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ICT Services: Developing Potential – Opportunities and Strategic Implications

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ICT SERVICES: DEVELOPING POTENTIAL – OPPORTUNITIES AND STRATEGIC IMPLICATIONS[1]

"Any activity where we can digitize and decompose the value chain, and move around, will be moved around." –
Jaithirth "Jerry" Rao, CEO MphasiS[2] (as quoted in Friedman, 2005[3])

1. Introduction

As in the real world, the digital economy has also thrown up its share of shifting buzzwords. From 'e-Commerce' and 'dot.com' at the turn of the century, the last couple of years have thrown up 'ICT' as the all encompassing technology and for business the newest buzz is undoubtedly 'outsourcing'. Rarely has a single trend impacted global business and industry these last few years as much as outsourcing or 'off-shoring' as it is referred to in the US. Coming along with the compulsions of globalisation mandated by the WTO agreements it has helped develop new markets, improved bottom lines, expanded the range of goods and services and pulled the planet together into a tighter-knit community[4]. This opportunity of outsourcing from the perspective of developing economies is ICT services export.

Realising the potential of information and communication technologies (ICTs), or 'E' as they are familiarly referred to, many developing countries worldwide are becoming active or interested in ICT services exports. Based on the experience in this area of some of the successful countries especially India, this paper analyses the success and presents an ICT services e-Preparedness matrix that can be used as a descriptive / analytical framework to both serve as a comparative model as also a prescriptive tool for gap analysis from which guidance can be derived on the strategies and interventions that other developing countries may need to adapt. Besides demonstrating the value of such a framework for conceptual analysis, this approach has practical value for policy makers, export promotion agencies and enterprises involved in ICT sector strategy formulation.

For developing country strategy makers, the export of ICT services are of special interest for a range of important reasons.

- They represents in a nutshell several of the features associated with globalisation.
- They are a success story of the digital age and their principal beneficiaries are developing countries.
- They are knowledge oriented and human capital intensive services
- Being knowledge based they are key to competitiveness for the whole economy
- ICT services export products and services can be developed much more rapidly than manufactured product exports
- In developing economies, a services focus provides unparalleled economic development opportunities
- For their success in any developing or transition economy, the State has to actively assist in providing the right e-environment to ensure the growth of the industry.

What are the ingredients that have made ICT service exports in some developing countries such as India so successful with national and global impact? Can these be replicated? What collective role can industry, workforces, educators and government policymakers play in creating such successful services in their own countries?

These are some of the intriguing and high-stakes questions facing players and strategy-makers in the cutting edge of information and communication technologies.

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[1] Alwyn Didar Singh is an author and International expert in ICT and e-Commerce and has been working with ITC as also the Executive Forum since 1999. Christina Shandor who interned at the Executive Forum secretariat over the summer of 2005 provided valuable data for the writing of this paper. Members of the Executive Forum network also provided inputs and comments.

[2] MphasisS, India is one of the largest Business Process Outsourcing (BPO) global service providers.

[3] Friedman, Thomas L., 2005, The World is Flat: A Brief History of the Globalized World in the 21st Century, Penguin, London

[4] Nash, Tony, 2005, China or India? It's China and India, The Economic Times, New Delhi, 12th May 2005.

This paper attempts to address some of the relevant issues such as:

- What are ICT services? What is its definition in the context of this paper?
- How important are ICT services for business and export?
- Is it a global, national or enterprise level issue?
- What are the Key Factors which will help to identify what works and what does not work with respect to the ICT services export?

1.1. ICT and globalization

There is an important and synergetic relationship between the information and communication technologies (ICTs) and globalization. The accelerating flow of globalization is enabled by information and communication technology, or ICT. The ability to connect huge networks of individuals and institutions across geographic boundaries at low or negligible marginal cost gives the process of globalization tremendous scale and momentum. ICT is therefore a critical driver of globalization.[5]

Recognizing the potential and benefit that ICT can unleash large scale social and economic progress through its multiplicative network effects results in viewing ICT as a positive externality. This implies for developing and transition economies - promoting the adoption and productive use of ICT. The very foundation of globalization rests on the system of 'connections' and networks that ICT enables. Promoting equitable and development friendly globalization entails extending these 'connections' to all aspects of the socio-economic fabric of the economy including and especially its external and exporting sectors and bringing them into the global knowledge sharing and communication network.

ICT offers a unique chance for countries to free themselves from the limitations of geography. Goods and services from these countries can be offered on the global market as efficiently as those from any other country through the use of ICT. The ever-developing ICT has fundamentally changed the nature of global relationships, competitive advantage and opportunities for economic and social development. ICT offers many developing countries an opportunity to leapfrog from the production of agriculture and commodities to higher value added knowledge-based services, bypassing several layers of the industrialization stage. Those developing countries that are most effective in moving toward a knowledge-based economy have the prospect of competing with the advanced economies in global markets.

There is now clear evidence that enterprises can benefit considerably from ICTs, so the issue is particularly relevant to developing economies. However, in addition to creating new opportunities for developing countries to increase their competitiveness, globalization simultaneously creates a host of new risks. Although countries can potentially gain from ICT, obstacles such as lack of infrastructure and access stand in the way.

The business case for emphasizing ICT reflects the view that globalization is associated with a knowledge-based economy. For poor and developing countries, the knowledge economy is a potential source for job creation, wealth generation and redistribution, economic development and prosperity, and global competitiveness. To take advantage of the knowledge economy created by the globalization of ICT, developing countries need comprehensive ICT oriented national development policies, strategies, and plans.

2. Definition and Characteristics of the ICT Sector

Information and Communication Technologies are usually referred to and imply a more holistic and yet singular concept of 'ICT' or 'ICTs'. By definition they include information technology (IT) and the digital technologies as also the communication technologies of telecommunication and other digital communication technologies.

Wikipedia, one of the most popular free encyclopaedias on the Internet, defines **Information technology** (IT) or (as it is now more widely referred to) **information and communications technology** (ICT) as the technology required for information processing. In particular the use of

[5] ForeignAID.com ICT Services Whitepaper

electronic computers and computer software to convert, store, protect, process, transmit, and retrieve information from anywhere, anytime.[6]

The definition of 'ICTs' in literature varies considerably, causing considerable confusion. In development literature, for example, they generally include 'old' technologies such as broadcast radio and voice telephony. Analysts of the 'new economy' are more likely to mean only 'new ICTs', based on digital or computer technology. For discussion purposes, it would be perhaps easier to use the more generic, less technology-specific definition put forward by Duncombe and Heeks (1999): "electronic means of capturing, processing, storing and disseminating information".

