

## **An Electronic Commerce Initiative in Regional Sri Lanka: The Vision for the Central Province Electronic Commerce Portal<sup>1</sup>**

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### **ABSTRACT**

This paper presents the findings from the first stage of a preliminary study which assessed the potential for an electronic commerce portal in Sri Lanka's Central Province. Sri Lanka is an island state of contrasts in terms of its electronic commerce and overall ICT capability. In the Capital of Colombo, ICT and electronic commerce capability are relatively sophisticated while in regional Sri Lanka even the most basic ICT infrastructure is almost non-existent and/or non-reliable. The proposed electronic commerce portal in Central Province is well aligned with the key strategic objectives of the E-Sri Lanka Initiative. The portal will be a resource enabler and facilitator for the adoption of electronic commerce by SMEs and MEs. It is also envisaged that the portal will facilitate the development of regional ICT capability as well as providing significant benefits to general community. This paper concludes with an outline of the infrastructure and implementation plan for the proposed electronic commerce portal in Central Province.

### **Keywords**

Electronic commerce, Information, Communications and Technology, Portal, Small Medium Enterprises (SME), Micro Enterprises (ME)

### **1. INTRODUCTION**

Electronic commerce is in the intermediate stages of adoption in Sri Lanka but this is not uncommon in the developing world. Indeed, few countries in the developing world are better placed than Sri Lanka for building a sound electronic commerce infrastructure. Sri Lanka possesses many of the key attributes necessary for the country to play a part, however small at first, in the global electronic commerce revolution. While it is true that Sri Lanka is still in a process of industrialisation and some would argue that this process should be given priority, the country cannot afford to ignore the emergence of the post-industrial, networked global economy. Even as the country continues to industrialise, it must look at opportunities beyond the horizon of industrialisation.

There are many challenges to be faced before electronic commerce will have any significant impact on the Sri Lankan economy. Telecommunications infrastructure is mainly limited to the major business centres like Colombo and Kandy. It is still relatively expensive to access the Internet, bandwidth speeds are limited and the demand for information, communication and technology (ICT) human capital is well above current supply. As a result,

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it is not surprising that the majority of businesses do not have an Internet presence and Internet usage is low in the general population. On the other hand, Sri Lanka is better positioned than many other developing countries to meet the challenges it faces. The country has undergone decades of trade liberalisation and has an open economy. During the 1990s, the country also had some spectacular spurts of economic growth, often in the same range as those of the so-called 'Tiger' economies of Asia (Athukorala & Rajapatirana, 2000). By the turn of the century, the manufacturing industry had become increasingly export-oriented and not as reliant as it once was on the fortunes of the traditional primary industries such as tea and rubber.

The process of industrialisation has been difficult so far, but Athukorala and Rajipatarana (2000) believe that the successes of the manufacturing industry make the sacrifices worthwhile. There have been gains in output, employment and productivity, not to mention export earnings. Attendant upon the process of economic reform, trade liberalisation and industrialisation there has been a telecommunications revolution. Telecommunications are the foundation for electronic commerce and for survival in the global economy. Clearly, this is a principle the government of Sri Lanka has understood for some time and their wide-ranging reform of the telecommunication industry has delivered some impressive results (Samarajiva, 2001). In just a single decade (the 1990s), the teledensity (phones per 100 people) of fixed phones increased fivefold, while the teledensity increase of mobile phones was nothing short of spectacular (Samarajiva, 2001). Of course, when compared to countries like the USA, Sri Lanka still has much to achieve. Samarajiva (2001) argues that a better basis for comparison would be to look at India, a country which has identified ICT and electronic commerce as key drivers of economic development. In 1999, Sri Lanka was ahead of India in both measures of teledensity given above, with a teledensity of 3.64 versus 2.66 for fixed phones and 1.22 versus 0.19 for mobile phones. (Samarajiva, 2001). Recent initiatives by the Sri Lanka Government emphasise the importance that has placed on the adoption of electronic commerce and Internet technologies for its business community and the general population. It is important that the initiatives of the government translate into programs which will encourage and foster the adoption of electronic commerce and Internet technologies. There is simply no other option if Sri Lanka is to move its economy forward towards greater participation in the knowledge based global economy that will become pervasive in the 21<sup>st</sup> Century.

In this paper we propose an electronic commerce portal based in Kandy which will be linked to service centres in surrounding major business districts of the central province. The main objective of the portal will be to facilitate the adoption and use of electronic commerce by SMEs and MEs. The portal will also foster and facilitate the development of ICT capability and knowledge in the region by both business and the general public. The portal is of course only a small element of what is ultimately required but it has the potential to mushroom to other parts of the country.

This paper has two fundamental premises. First, it is imperative that Sri Lanka build its ICT and electronic commerce capabilities. Second, of all the countries in the developing world, Sri Lanka seems to be one of the best placed to undertake such initiatives. Although the indicators mentioned above support this contention, this paper will use a more formal model to assess the state of e-readiness in Sri Lanka.

The structure of this paper is as follows. First, the term SME is defined in the context of Sri Lanka. Then, the challenges faced by developing countries in adopting electronic commerce is discussed and the current electronic commerce capability of Sri Lanka is outlined. Next, Sri Lanka's vision for an E Sri Lanka is presented. Then, the challenges that SMEs and MEs face in adopting electronic commerce are discussed given these business sectors are primary focus of the proposed electronic commerce portal. Next, the vision for the

proposed electronic commerce portal which addresses many of the key strategic elements identified in the E-Sri Lanka Initiative is discussed. Finally, a high level infrastructure and implementation plan is outlined for the proposed electronic commerce portal in Central Province.

