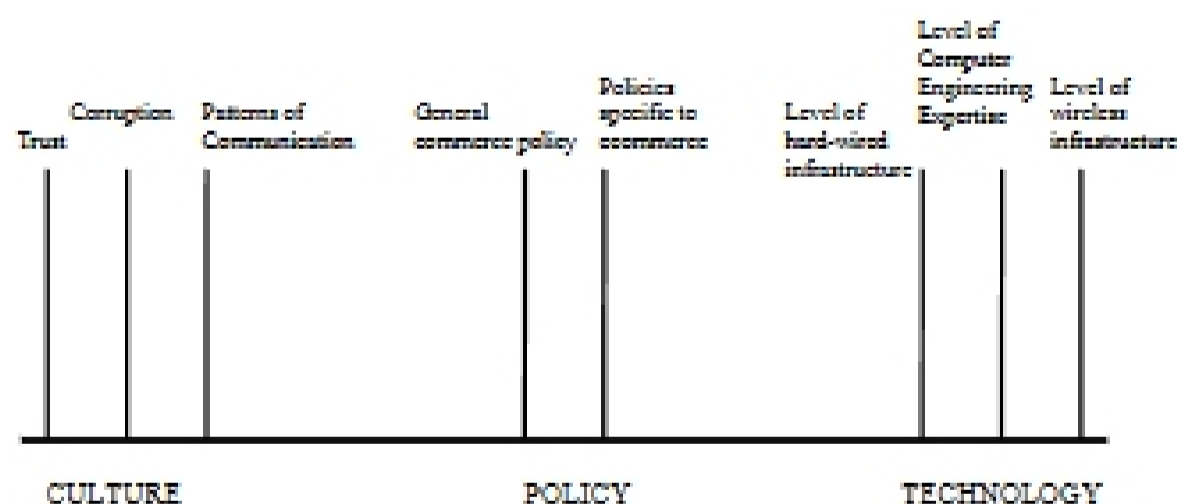


Fig. 1. Dimensions of the CPT Framework