Variations exist within the development agencies and donor community between those who broadly focus on:

- **ICTs as a TOOL/MEANS** to help achieve development and poverty reduction goals, including education, health, macroeconomic and budget management, gender equality and poverty monitoring
- **ICTs as a SECTOR** in itself which needs to be developed, including through the support of ICT infrastructure development
- **ICTs as an OVERARCHING PLATFORM** for development and poverty reduction, that requires enabling strategy, policy and regulatory regimes.

The focus of this paper is on ICT as a sector and in that the potential of ICT services export for developing and transition economies.

2.1. Defining ICT services

The traditional definition of services as 'non-tradable' is no longer valid in a world where rapid technological progress in information and communication technologies has transformed and globalized the services sector. International trade in services has grown rapidly in the last two decades. By 2000 itself global exports of commercial services were estimated at US$ 1.4 trillion.[7]

The fast paced evolution of information and telecommunications technology has arguably been one of the key drivers of services growth. The importance of telecommunications as a service industry in itself as well as a critical support element for other service industries has become the focus of high-level policy formulation in practically every country in the world.

For the purpose of measurement and analysis, ICT industries are divided between manufacturing and services. According to the OECD 'work in progress' the guiding principle for services industries is that, "the products of a candidate industry must be intended to enable the function of information processing and communication by electronic means."

This definition can be also used to determine the scope of the list of ICT services. Although the list of services should not, in theory, be restricted to those primarily produced by ICT industries, it appears in this case that the bulk of ICT services do originate from these industries.
As per recent OECD work in the area of ICT classification and measurement[8], at a broad level of aggregation, then, a possible classification of ICT services would include:

- Telecommunication and program distribution services.
- On-line access services.
- ICT professional expertise.
- Hosting and information technology infrastructure provisioning services.
- IT infrastructure and network management services.
- IT technical support services.
- Information and document transformation services.
- Software.
- Other ICT services.

[6] At www.wikipedia.com
[7] World Development Indicators, The World Bank, 2003
[8] Schaaper, Martin, 2003, A proposal for a core list of indicators for ICT measurement, OECD, Paris

From the above classification it would be seen that ICT services have a very wide-ranging definition and such services encompass production, distribution, management and professional consulting, support and maintenance, as also software development and provisioning of data and information based services.

Traditional analysis tends to look at industry sectors in isolation, but it is becoming increasingly obvious that a wide range of services and goods producing activities are linked, into systems of creation, production and distribution. With increasing globalization and digitization the compartments are further getting blurred especially in the ICT sector. Here even software and hardware are now merged as one network where domestic and cross-border supply of services are themselves difficult to distinguish and inextricably linked and dependent on each other's competency and knowledge skill.

As the focus of this paper is on developing and transition economies and on the SME exporters within these economies, the major area of concentration within the large range of ICT services as defined above is really on what are referred to as 'e-Services'. E-Services is a term usually referring to the provision of services via the Internet (the prefix 'e' standing for "electronic", as it does in many other uses). e-Services by definition include e-commerce and ICT-enabled services, although they may also include non-commercial services. Non-eCommerce e-services include (at least some) e-Government services. ICT-enabled services is that sector of ICT Industry which aims at providing various services, through the use of ICT. This sector includes services ranging from call centres, claims processing, medical transcription, e-CRM[9] to back-office operations such as accounting, data processing, and data mining. Though technically ICT services also include telecom services, they are seen to be beyond the scope of this paper, as these are nowhere provided by SMEs.

2.2. Characteristics of export-oriented ICT service sectors

The focus of this paper of course is on export of ICT services. In this context information and communication technology or ICT services are basically those services that can be delivered over the ICT platform which today essentially implies the Internet and includes the telecommunication highway, broadband, wireless technologies, and of course IT and the digital software and hardware essential to run it on. The cross-border supply of such services entails e-Trade or ICT service export.

For the purpose of the focus of this paper on Export oriented ICT services from developing countries, such services therefore

- Must be tradable services
- Must be digitizable to be transacted over an ICT network
- Such transactions must involve cross-border transmissions that are verifiable
- The service should be critical to emerging economy development
- The providing firm must be from a developing country
- Finally, such services must be possible to incorporate into export-based development strategies[10]

2.3. The BPO boom

The principal growth in the area of ICT services exports has been in out-sourcing or BPO sector. To increase their competitiveness, many companies (particularly in the developed economies) are turning to business process outsourcing (BPO) to move labour-intensive activities to offshore locations where those processes are performed at the same or better quality level but at a lower cost. These companies are separating their core operational processes from non-core support processes, and then utilizing third parties to perform those support processes for them. And it's not just the large, GEs and Microsofts that are doing it. Small and mid-sized companies are also realizing that to be competitive they must focus on their core business products, not on running a back office. New technology has made it more difficult to support the back office in these

[9] Customer Relations Management

[10] Adapted from interaction and correspondence with Bob Fournier over 2004

organizations and attract the skills necessary to face the challenges of the new economy.[11] Outsourcing allows companies to maintain their strategic focus without the added pressures of maintaining an ever expanding IT infrastructure. By allowing an external expert to assume responsibility for its IT support functions, an organization's management can focus on the areas that create value for the organization—its core competencies. The continued growth, acceptance and success of outsourcing has today made it an essential business tool.