## 2. DEFINITION OF SME/ME IN THE SRI LANKAN CONTEXT

SMEs are defined in a variety of ways by different countries using parameters such as number of persons employed, amount of capital invested, amount of turnover or nature of the business (Gamage, 2003). Not only do many countries apply different definitions of the term SME but, even within a single country, different regions and industries might have slightly different variations of the definition of an SME. In Sri Lanka there is no clear definition of an SME as government agencies use different criteria to identify SMEs (Cooray, 2003; Gamage, 2003). The main criteria used are the number of employees, the size of fixed investment, and the nature of the business and the sector, i.e. formal or informal, in which the industry operates (Cooray, 2003). There are a number of deferent terms used to identify the SME sector such as: Small and Medium Industries or Enterprises, Micro Enterprises, Rural Enterprises, Small and Medium activities, Cottage and Small Scale Industry.

On the other hand, the developing and developed countries with strong SME sectors have very clear definitions for SMEs (Gamage, 2003). For example, by using the number of employees and size of capital, the Japanese “New Small and Medium Enterprise Basic Law” (amended Dec. 3rd, 1999) clearly defines what constitutes SMEs. Similarly, by using the number of employees, amount of turnover and balance sheet total, the European Union (EU) has clearly defined SMEs in their member countries (European Union, 2003). As a developing country in the South Asia region, India defines Small Scale Industry (SSI) in terms of limits on investment in plant and machinery, excluding investment in land and buildings, testing equipments and anti-pollution measures.

It is imperative to have a clear definition for SMEs in attempting to develop the SME sector in Sri Lanka through electronic commerce initiatives. The World Bank defines enterprise size in Sri Lanka based on the number of employees: those with fewer than 49 employees are small; those with 50-99 employees are medium-sized; and those with more than 100 employees are large. The number of employees as the criterion for size appears reasonable because it distinguishes between enterprises regardless of the line of business. While the amount of capital investment would appear to be another eminently suitable criterion, its key weakness is that it must be revised frequently due to inflation (Ponnamperuma, 2000). For the purpose of clarity in this paper, the terms SMEs and MEs are defined in Table 1.

**Table 1: Definition of terms: SMEs and MEs (adapted from European Union, 2003; Gamage, 2003)**

<b>1. Micro Enterprise</b>	<ul style="list-style-type: none"> <li>• Within SMEs Category, micro enterprises are enterprises with fewer than 10 employees</li> <li>• Independent company</li> </ul>
<b>2. Small Enterprises</b>	<ul style="list-style-type: none"> <li>• Small enterprises have between 10 and 49 employees</li> <li>• Independent company</li> </ul>
<b>3. Medium sized enterprises</b>	<ul style="list-style-type: none"> <li>• Medium sized enterprises have fewer than 250 employees.</li> <li>• Independent company</li> </ul>

### **3. CHALLENGES FACING DEVELOPING COUNTRIES ADOPTING ELECTRONIC COMMERCE**

Despite the large sums of money that have been invested by donor countries and funding agencies like the World Bank into development of ICT industries in developing countries, there are relatively few success stories (Odedra-Straub, 2003). Indeed, some would argue that many of these so called ICT and electronic commerce initiatives have only advantaged the multinational corporations who have invested heavily in many of these developing countries because of the relatively low cost structures that exist for manufacturing and other selected industries (Odedra-Straub, 2003). In order to be of real benefit to a developing country, electronic commerce strategies and initiatives need to be carefully investigated to ensure that an electronic commerce project will provide tangible and sustainable benefits to the country as a whole. It requires a coordinated effort between government and business to deliver the required ICT infrastructure, skills sets and cost structures that will enable electronic commerce initiatives to flourish and prosper. Greater participation by the business community and general public is critical to the development of sustainable electronic commerce across a number of industry sectors. Developing countries are faced with a conundrum; on the one hand, there are enormous difficulties and challenges in moving an economy with an emphasis on agriculture and low cost manufacturing to a modern highly-interconnected networked and knowledge-based economy. On the other hand, if these countries do not respond, they are going to be left even further behind in the digital age.

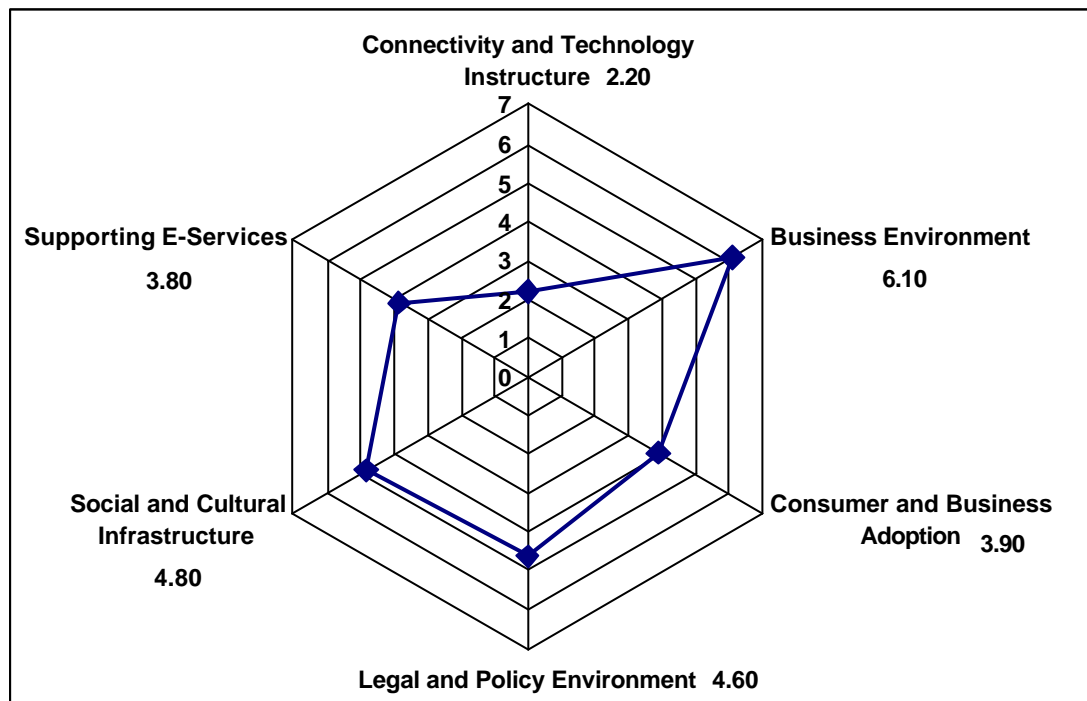
#### **3.1 Electronic Commerce Capability of Sri Lanka**