Sidebar 1

With numerous programmers available internationally over the Internet, the price of custom software has dropped, in many cases, to the point where many more end users of software can themselves afford to pay for customized programming for internal or proprietary use. Most estimates are that 75% of all software produced is for in-house consumption rather than for resale, so there is obviously a lot of this kind of programming being done. Typical piecework third-world programming rates range from 5%-20% of first world programming consultant's salaries depending on the type of work. The difference tends to be smaller for full time employees. Being able to hire programmers so affordably greatly reduces the barriers to entry for small businesses and even individuals wishing to benefit from custom software. (Source: The Milken Institute Review, Milken Institute, December 2004 at www.milken.com)

The growth of Services outsourcing/off-shoring is linked to availability of large amounts of reliable and affordable communication infrastructure following the telecom bust of the late 90s. Coupled with digitization of many services, it was possible to shift the actual delivery location of services to low cost locations in a manner theoretically transparent to end-users. With the dot.com boom in the late 20th century a massive investment in technology took place. At the same time PCs became cheaper and dispersed all over the world and there was an explosion of software allowing individuals to have remote access and do remote development. As Nandan Nilekani, CEO Infosys, Bangalore explains, "When all these came together by 2000 they created a platform where intellectual work, intellectual capital, could be delivered from anywhere. It could be disaggregated, delivered, distributed, produced, and put together again…" Not only did this create the e-services torrent that we are seeing today but also one where the playing field is fast being levelled or flattened. In this rising digital flood work flows naturally to where it's done most effectively, most efficiently and most economically. This is the rationale and potential of ICT services.

3. Potential and Scope of the Global Market in ICT Services

International market growth of the ICT sector has been impressive. Worldwide ICT spending reached USD 2.15 trillion in 1999, up from USD 1.3 trillion in 1992, having recorded a compound annual growth of 7.5 per cent over that period. OECD countries accounted for USD 1.9 trillion, or 92 per cent of the worldwide total. Worldwide ICT hardware spending reached USD 383 billion in 1999, software spending reached USD 154 billion, IT services spending reached USD 347 billion, and communication services spending reached USD 912 billion[12].

The current global off-shoring market[13] was estimated to be $32 billion in size in 2001.[14] An estimate for 2003 showed it at over $100 bn.[15] This worldwide market has surged 23% p.a. since 1999, and estimates for future growth range from $350 billion by 2005[16] to $650 billion by 2006[17].

[11] The Outsourcing Institute "Index 2000" reveals that outsourcing in smaller companies is rapidly increasing, up 25% from 1999 to 2000.

[12] Houghton, John W., February 2002, Information and Communication Technologies, Supporting Paper No 6, Centre for Strategic Economic Studies, Victoria University, Melbourne at www.cfses.com

[13] The terminology for services outsourcing is usually that from a U.S. perspective. Thus, "onshore" refers to locations in the U.S. using domestic resources. "Nearshore" refers to two types of locations. One type is in the same time zone, perhaps with a different language involved. Examples include Mexico, Costa Rica, Panama and Canada. The other type is locations outside U.S. time zones, with languages and cultures similar to that of the U.S., such as Northern Ireland and Australia. "Offshore" refers to India, China, Russia and other countries in different time zones, with languages and cultures different from those of the U.S.

[14] McKinsey & Company.

In terms of employment, data is not being collected across developing countries; however OECD data[18] for the developed countries shows a 6 to 11% share of ICT services in market services employment for the year 2000, with a positive growth of 0.5 to 2% across most countries. In developing countries such as India, employment growth is very high in urban areas on account of ICT services.

It is today widely recognised that there would be significant benefits all round if people and enterprises of developing and emerging economies are able to take full advantage of the Internet and other information and communication technologies. What is not fully appreciated is that such usage of the ICT technologies is not limited to the ICT sector in business and in fact has far greater impact when used across the board for all sectors and processes. It is in doing so that enterprises can truly attempt to become competitive in the digital age.[19]

The embodiment of this phenomenon is of course ICT or e-services.

There are those that still quote the basic economics textbooks that tell us: Goods are traded, but services are consumed and produced at the same place. That haircuts and food service in a restaurant for example cannot be outsourced. True but the bookings for the restaurant and the appointment for the haircut can be. Where you want to sit or which barber you would like can be planned and ordered through a call centre (or an e-service) located far away – in a developing country!

3.1. ICT services exports

EServices provide an opportunity for developing countries to offer competitive off-shoring services that otherwise would not have been an area that they could have accessed - e.g. Financial services, health insurance, medical transcription etc. The table below outlines some of the potential ICT services that developing and transition economies can export.

Table 1: Examples of ICT-Enabled Outsourcing Services

Customer Interaction Services	Back-Office Transaction Processing	Finance & Accounting Services	Human Resources Services	Knowledge Services
Customer Service Voicemail Marketing Services Telesales Order Processing Customer Support Warranty Administration Customer Feedback	Credit/Debit Card Processing Collections & Receivables Direct & Indirect Procurement Transport Administration Logistics & Dispatch Warehouse Management	Billing Services Accounts Payable Accounts Receivables General Accounting Auditing & Compliance	Payroll Services Healthcare Administration Benefits Planning & Processing Retirement investment Administration & Relocation Services	Data Mining Catalogue/Content Management Web Analytics

Source: E-Business Strategies. *BPO Basics: What Every Manager Needs to Know*. www.ebstrategy.com/BPO/basics/default.htm

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[15]

Estimated Off-shored ICT services market 2003	(Source: NASSCOM)
India: US$9.5 billion	Thailand: US$ 0.08 billion
Ireland US$ 8.8 billion	China: US$ 2.1 billion
Canada: US$ 3.5 billion	Russia: US$1.2 billion
Australia: US$ 0.8 billion	Eastern Europe: US$ 1.4 billion
South Africa; US$ 0.04 billion	Mexico: US$ 0.7 billion
Philippines: US$ 0.8 billion	Israel: US$ 3.2 billion

[16] Gartner.
[17] Goldman Sachs.
[18] *Source:* OECD estimates, based on national sources; STAN and National Accounts databases, August 2002.
[19] Singh, 2004

All the above ICT enabled export services may involve some amount of B2C[20] interaction with customers and consumers (e.g. billing, telesales, CRM etc.) however from developing countries they are offered as B2B[21] services for principal clients abroad as part of their 'outsourcing' of their own services. In this context one could say that over 90% of all export-oriented ICT services would fall in the category of B2B services.

The other feature is that whereas in software development and exports it is IT firms that are the dominant clients for outsourcing services, a much wider spectrum of industries (e.g. travel, banking, healthcare) are engaged in sourcing IT-enabled services from developing countries. Again this is leading to a much wider set of options at both ends of the spectrum i.e. at the developed country business or economy level as also at the developing country ICT-enabled enterprise provider level. Options and opportunities here are limited only by the marketing of such services by the latter.

Sidebar 2: Projected Market Indicators for Growth of ICT Services

According to the latest market indicators, after banking, financial services, IT support and data services, legal and medical records and insurance, publishing is emerging as a major service (global market of $2.5 bn by 2003 and expected to grow to $4.6bn by 2007). Market research outsourcing (MRO) is the next big one happening with analysts expecting the $17 billion market research industry sending 10-15% of its work to developing countries at an estimated market of some $ 2bn. Over the next 3-5 years. As the much hyped medical transcription declines, imaging, disease management and claim processing along with pathological testing outsourcing are the new areas in the Health BPO sector. (Source: RocSearch, Report on Global BPO Market, 2004-05 at www.rocsearch.com.)

Other specialized ICT services that are growing rapidly include a whole range of new services such as immigration software and services (already $ 1bn in the US and $ 4-5bn outside); specialised legal outsourcing to US and European law firms (expected to be $ 1bn by 2007); and a host of personalised services such as individual tuitions (including homework outsourcing!), English teaching and several other subjects that are offered on a one-to-one link-up mode. Quite simply the options and areas are countless and presently immeasurable.

3.2. Understanding the challenges

Despite all the hype, strategy makers need to appreciate some of the constraints and challenges that must be faced while developing ICT-service exports. Decision-makers should pause and devote some thinking of the issues to consider in determining whether the sector is worth developing and promoting, or whether the limited resources available are better spent elsewhere. In doing so it must be understood that even in successful case studies there are issues and constraints that can become crucial for success in the sector. Some of these are:

The security issue

Every enterprise today is aware of that Cyberspace has become highly vulnerable to attacks in the form of hacking, planting of viruses and worms, denial of service attacks and other security breaches. The vulnerability particularly of SME networks has emerged as an area of particular concern. According to a recent study in Australia 81% of the SMEs' networks were vulnerable to internet attacks. Recent virus attacks have known to have severely affected ICT services. Today many of the SMEs are completely dependent on ICT systems for their smooth functioning and any mishap can cripple their networks and not only harm business but also raise doubt in the trade partners' minds about the quality and reliability if the ICT service.

The very openness and global reach with non-existent physical clues that are the inherent characteristics of digital dealings on the Internet make ICT services both vulnerable and possibly more insecure, at least in perception. The very openness of the Internet that makes contact between buyers and sellers so easy and potentially so rewarding is itself a platform that raises

[20] Business to Consumer
[21] Business to Business

the fears of data protection loopholes in ICT services and offshoring. Therefore better controls and security systems are needed in offering such services to convince buyers of the safety of availing such services.

Security of transactions can themselves become a barrier to the growth of ICT services. Especially in the case of B2C, unless consumers are convinced about the confidentiality, safety and predictability of buying services and goods on the Internet, they will probably just use it for information gathering and price checking and then resort to traditional off-line transactions for concluding their purchase. For B2B ICT service exports too unless the buyers are convinced of data and transaction security they may very well move their business elsewhere. For strategy makers it is important to note that ICT security is a national issue in the sense that an environment of trust and reliability of the network needs to be created jointly by Government[22] and enterprises, only then can ICT services of that country have a reliable brand abroad.

The privacy issue

As ICT services expand and grow, they will require to meet standards and regulations imposed by buyer companies and countries. A major issue that has emerged here is that of privacy. The growth of eCommerce and ICT services has resulted in an increased flow of personal data on the Internet and an increased fear of consequent threat to privacy. The protection of privacy is widely understood as the right of individuals to control the collection, use and dissemination of their personal information that is held by others[23]. Besides being a technical or business issue, privacy is also an ethical issue, as cyber space does yet not have accepted norms and codes of conduct to regulate issues of privacy. The issue is further complicated by the fact that on the one hand, technology[24] today enables marketers and purveyors to collect information about a consumer's internet usage patterns including purchasing habits, mostly without their specific consent and on the other requires that standards and norms of the purchasing consumer or enterprise be met. For example the European Union has issued several Directives on Data Privacy whereas in the US there are specific laws for sectors such as health but for the sector as a whole its mostly self-regulation that is relied upon. Enterprises are expected to 'conform' to certain standards, and yet be confronted with the threat that their performance could still be considered to have breached rules governing privacy protection.

This issue has an impact on developing countries exports of ICT services, and poses a difficult choice for these countries. If they choose not to enact laws deemed adequate, they could be shut off from participation in this growing market. If they do enact stringent laws, it is unlikely that they could be made specific to trade with particular jurisdictions, and so the result could be an economy-wide increase in the costs of doing business. Privacy as an issue needs to be addressed at two levels for enterprises providing ICT services. The first is that of B2C where enterprises are dealing with individual customers (for international trade the clients would be cross-border) and are required to ensure confidentiality and security in order to build trust with their clients. The second is the area of B2B where enterprises are dealing only with other enterprises cross-border but are on behalf of their partners handling large volumes of personal data. Examples in this area are, medical transcription and medical insurance billing services; legal transcription; customer handling call-centres; on-line service centres etc. the issue is growing in importance and threatening to convert into a 'non-tariff barrier'. This is particularly true for new enterprises attempting to start business in this area. Their credibility and standards are still at question and therefore they could be made to suffer in the business arrangement on account of higher 'costs' (or lower rate) being imposed on them.

As noted above strategy makers here too have a role, both in Government and the private sector. A legal framework at the national level and privacy standards at the enterprise level have to simultaneously be put in place.

[22] 'Critical Infrastructure protection' is today the buzz-concept for Governments having to address e-Security. It envisages protecting the key telecom facilities and networks to ensure that public IT based systems do not collapse.
[23] OECD Guidelines on the Protection of Privacy and Trans-border Flows of Personal Data
[24] Such technology includes the use of 'cookies', Internet browsers, service forms, email registration etc.