For developing countries such as Sri Lanka which are in the process of moving towards a modern economy, it is important to assess their electronic commerce capability when formulating a vision for an electronic commerce/business strategy. Despite the dot.com bust, the Internet will continue to reshape the way companies do business. There have been numerous studies conducted on the electronic commerce capability of countries based their comparative e-readiness. One of the most comprehensive ongoing studies of e-readiness is being conducted by the Economist Intelligence Unit (2003). The e-readiness survey comprises a number of key factors and related issues which, when measured out of a score of 10, give an indication of the level and degree of electronic commerce adoption. These are presented in Table 2:

**Table 2 Overview of E-Readiness Factors and Related Issues (Adapted from Economist Intelligence Unit, 2003)**

<b>E-Readiness Factors</b>	<b>Description of E-Readiness Factors and Related Issues</b>
<b>Connectivity and technology infrastructure</b>	Measures access that individuals and businesses have to basic fixed and mobile telephony services, personal computers and the Internet. The affordability, quality and reliability of service are all functions of the level of competition in the telecoms market
<b>Business environment</b>	Strength of the economy, political stability, the regulatory environment, taxation, competition policy, the labour market, the quality of infrastructure, and openness to trade and investment. The resulting business environment rankings measure the expected attractiveness of the general business environment over the next five years (2003-07).
<b>Consumer and business adoption</b>	How prevalent e-business practices are in each country? What share of retail commerce is conducted online? To what extent is the Internet used to overhaul and automate traditional business processes? How are companies helped in this effort by the development of logistics and online payment systems. Availability of finance and state investment in IT?
<b>Legal and policy environment</b>	E-business development depends both on a country's overall legal framework and specific laws governing Internet use. How easy is it to register a new business, and how strong is protection of private property, in particular, intellectual property, which can easily fall victim to digital-age piracy? Governments that support the creation of an Internet-conducive legal environment—both through policy and enforcement—get high scores. Those more concerned with censoring content and controlling the web score lower. Telecommunications regulation, ICT trade policy:
<b>Social and cultural infrastructure</b>	Literacy and basic education are preconditions to being able to navigate the web. In addition, the rankings consider a population's "e-literacy", its experience using the Internet and its receptivity to it, and the technical skills of the workforce. Because Internet business involves risk-taking, the rankings also assess the national proclivity to business innovation and entrepreneurship.
<b>Supporting e-services</b>	No business or industry can function efficiently without intermediaries and ancillary services to support it. For e-business, these include consulting and IT services, and back-office solutions. The rankings also take into account whether there are consistent, industry-wide technology standards for platforms and programming languages.

The rankings of the e-readiness survey have become an established benchmark for countries seeking to harness the Internet's potential to drive business efficiency, improve the provision of public services and encourage the integration of local economies with the global economy. E-readiness is shorthand for the extent to which a country's business environment is receptive to Internet-based opportunities. For Sri Lanka's current state of e-readiness, see Figure 1.



**Figure 1: Sri Lanka's Current State of E-Readiness (Source: Economist Intelligence Unit 2003)**

Sri Lanka, with an overall score of 4.1, would appear to be somewhere below the median in terms of overall e-readiness. By comparison, countries like Sweden and Singapore have high overall e-readiness ranking scores of over 9. The current situation of electronic commerce in Sri Lanka was assessed in terms of infrastructure, financial framework and the legal framework. The main barriers to the adoption of electronic commerce were identified as being: low teledensity, an outdated legal infrastructure, a poor national communications backbone, prohibitive cost of Internet access, a general low usage of computers and a lack of skilled human resources in the ICT industry (Ratnayake, 2001).