Eco-Political Issues impacting ICT services/BPO

During the last US election when loss of jobs supposedly on account of outsourcing became a major issue some predicted that the political backlash against outsourcing in the United States would erode the increasing BPO/Off-shoring market. This negative perception of outsourcing was reflected in the introduction of legislation in some 36 States in the United States and at the Federal level, which sought to ban Government funds going to enterprises that out-source or provide for multifarious conditions and restrictions on call centres and other out-sourced services. To counter these sentiments, developing country IT Associations (such as NASSCOM from India) launched a publicity blitz particularly at Washington and with key US enterprises that showed that ICT off-shoring enterprises actually benefited and contributed to the US economy. Several leading research organisations and influential journals including the Economist gave out detailed analysis that proved that ICT services outsourced benefit both receiving and provisioning economies. As result the backlash against BPO in the developed economies has not have any significant impact on this global market, and figures demonstrate that the sentiments are already beginning to wane. Basically BPO or out-sourcing /off-shoring is a compulsion of globalization that has resulted in a unique opportunity for developing countries and no amount of superficial legislation is going to stop it. The business model of ICT services export is based on the competitiveness of service provisioning from developing and transition economies and it is here to stay. Strategy makers however need to be wary and alert to such challenges and address them in a concerted and organised fashion.

e-Business Issues

The Outsourcing of services involves the management and/or day-to-day execution of an entire business function by a third party service provider. It is important to note that such outsourcing and out-tasking involves transferring a significant amount of management control/participation to the supplier. Buying services from a provider is not necessarily outsourcing or out-tasking. Outsourcing always involves a considerable degree of two-way information exchange, co-ordination, and trust. Such transfer of business control can result in conflicts between buyers and providers of ICT services. According to a recent report by a leading US journal, the new wariness about replacing US jobs with overseas workers does not mean off-shoring has slowed, just that US enterprises are getting choosier as to what tasks they want to send overseas. Beyond cost, control is also important. This is leading to apprehensions about quality, security and management especially with regard to financial services.

Similarly there are other business issues that can crop up in the export of ICT services. One such is the 'cross-selling' issue in call centres. This is the practice of one service also selling or 'pitching' for related or linked services and products to customers that come on-line in attempting to increase revenue per client. ICT services provided from off-shore have difficulty in managing this. Also there are complaints of language accent, cultural issues and training and capacity skills. All these are of course directly business related issues and it is up to the developing country enterprises to address and upgrade their capacities in offering high-quality and diverse ICT services.

Emerging business models

In the area of ICT services and establishing of successful off-shore businesses, M&As[25] and joint ventures were the first models to emerge and they were and still remain largely the domain of big enterprises. Typically developed country service providers would initially establish a joint venture with a local enterprise in developing country an export ICT services/BPO. Once the business was well established they would buy out the local partners. Alternatively they would directly buy-up an up and running BPO company and add their own requirements to it. With increasing business coming from mid-size enterprises, beyond the initial market growth fuelled by the Fortune 1000, alternate models of outsourcing of ICT services is taking place. One such model is BOT i.e. Build-Operate-Transfer. For the smaller service providers this is a much safer option as it reduces their risk on a medium term basis. For the outsourcing company this is good business practice because If the ultimate goal is to own the centre, BOT makes sense because it takes away the setting up problems and over a period of 3-5 years, the company gets acquainted with the local conditions, allows size to grow, processes get well established and then take it over. This is expected to be the major trend for the future.

[25] Mergers and Acquisitions

For strategy makers it is important to note that as ICT services grow, alternate and dynamic models will emerge. The competitiveness of local services will lie in maximizing their skills and ensuring high quality and innovative services. The explosion in the types of ICT services coming out from several developing and transition economies like India, Bulgaria, Philippines, Costa Rica etc. indicates that is in fact happening.

The essential take from this for strategy-makers is that the ICT services export sector is growing by leaps and bounds. The answer to the question whether the ICT sector is indeed still an opportunity or is it too late is a definitive YES! Though there are major first-comers in the market already, yet the potential and opportunities are so widespread and immense that there is a piece of the ICT-services cake that many can aim for. The following sections of this paper will seek to underscore the lessons learnt from success stories and factors and gaps that need to be plugged for achievement in this sector.

4. Export Clusters and ICTs: Lessons from the Bangalore e-Cluster

Strategy makers need to understand success stories, appreciate lessons from them and then decide for themselves whether these lessons and best practices can be emulated in their own economies. As part of the strategic and policy formulation exercise that ITC promotes, the author had presented at the Tirupur consultation a few months ago a paper on the Bangalore IT cluster.[26] Extracts and the principal lessons from it in the context of ICT services are presented here.

ICTs in the developed economy context is associated with capital deepening, increased labour productivity and spiralling effects due to networked externalities[27]. In the developing country context such 'automated/collaborative networking' is not usually available therefore here ICT is viewed more as a tool to improve human capability and modernise the provisioning of services. The creation of IT clusters is an example of attempting to create the benefits of such networked externalities in a limited location. It is in this perspective that the success of the Bangalore ICT cluster has led to several developing countries wishing to replicate it in their own backyards.

For developing country strategy makers, the ICT cluster in Bangalore is of interest for a variety of reasons.

- It represents in a microcosm several of the developments associated with globalisation.
- It is a knowledge oriented or human capital-intensive industry, which has attracted multinational firms to Bangalore both as producers and consumers of software, turning the city into an international gateway for trained labour.
- It's the most famous success story of the digital age and it's located in a developing country.
- It's an example where the State has actively assisted the growth of the industry.

What are the ingredients that have made India's 'Silicon Valley' as successful as a technology cluster with national and global impact? Can these be replicated? What collective role can industry, workforces, educators and government policymakers play in creating such successful clusters in their own countries?

Bangalore was home to 13 companies that generated foreign software services income of $US 8 million in 1990-91. There are now more than 1400 ICT companies in this capital city of the Indian state of Karnataka that sits on India's southern high plains (the Deccan Plateau), and they generate export income of more than $US5 billion a year. Today, the Bangalore IT cluster is the biggest in India, and the fourth largest in the world. This cluster consists of small, medium and large companies including wholly foreign owned firms such as Motorola, Indian owned ones such as Infosys and joint ventures such as PSI Data Systems.

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[26] Singh, A. Didar, 2005, *The essential ingredients of Bangalore's success: Some Lessons from the cluster*, ITC Consultation on Competitiveness through export clustering: Strategic considerations, Tirupur, India 11-13 April, 2005.

[27] Director General NCAER as quoted in DIT & NCAER, 2004, *India: E-Readiness Assessment Report 2004*, Department of Information Technology, Government of India and National Council of Applied Economic Research, New Delhi.

Research has shown that in Bangalore are available virtually all of the principal factors promoting clusters as identified in studies focusing on ICTs. These include:

- the presence of educational institutions which produce a stream of engineers,
- technicians and scientists,
- state support in the form of tax incentives and subsidies,
- salubrious living conditions which enhance the quality of life, especially in university towns,
- availability of venture capital
- and generation of forward and backward linkages.