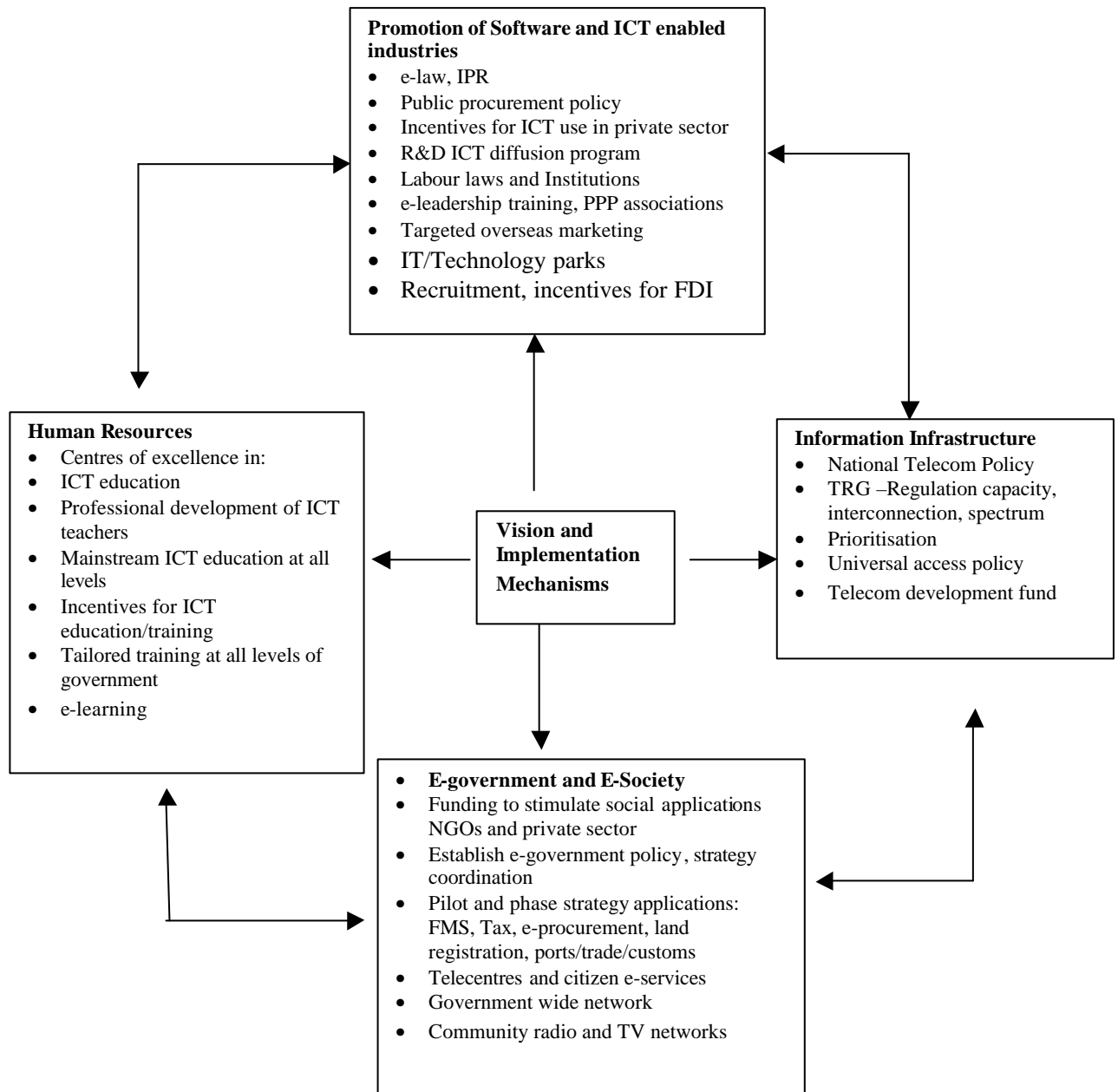
A well thought out and properly designed plan to develop the somewhat deficient ICT sector and supporting industries with the full backing of government will reap Sri Lanka enormous benefits by encouraging increased business and consumer adoption of electronic commerce. The steps being taken to address deficiencies in these areas are: the development of policy that will facilitate increased ICT capability, adoption of liberalized procedures for licensing ISPs, a focus on favourable tariff structures in response to technological development, priority given to the development of telecommunications infrastructure in the rural sector, plans to set up telecentres with ICT/Internet facilities, and the end of the 'International voice monopoly' by opening the telecommunications industry to competition.

### 3.2 E Sri Lanka: An Electronic Commerce Vision for Sri Lanka

A program named the 'E-Sri Lanka Initiative: A Roadmap for the Strategic Vision for ICT development in Sri Lanka' was launched in late 2002 in response to the challenges discussed above. The E-Sri Lanka Initiative is a visionary program and an investment in the future of the Sri Lankan ICT sector. The government expects that the initiative will help address a problem faced by a number of developing countries in the South East Asia region: "We have the human resources, but it is converting that into real economic growth that is the challenge"



(United World, 2002). An outline of the strategic vision for E Sri Lanka is presented in E-Sri Lanka (2003).



**Figure 2: Strategic ICT Roadmap: E Sri Lanka Initiative (Adapted from E Sri Lanka Website, 2003)**

The roadmap (Figure 2) outlines the five-program strategy to achieve the vision, which will be implemented by 2007. The emphasis of the program is on the following key areas: information infrastructure, human resources, promotion of software and ICT-enabled industries and e-government / e-society. Five programs are envisaged over the next five years to achieve this vision:

1. Build implementation capacity;
2. Build national information infrastructure enabling environment;

3. Develop ICT human resources;
4. E-Government delivering citizen services and
5. Use ICT as a key lever for economic and social development.

In our opinion, an electronic commerce portal in central province can contribute significantly to the overall vision and to the five individual programs in the E Sri Lanka Initiative (Sri Lanka ICT Strategy E-Sri Lanka, 2003).

### **3.3. Developing ICT Infrastructure to Underpin Electronic Commerce Initiatives in Sri Lanka**

The project we propose in this paper targets the development of infrastructure to support critical electronic commerce initiatives, but this can not be done in a social and cultural vacuum. The project will focus on utilising some of Sri Lanka's national strengths and assets, including:

- Its strategic location, which enables it to act as South Asia's commercial hub for financial services, shipping, aviation and trade;
- Its natural beauty and environmental diversity;
- Its strong human resource base; and
- Its strong private sector.

Through the application and diffusion of digital technologies, Sri Lanka can achieve considerably higher levels of social development and strong sustainable and equitable economic growth. There are eight factors critical to an Information Communications and Technology (ICT) strategy which will underpin any electronic commerce initiatives: (Sri Lankan Development Gateway, 2003)

- Developing human capacity: skills and knowledge;
- Cost effective and ubiquitous ICT network infrastructure;
- Sustainable growth of the domestic ICT industry;
- Strong content and application development for domestic and international markets;
- Rapid diffusion and adoption of ICTs through the economy;
- Government: a model user of ICTs;
- Enhanced innovation and R&D capabilities; and
- Proactive, coordinated, and transparent policy and implementation processes.