There are some 'best practice' lessons for business and industry that the Bangalore study showed. Some of these are enumerated below:

- **Ingredients of success**: The existence and growth of the cluster in Bangalore are explained by a variety of factors including state support, endowments of skilled labour, foreign investment and the economics of agglomeration.
- **Government's commitment is essential**: Government must show its backing by committing tax concessions and resources for infra-structure. This alone can lead to growth in this area. Governments must have specific IT/E-commerce policies and measurable, target oriented action plans. In Bangalore even more important than the incentives has been the facilitating role played by Government and its organisations.
- **Focus strategies:** Concentration of initiatives can be centred especially in urban concentrations, where the maximum potential for trade and commerce presently exists. India followed this strategy of providing digital data access initially at only important commercial centres, especially where there was a concentration of export-intensive industry. In India satellite earth stations were set up at key locations (only 7 initially) for providing 24 hour guaranteed access to software companies for export activities, much before Internet was available on the existing telecom channels.[28] In phase II now the range and strategy is widespread.
- **IT Cluster Management**: Though the government established IT promotional body Software Parks of India Ltd. (STPI) continues to provide the telecommunication links, maintain the main IT park and provide the required services for export facilitation, it does not directly 'manage' the Bangalore IT cluster as there are today several locations, services and options available for the IT sector.
- **Intermediate Strategies are useful:** Many developing countries may not be able to generate or attract the large investments needed for upgrading their telecom and other infrastructure across their entire country. Therefore, a more strategic option would be to formulate and implement appropriate strategies by concentrating on the areas in which IT, electronic commerce and IT enabled services are most likely to bring the highest benefits.
- **Re-engineer existing networks and use global services:** Massive investments and flawless technological solutions are not always necessary or possible. Even existing networks can be reengineered and global services for the Internet and e-commerce sites can be utilized. Till recently, all data connectivity was through state run telecom services and a majority of Bangalore centred websites are based out of servers in the US.
- **Developments can be phased out:** An analysis of the Bangalore example has also shown that different 'infostructure' are essential for certain types of development and can be brought fourth in a sequential and not necessarily simultaneous manner. The strategy for growth of software exports and now e-commerce and e-services in Bangalore shows phased level jumps. Starting with just data connectivity, the next step was incubating facilities in STPI and state government leased space, leading to the setting up of large

[28] Another option is to set up Business centres in far flung places, linked to a common network and service that assists not only in access but also business promotion. Experiments in this regard have been quite successful from Sri Lanka to Brazil and even in Africa. Such models provide an immediate and workable solution that can be emulated by other developing countries.

software parks (Science Parks) and then increasing bandwidth for the whole city through fibre-optics and satellite gateways in the private sector.

- **Financial and human capital needs to be planned for:** It also requires securing the availability of factors of value addition such as capital (both financial and intellectual) and trained manpower. Some places will have this in abundance, and some will not. Even in Bangalore shortage of trained software professionals has been an issue and companies based there recruit their employees from all across the country. IT companies also carried out the moulding of non-software engineers into software work by sustained training and incentives. Similarly Venture Capital needed the necessary push from Government and the private sector.
- Success is more dependent on the **e-Business environment** and the seizing of opportunities rather than on physical location in a science/IT park.
- **Challenges and obstacles** include poor infrastructure, high telecom tariffs, a massive digital divide, government bureaucratic procedures, presence of just a few higher educational institutes, low R&D spending by IT companies, inadequate original and locally developed IP, less focus on products as compared to services, inadequate VC presence, and high employee attrition especially at the level of team leaders
- The Bangalore experience shows that **external linkages** have an important impact in forming local relations.
- **ICT Clusters** are not an instant solution, but they do bring measurable results. Comparative advantage in the endowment of skilled labour in a developing economy can get magnified if specific ICT industries and services are organized in terms of technologically dynamic clusters by external economies of cluster activity.

The listing of the lessons and strategic example of Bangalore shows that developing countries can attain tremendous success in riding the outsourcing boom and offering ICT services for exports. Everybody however cannot expect to become another Bangalore – not even another city in India. However the market and opportunities are vast and growing.

Most people think of India when they hear the term BPO/Outsourcing or ICT-enabled services, but in reality BPO is growing in a number of developing countries due to recent ICT developments. Countries offering outsourced services include among others: Bangladesh, Brazil, Cambodia, China, Costa Rica, Ghana, the Philippines, Russia, Thailand, and Venezuela. Eastern European nations like Bulgaria, Latvia, Romania and Estonia have been declared the new tech outsourcing leaders of 2005. This growth is matched by an increasing demand from companies located in the United States and Europe to cut costs by outsourcing non-core business functions to the developing world. Such a favourable environment entails that developing countries should not try to compete against each other by offering lower cost or supposed 'better' deals. What they need is to offer is better quality of ICT-services.

The next section lists out the key factors that determine an economy's e-preparedness to offer such 'better' services.

5. Key factors for ICT Success

An OECD study in 2004[29] has presented 'complementary factors in the business environment' that determine ICT success. These have been outlined as:

- the extent of competition and the nature of the regulatory environment – the logic being that the more competitive and less regulated the business environment, the more likely are firms to take advantage of ICT innovation;
- the relative costs of ICT deployment, including the costs of hardware and other inputs, including skills, but also indirect costs related to changes in working practices, licensing, standardization and the usage costs of networking facilities such as telecommunications networks;

[29] From OECD study 2004: Factors that determine ICT success

- the amount and quality of human capital available – the better skilled the workforce and the better equipped a firm is to upgrade workforce skills to take advantage of ICTs, the more likely it is to achieve higher rates of ICT-related innovation and increased productivity;
- the ability and willingness of firms especially SMEs, to restructure and reorganise their working methods to take advantage of the new opportunities made available through ICTs (the OECD study confirmed evidence reported elsewhere that adaptability and organisational capacity within firms play a crucial part in maximising the value of ICT investment).

The strategic inference is that, to retain or enhance their country's relative economic performance, governments and businesses alike should act in ways which facilitate the benefits of ICTs:

- liberalising markets and reducing regulatory requirements on businesses,
- promoting access to business finance and facilitating market entry and company growth,
- encouraging entrepreneurship and innovation, stimulating trust in the efficacy and security of electronic transactions,
- and promoting the development of human capital, chiefly through education and training.