The proposed electronic commerce portal in Central Province will be designed based on these key factors with a primary focus on facilitating the adoption of electronic commerce by SMEs and MEs.

### **4. CHALLENGES FACING SMEs AND MEs IN THE ADOPTION OF E-COMMERCE**

The adoption of electronic commerce presents a major challenge to the SMEs and the MEs. These types of organisation constitute a significant portion of all businesses in Sri Lanka. Indeed, there is a global trend whereby SMEs and MEs are becoming increasingly more important in terms of their contribution to the economy, particularly in terms of wealth and job creation (European Union, 2003). SMEs and MEs have struggled to adopt electronic



commerce because these types of businesses are typically so entrenched in and preoccupied with the day-to-day running of business that they have little time and/or resources to devote to the training and learning required to facilitate the adoption of electronic commerce. Hence, governments have a key role to play in enabling SMEs and MEs through information and training seminars and sponsoring of new electronic commerce initiatives. Such a government initiated strategy allows SMEs and MEs to participate more fully in the networked economy.

A regional survey of SMEs in the South East Asia found a number of key drivers and inhibitors influencing the adoption of electronic commerce (see Table 3).

**Table 3: Factors affecting the adoption of Electronic Commerce in SMEs in South East Asian Region (Adapted from Asia Foundation, 2002b)**

Drivers
<ul style="list-style-type: none"> <li>• <b>Communication with customers and business partners</b> is the driving force behind adoption of E-Commerce.</li> <li>• <b>SMEs consider ease of interacting with customers/business partners as most important aspect of electronic commerce</b> with email and business research the most common application of Internet use</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Businesses targeting overseas customers or relying on overseas business partners</b> appear to experience increased incentives for getting online.</li> <li>• <b>Firms selling overseas or doing business with overseas business partners</b> have higher levels of email use and website presence</li> </ul>
<ul style="list-style-type: none"> <li>• <b>SMEs are willing and able to pay for the Internet</b> if they see immediate relevance to their business.</li> <li>• <b>Companies that see profitability in electronic commerce</b> are clearly willing to invest in hardware and connectivity required for electronic commerce capability.</li> <li>• <b>Businesses that are in a position to benefit from electronic commerce</b> will plan for IT investment as they would for other business expansion plans.</li> </ul>
Inhibitors
<ul style="list-style-type: none"> <li>• <b>Infrastructure and access speeds remain serious barriers for small businesses</b>, particularly outside of urban areas.</li> <li>• <b>Access to Internet in terms of landline telephone access and availability of ISP providers is problematic</b> for SMEs outside of major cities. Internet users in provincial cities may pay higher access fees than larger cities.</li> <li>• Most frequently cited reasons for non-use of Internet for the <b>insufficient number of available telephone lines and the high cost of telephone facilities</b>.</li> <li>• <b>Speed of the connection was also a major concern</b> as many Internet users found the service slow or very slow with some businesses avoiding online business research or downloading documents due to slow speed and frequent disconnections</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Security concerns and banking regulations</b> limiting adoption of online payments/transactions.</li> <li>• <b>Business transactions continue to be completed offline</b> even by SMEs who use the Internet regularly.</li> <li>• <b>Payment for sales generated online is predominately by bank transfer, followed by cash.</b> Sri Lanka, however, was the exception with 60% of users equipped for credit card payment of online transactions</li> <li>• Companies as well as their customers were reluctant to purchase online because of the <b>risk of credit card fraud</b> and the <b>concern that products will be substandard or not delivered</b></li> <li>• <b>Security concerns were a major factor in the adoption of Internet banking</b></li> </ul>

The market is clearly driving the adoption of electronic commerce by SMEs. Cost and technical ability do not appear to be major barriers. The findings suggest that a number of regulatory and legal changes will be important for the purposes of accelerating the adoption of electronic commerce by SMEs. These include:

- Measures to protect online customers from fraud.
- Changes in banking laws will be necessary in some countries to ensure that credit card transactions and foreign currency transactions are affordable and enforceable.
- Governments and donors should be wary of merely subsidizing SME adoption of technology without some buy in and commitment from the SMEs.
- Continued deregulation of the telecommunications industry will be important in lowering costs and increasing the physical access to areas outside of major cities.

#### **4.1 Challenges faced by SMEs And MEs Adopting Electronic Commerce in Sri Lanka**

In a study of Sri Lankan SME capability to adopt electronic commerce conducted by the Sri Lankan Business Development Centre (2002a), key positive factors facilitating the adoption of electronic commerce by SMEs were identified as:

1. Level of service provided by local ISPs was found to be satisfactory (although slow response times and line connection-interruptions are common because of poor telecommunications infrastructure).
2. Business research on the Internet is very well established in Sri Lanka.
3. Development and maintenance of Internet applications is comparatively cheap in Sri Lanka due to low labour costs.

The report found that the negative factors inhibiting the adoption of electronic commerce far outweighed the positive factors. These were:

1. SMEs are currently not prepared to adopt electronic commerce as a serious business concept.
2. Overall lack of knowledge and awareness about the benefits of electronic commerce by SMEs.
3. Limited SME exposure to IT products and services.
4. Poor English and lack of staff with IT capability.
5. Web-based selling of goods is not practical at present.
6. Web-based selling of services (tourism etc) is yet to gain widespread acceptance with SMEs.
7. The use of Internet banking and web portals by SMEs is very limited.
8. Telecommunications infrastructure is not adequate for electronic commerce activity supporting high volumes of transactions. Non-availability of communications (bandwidth problems etc) is a major concern for majority of SMEs.
9. Online payments remain an obstacle to electronic commerce since the credit card payments online in Sri Lanka are governed by a limit of US\$500 – US\$1000. Therefore, it is difficult to purchase high value goods and services online or to purchase large quantities of goods and services online.

Another study of Sri Lankan SME's ICT capability provides further insights into the challenges that SMEs face in adopting electronic commerce and provides further strong

justification for the establishment of an electronic commerce portal in Central Province (Greenberg et al., 2002). Some key features of the study are:

**Overall impressions** from the report are that Sri Lanka is a country of achievements and contrasts. Its quality of life indicators are comparable to countries with twice Sri Lanka's GDP. It has a modest, but thriving ICT industry and boasts many state of the art ICT capabilities. At same time, it is primarily a rural, poor country where a large percentage of the population do not have access to any modern ICT capabilities. Access to telephone and electricity is rare for a large part of the population. At all levels of aggregation, statistics about any aspect of ICT are misleading. Most importantly at present, virtually all ICT activity is centred in Colombo with small pockets of ICT activity in Kandy and Galle. While there is a desire to spread ICT development over a wider geographic area than Colombo, it is not going to be an easy task. The regions outside of the urban areas are poorly served with electricity and telecommunications. Therefore, given the present environment, it is not surprising that in the rural areas, there is a shortage of people with ICT skills in industry and education.

**Human Resources and the Education Sector.** Education has always been a priority in Sri Lanka which has one of the highest literacy rates in the South Asia region. However, for ICT development and growth, general literacy is not sufficient. In order to develop its ICT capability, Sri Lanka needs three levels of ICT skills: (a) people on the ICT supply and demand sides with professional skills (b) people with basic skills to use computers and networks in their workplace or home; and (c) large remainder of the population with increased ICT awareness that will facilitate the adoption of ICT so it permeates all aspects of work and daily life.

**Telecommunications** are the cornerstone of the current technological revolution. Although Sri Lanka has taken positive steps to allow competition in its formerly monopolistic environment, there are still significant impediments to further development. In the areas where competition has been allowed, Sri Lanka Telecom and its competitors have been innovative and aggressive in the delivery of a range of services at competitive prices. But services and prices still lag in the areas where monopoly has been preserved. Internet access is growing but not at the rate which encourages Internet usage by the general population. At present, the major inhibitor to the growth in Internet usage is the high per-minute cost of voice telephone usage.

**Electrical power, its availability and distribution is still a problem in Sri Lanka.** Seventy six percent of power is generated by hydroelectric facilities and there has been a drought for several years. There are daily rotating power outages with power being cut for six hours per day. This has severe implications for maintaining ICT facilities.

**ICT Industry.** The software and telecom sectors of Sri Lanka's ICT industry are thriving, despite many problems and a relatively small size. Some of the problems facing the ICT industry include: lack of transparency in Government acquisitions (largest prospective client), lack of moderately priced international bandwidth; lack of trained ICT professionals; a lack of management personnel knowledgeable about ICT; and a tax structure that does not reward local sales. The use of ICT in the commercial sector is irregular. Some financial institutions have invested heavily in ICT and as a result are leaders in the use of ICT in Sri Lanka. Other sectors are far behind and the use of ICT is sporadic at best and ICT in general is poorly integrated with the business in these sectors.

The issues identified in these empirical studies of factors affecting the adoption of ICT and electronic commerce by SMEs need to be considered in formulating the strategic vision for the Central Province electronic commerce portal. In particular, the government of Sri Lanka needs to consider the role it will play. While the government has been involved in some previous initiatives, we argue that a more focused approach is required. An example of

an initiative already in place is the SME development portal that has been set up in Colombo (SMED Portal, 2002). Unfortunately, the portal gives the impression of a lack of dynamism. It has very limited content and is largely a promotional site which does not appear to be kept current. This existing portal could, however, be revitalised and become an integral part of a network of portals.

While the reports and studies we have mentioned highlight the significant challenges faced by SMEs and MEs in adopting electronic commerce, there are significant opportunities to address these challenges. Our vision, which will be outlined below, is a small project which is dynamic, and deeply rooted and supportive in improving the economic well-being of the community.

## **5. STRATEGIC VISION FOR THE CENTRAL PROVINCE ELECTRONIC COMMERCE PORTAL (CPEV)**

It is clear that no single project will miraculously transform Sri Lanka's position as regards electronic commerce. In order to improve Sri Lanka's global position in the electronic commerce arena, many projects and initiatives will be required. These will vary in their scope, cost and impact. We propose a highly focused project with the following salient characteristics:

- A regional focus. SMEs and MEs form a significant segment of the regional economy in Sri Lanka. The uptake of electronic commerce has the potential to increase the access to information and improve the ability of these types of enterprises to compete in a global market place.
- High levels of community involvement. The portal will in effect belong to the community and we would hope that the community will in turn be committed to the survival and enhancement of the portal.
- A consultative approach whereby the rationale for the construction of the portal will emanate from the community. Even the technical infrastructure we tentatively propose in this paper will be adapted so as to best serve the needs of the community.
- Limited scope and cost but the potential for significant impact in the Central Province region and beyond.

The proposed strategic vision for the Central Province in Sri Lanka will present a tremendous opportunity to initiate and enable the uptake of electronic commerce in the key regional centres in the Central Province, namely: Badulla, Kandy, Matale, Nuwara Eliya and Polonnaruwa. Figure 3 depicts the geographic coverage of the Central Province electronic commerce portal.





**Figure 3: Provinces of Sri Lanka (Adapted from University of Texas, 2003)**

The portal we propose also has the potential to serve the community in a variety of ways not directly related to electronic commerce, for example as a vehicle for the dispersion of information about community issues. It is our hope that the portal will in the longer term serve as a model for future electronic commerce initiatives.