Although the challenges in addressing these complementary factors vary from country to country and are not susceptible to detailed prescription without attention to differing national circumstances, the study has revealed that experience in OECD countries does suggest that three broad areas of government intervention are particularly productive in enhancing societies' capacity to take advantage of ICTs – their "e-readiness" or 'e-preparedness. These are:

1. the promotion of infrastructure development and access,
2. liberalisation and deregulation,
3. and the development of human capital.

Although they are by no means the only complementary factors susceptible to government action, the evidence suggests that by intervening in these three key areas, and in particular addressing developing countries' weaknesses where they are concerned, governments can make a considerable improvement in the environment for ICT investment and ICT-related growth in their economies.

5.1. Strategic framework of key factors for ICT services e-preparedness

It is today a well-established fact that countries and economies need to be e-ready for offering ICT related services. What however are the finer factors and standards as applicable to developing countries? What kind of infrastructure, support services, competencies etc. are necessary? Are there related industries that need to be in place? What is the role of government, of the Trade Support Network, of the private sector? How does a country establish a reputation as a reliable supplier of ICT?, etc. In order to address these questions it is important to first assess the e-preparedness of the enterprises and the environment, identify the gaps and strategically address them.

Assessing e-Preparedness of developing countries for ICT are complex exercises however if they are carried out with the intention of identifying gaps that need to be addressed then they can prove to be an effective tool to achieve higher levels of equity (both domestic and international), in the emerging digital economy. Over the past few years, numerous attempts have been made to measure the comparative levels of ICT development of nations. The World Economic Forum's Networked Readiness Index (NRI)[30] published annually, measures the propensity for countries to exploit the opportunities offered by information and communications technology. (A copy of its latest Index is at Annex 1, which shows the developing and transition economies mostly at the bottom of the list). In this context ITC (in its *e-Trade Bridge Programme*) has identified key factors that impact at the three levels of Micro, Meso and Macro in so far as e-Preparedness for e-Trade

[30] The World Economic Forum's Networked Readiness Index (NRI) measures the propensity for countries to exploit the opportunities offered by information and communications technology. The NRI seeks to better comprehend the impact of ICT on the competitiveness of nations. The NRI is a composite of three components: the environment for ICT offered by a given country or community, the readiness of the community's key stakeholders (individuals, businesses, and governments) to use ICT, and finally the usage of ICT amongst these stakeholders.

and e-Commerce is concerned and offered such a framework.[31] This can be adapted to e-Services also.

Such a framework can be used for gap analysis that applies across the board for the ICT sector as a whole – irrespective of whether the goal is IT hardware or e-services. The matrix below seeks to highlight the importance of each of these issues for developing countries, so far as ICT services are concerned.

Matrix to show the importance of Framework issues for ICT services

Intervention Level	Key Factors	ICT enabled services
Micro Level (Enterprise level environment)	**Attitude, culture and use of ICT in Industry**	High level of IT competence is not required as for software or other high-end IT services, however individual enterprise level commitments are important to achieve e-competitiveness
	e-Professionals availability & e-Trade capabilities	Limited e-capabilities sufficient for the specific BPO service required. E-Trade capabilities again limited to the specific ICT enabled service.
	e-Business environment including for e-trade	e-Business environment helpful though not crucial for the B2B type transactions that most ICT enabled services are.
Meso Level (e-Trade support level)	**Trade Promotional Agencies**	Very important role of TPOs and IT/BPO Associations to lobby for the right policy environment and other issues such as service tax, training needs, political and diplomatic support for any backlash as being seen from some developed economies.
	ICT Infrastructure	Sufficient direct connectivity, satellite or broadband required. Overall country level Internet and connectivity not an issue for the B2B connectivity and transactions.
	HR Framework	Essentially most ICT Enabled services / BPOs/Call-centres require language skills and specific service skills, not high-level IT skills or education. Therefore mostly government does not need to create separate ICT HR infrastructure.
Macro Level (Policy Framework)	**Policy & strategy at national level**	Strong policy and administrative support needed.
	e-Government initiatives	Not directly relevant except where e-Government service itself involved and in creating overall favourable ICT environment.
	Legal & regulatory framework	Extremely necessary as legal issues can and do arise, e.g. privacy and security issues.

(Source: Adapted to ICT-Services from Singh, A. Didar, 2004, *Putting 'e' into competitiveness: Dimensions of digital networks for developing countries*, ITC Executive Forum, 2004).

This analysis essentially points to two conclusions:

1. that the key factors of e-preparedness as noted above are of variable importance for ICT services but together contribute to the e-competitiveness of enterprises and their environment; and
2. that micro, meso and macro factors all interrelate and their real synergy comes about only through collaboration and partnerships between the various stakeholders.

The strategies to address this are what the next section would comment upon.

[31] A paper for the last Executive Forum (Singh, A. Didar, 2004, *Putting 'e' into competitiveness: Dimensions of digital networks for developing countries*, ITC Executive Forum, 2004) had presented such a framework.

6. Strategic Implications for the ICT Services Sector

There are several strategic questions that need to be addressed by developing country policy makers and their enterprises. Several of these have already been answered in the preceding sections and outlined through the gap-analysis framework modelling suggested, especially with regard to the key factors relating to policy, infrastructure, education and quality of the business operating environment, etc. In order to run through a practical check-list and ask the right questions decision-makers need to address some of the following issues in order to develop strategic options for the sector, both as a direct export as well as a support sector to other related and unrelated sectors:

- What is the role of government, of the Trade Support Network, of the private sector?
- How does a country establish a reputation as a reliable supplier of ICT?
- how can opportunities be identified and exploited?
- Are there related industries that need to be in place?
- What kind of infrastructure, support services, competencies etc. are necessary?
- Who should be involved?
- What are the strategic implications?

After all successful ICT service export is not just about connectivity to the Internet, but is dependent on the content and services made accessible, the consumers that use it online and offline, the language and cultural innuendos that pervade it, the enterprises that continue to be convinced of its quality and cost saving, the legal and regulatory frameworks that support it and the constantly upgrading of skills that sustain it.

While on the one hand strategy-makers push for competitive ICT service provisioning by their enterprises, on the other hand it must also be realized that e-competency to do so must be matched with basic competitiveness and trading expertise and processes. ICTs are only a new platform and opportunity to offer new as also old services.