The proposed electronic commerce portal which will be based in Kandy, will provide online resources for education, training and support services to facilitate electronic commerce initiatives within the Central Province. The focus of the CPEV would be on B2B, B2C and B2G electronic commerce initiatives that will create an environment to foster entrepreneurship and innovation in existing and new business ventures that can utilise ICT capabilities.

The development of this portal will allow for the establishment of strong Telecommunications and ICT linkages between Colombo and Kandy which over time has the potential to expand ICT capability and knowledge throughout other regional business centres of Sri Lanka. The Portal would adopt an approach similar to the NOIE electronic commerce portal in Australia (NOIE, 2003) which has been very successful in fostering the adoption of electronic commerce by SMEs and MEs. The strategic framework of the CPEV would foster electronic commerce initiatives under the following broad categories:

- Improving access, participation and skills;
- Adoption of e-business;
- Developing confidence, trust and security;
- Developing an environment for ICT industries;
- Initiating e-government strategies and implementation; and
- Investigating international dimensions.

This will be achieved by providing electronic commerce education, training and support services. It is envisaged that regional centres with local area networks and training and support staff will be the access points for the resources of the CPEV. The regional centres will provide the necessary physical resources to assist local regions in adopting electronic commerce initiatives. It would also important for the Sri Lankan Government to provide seed funding for electronic commerce initiatives. Individual electronic commerce projects will be considered for seed funding after being assessed by a panel of government officials and a panel of international experts. Consideration would be based on the merits of the project, benefits to region and likelihood of success.

### 5.1. Implementation Phases of CPEV

In order to realise the strategic vision of the CPEV, four phases have been identified (See Table).

**Table 4: Phases of Central Province Electronic Commerce Portal**

CPEV Phase	Outcomes
1. Feasibility study	CPEV formal proposal
2. Development and Implementation of CPEV Portal and two pilot centres	Implementation of CPEV Implementation of two pilot regional centres
3. Staged development of other regional centres	Implementation of other regional centres
4. Ongoing improvements, refinement and maintenance of CPEV and regional centres concepts	Supporting a number of live electronic commerce projects in Central Province

#### 5.1.1 Phase 1: Feasibility Study

A feasibility study will be conducted by a multidisciplinary team of experts from the Faculty of Business in cooperation with the National Institute of Co-Operative Development (NICD), Polgalla. This team expects to consult with all the key stakeholders in the project with particular emphasis on input from business leaders in the Central Province. An e-readiness



survey will then be conducted in Central Province to assess the current state of e-readiness and to identify the opportunities and challenges that SMEs and MEs face in adopting E-Commerce. Thereafter, a series of in depth interviews of relevant stakeholders will be undertaken to validate the e-readiness survey findings. This research effort will assist in developing a set of business objectives that are relevant to the needs of industry and businesses in the Central Province.

The feasibility study would formulate the business objectives of the CPEV and regional centres and outline technical requirements for the project overall. A detailed project proposal for the CPEV would be the outcome of the first phase of the project. The project proposal would outline CPEV as an electronic commerce/business enabling concept; provide a comprehensive set of project goals and an evaluation methodology; and develop a detailed budget with cost/benefit analysis. It is envisaged that there will be a number of potential spin-off projects once the CPEV is established and gains momentum. These could include eco-tourism initiatives, education and training opportunities and business consultancies.

#### *5.1.2 Phase II: Development and Implementation of CPEV and Pilot District Centres*

The second phase of the CPEV will focus on the development and implementation of the CPEV and two pilot regional centres which will provide access points for the business community to receive electronic commerce education, training and support services.

#### *5.1.3 Phase III: Staged Implementation to Other Regional Centres*

The third phase is a staged implementation to other regional centres based on experience gained from the implementation of the two pilot regional centres and meeting the essential needs of the business communities in each particular region.

#### *5.1.4 Phase IV - Ongoing Improvements, Refinement And Maintenance of CPEV and Regional Centres Concepts*

There will need to be ongoing enhancements and maintenance to the CPEV and the delivery of education and training programs and support services in the regional centres. It is envisaged that CPEV will provide the impetus for initiation of a wide range of electronic commerce projects in various industries and businesses in Central Province. It is expected that there will significant benefits to industries and businesses from the streamlining of business processes. This will result in increased competitiveness and the capture of new international markets in niche areas where Sri Lanka has a competitive advantage. Hence, the concept of CPEV has the potential to create new wealth for the Central Province by fostering electronic commerce initiatives that use the Internet as an information, communication, transaction and distribution channel at regional, national and international levels.

#### *5.1.5 Deliverables*

The CPEV will foster and support electronic commerce initiatives in Kandy and in the four other regional centres. Each of four regional centres will have a local area network which will be the access point to the central database of the CPEV based in Kandy. The overriding vision of the CPEV will be to promote and foster electronic commerce initiatives in Central Province. The emphasis will be on B2B electronic commerce initiatives that will increase competitiveness of the major industries and businesses in Central Province given that Sri Lanka is in the transition stage from a developing country to a modern developed economy.

The CPEV will provide businesses and the general public with the opportunity to access electronic commerce information and services and the ability to connect and promote businesses on a regional, national and international scale. The web portal concept can also be used to develop the eco-tourism industry by promoting globally the relatively untouched

natural attractions in the regions. The role of CPEV will be to provide a centralised repository of information and services that will facilitate the adoption of electronic commerce initiatives in the different regions of Central Province.

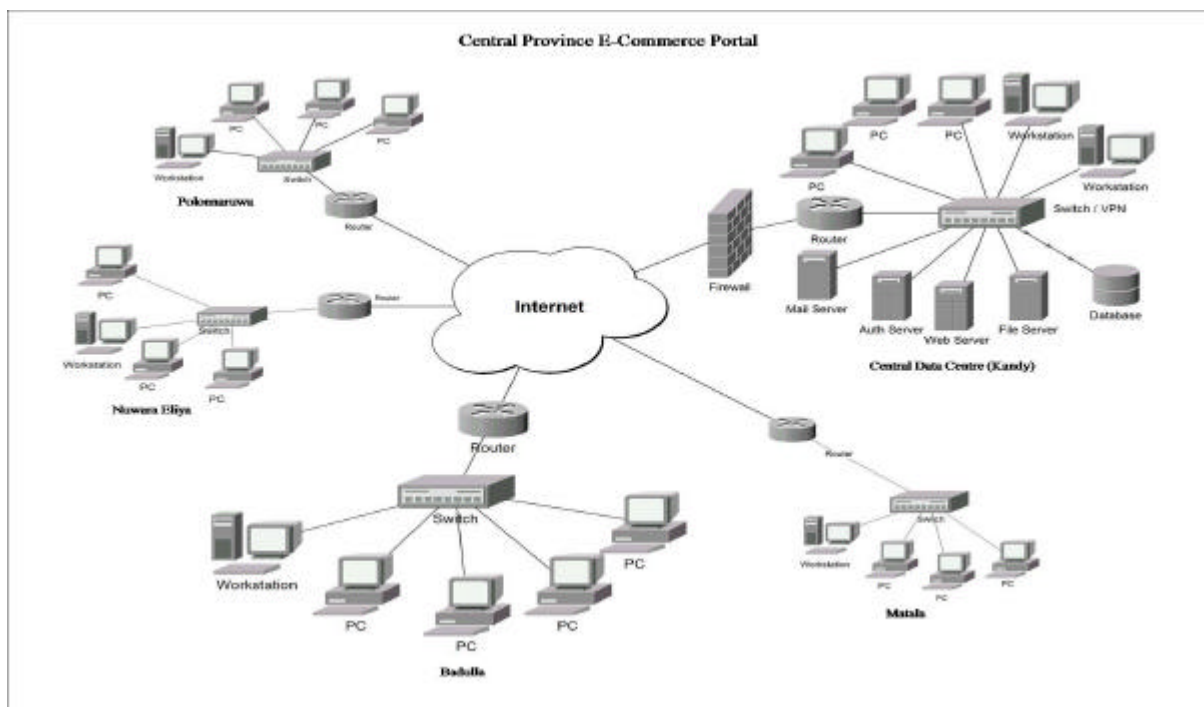
The regional centres would play a key role in facilitating the uptake of e-business enabling SMEs and MEs in various regions of Central Province to streamline business processes and to do business more competitively at a national and international level. This will create new employment opportunities and foster sustainable regional economic growth. The regional centres will provide access points to the CPEV for regional industries and businesses and provide the facilities to deliver education and training programs to develop the ICT skills of SMEs and MEs and the general population. The concept of regional centres will have additional benefits in generating employment and development of ICT skills in each region. Each region centre would require a number of staff to facilitate execution of electronic commerce initiatives of the CPEV.

## 5.2. Technical infrastructure

The following factors pertaining to the requirements were considered during the development of the summary technical plan:

- Before, during and after the establishment of the technical architecture, specialist staff will work with local communities to determine requirements.
- The overall technical infrastructure for each centre will be adaptable to a wide range of requirements but we will include a contingency reserve to cover the probability that some centres will have unusual requirements.
- A single, central point of focus will be set up for the purposes of coordination. This centre will provide database services, Web services and troubleshooting.

Figure 4 is a diagrammatical representation of the technical infrastructure of the electronic commerce solution in Central Province.



**Figure 4: Proposed Technical infrastructure for Central Province Electronic Commerce Portal**

### 5.2.1 Central Data Centre

A centralised data centre will be established to act as a point of coordination for the network of local centres spread throughout Sri Lanka. This centre will service all data requirements, Web services that need to be centralised, troubleshooting and consultancy. In this centre, we envisage powerful servers and databases. A potential use of this centre would be, for example, a national accommodation database or perhaps networks of rural skills.

### 5.2.2 Local Centres

Each local centre will contain a number of PCs. Each PC will be hooked into the Internet and will have a variety of business-related software loaded. Each centre will have a number of specialist staff who will assist the local population in identifying business opportunities for SMEs and MEs to use and gain value from the Internet as an information, communication, distribution and transaction delivery channel. These centres would also play a key educational role in the local community providing resources for ICT training and generally raising community awareness of the potential of ICT. These centres can also be used as point of concentration for community development projects. It is essential that local communities be involved as key stakeholders in determining what content and applications will meet their needs and challenges they face. Essentially, these will be information centres staffed by people who are able to offer the required expertise to local communities. The technical infrastructure is merely a facilitator.

This plan does not make provision for the establishment of Internet access. It is assumed such access will be available. Using the Internet as a conduit, each centre will also have access to the central database. This database will contain information of direct relevance to countrywide initiatives. Local centres may also choose to store local information in this database.

## 6. CONCLUSIONS

Sri Lanka is a country that has significant human and natural resources, and is well positioned geographically in the South Asian region to become a major financial and trade centre. However, it is critical for the overall strategic vision of the country that it makes the move towards a modern networked and knowledge-based economy. SMEs and MEs form a significant portion of the economy and it is important that they are able to adopt electronic commerce and develop ICT capability if the economy in Sri Lanka is to grow and develop and make the transition to a modern economy. The CPEV concept has the potential to address the key aspects of the vision of the E Sri Lanka Initiative and facilitate the adoption of electronic commerce and the development of ICT capability in SMEs and MEs. This will in turn generate sustainable growth and create economic wealth for the general public in the Central Province.

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