A checklist for strategy-makers to address the key issues is presented here as modified from a framework developed by one of EF Network members called the “8 Cs” of the digital economy, or parameters which all begin with the letter “C” as illustrated in the Table below. It also highlights the two views of ICTs[32]: as an instrument or tool (e.g. for exporters and manufacturers) and as an industry or service in its own right (e.g. software industry and ICT-enabled services). This is a useful checklist for assessing a country’s e-preparedness and also to identify areas that trade support organisations and enterprises need to address.

[32] Further elaborated in Chapter 2 as the relationship between ‘e’ and business

Table 2: The "8 Cs" of ICT

	ICTs as a tool	ICTs as a service
Connectivity	How affordable and widespread are ICTs (eg. PCs, Internet access, software) for consumers and SMEs?	Are there enterprises offering their own, software, datacom solutions and ICT-enabled services?
Content	Is there useful content (foreign and local) for citizens and SMEs to use on a regular basis for improving their performance?	Is content being generated in local languages and localised interfaces? Is this being accessed/used abroad?
Community	Are there online/offline forums where citizens and SMEs can discuss ICT and other issues of concern?	Is the country and its services emerging as a hub of discussion and forums for the worldwide ICT service industry? Is it at least contributing to the discussion?
Commerce	Is there infrastructure (technological, legal) for e-commerce for citizens, SMEs and government? How much commerce is transacted electronically?	Does the country have indigenous e-commerce technology and ICT-enabled services? Are these being exported?
Capacity	Do citizens and SMEs have the human resources capacity (technological, managerial, policy, legal) to effectively harness ICTs for professional and business use?	Does the country have the human resources capacity (technological, managerial, policy, legal) to create and export ICTs, and set standards?
Culture	Is there a forward-looking, open, progressive culture at the level of policymakers, SMEs, educators, citizens and the media in opening up access to ICTs and harnessing them? Or is there nervousness and phobia about the cultural and political impacts of ICTs?	Are there professionals, entrepreneurs and managers pro-active and e-competent enough to create local ICT service companies and take them global?
Cooperation	Is there adequate cooperation between citizens, SMEs, academics, NGOs and policymakers to create a favourable climate for using ICTs? Are there forums for interaction and collaboration?	Is there a favourable regulatory environment in the country for creating ICT companies, M&A activity, and links with the diaspora population?
Capital	Are there enough financial resources to invest in ICT infrastructure and education? Is FDI being successfully attracted?	Is there a domestic venture capital industry; are they investing abroad as well? Are international players active in the local equity market? Are there stock markets for public listing?

Source: Adapted from "Checklist for national e-readiness," by Madanmohan Rao. ITC Forum, Issue 3/2003.

So far as enterprises offering ICT services are concerned business research[33] indicates that foreign buyers tend to judge them on the following factors i.e. Price; Competency; flexibility; Financial Stability; and ICT service Capabilities. Best-in-class outsourcing providers leverage best practices in their areas of specialization and make major investments in people, methodologies and technology based on those best practices. These providers are exposed to many client environments and develop a perspective that allows them to apply what works best to their engagements. Their abilities and therefore business success lies in enhancing their competitiveness at both internal and external levels. The enterprise needs to address the internal issues such as employee training and skills and re-engineering its products and processes. Externally, the customer facing requirements (CRM) and partner or supplier facing digital compatibility and secure as per the standards of the buyer. For each of these, different components and ingredients need to be tackled. These include the factors discussed earlier and would again involve macro, meso and micro issues such as content (micro), collaboration (meso), infrastructure (meso and macro) and business-culture adaptability (micro and meso), etc.

[33] Source: IT Techcare Group PLC, November 2002, White Paper on Outsourcing ICT Services, at www.it-techcare.com

Sidebar 3: An Alternative View

"Ten years ago most development agencies, analysts and developing-country governments considered information and communication technologies (ICTs) marginal to the achievement of both national economic growth and the reduction of poverty. Today, ICTs are considered so central to development that governments have initiated national "e-strategies" and donor agencies have made them a mainstream item in national and international programmes. They are now sufficiently important, indeed, for the Information Society to merit a World Summit similar to those on Sustainable Development or Social Development.

The speed with which scepticism has given way to enthusiasm has stimulated a good deal of innovative thought, but it also carries substantial risks. Investment in ICTs is expensive, and its impact largely un-researched and easily exaggerated. Many of the assumptions underpinning current thinking on ICTs in development are based on intuition rather than analysis – and on limited evidence from a narrow range of pilot projects rather than large-scale impact assessments. The danger is that, without better understanding of the real impact of ICTs on both national economies and community development, the pursuit of over-ambitious, unrealistic goals may mean that resources are misapplied and worthwhile objectives missed. Past disappointments, for example the failure of import substitution industrialization strategies to transform economic growth, have not destroyed the yearning for a "magic bullet" for development, and the real capabilities (and limitations) of ICTs must be properly understood if they are to be exploited effectively in both small- and large-scale industrial activity and in their contributions to national economic expansion." (Tambo, 2004)

6.1. Some lessons and recommendations

Analysis in the area of ICT[34] by OECD and other International agencies has identified some key lessons learned over the years. These are relevant for developing countries strategy-makers seeking to promote the export of ICT services

- Sustainable ICT projects need to be locally owned and accompanied by human capacity development.
- Capacity in effectively using ICT for business and services is often the main constraint, not equipment.
- The private sector is instrumental in expanding ICT services and applications.
- The potential and focus is and must be knowledge-based professional business to business services.
- Governments play a key role in establishing a well-regulated, competitive enabling environment for ICT to flourish.
- Many important aspects of information and communication infrastructure are cross-border in nature, and therefore require international/regional co-operation.

It is necessary to adapt continuously to the rapidly changing digital world. ICTs are being constantly developed. The capacity of the developing world to use the potential of ICTs is being developed. The world itself is being changed as a result of ICTs. The knowledge and experience of developing country SMEs on how ICT should be used for the benefit of their existing businesses and to avail of the opportunities of exporting ICT services is also constantly being changed and evolving. All this demands continuous organizational learning and an open attitude.

7. Focus of the Debate

The Proposition

The theory is that the ICT services cake is growing and expanding. You just need to improve your competitiveness for your company and your country to ensure that you will get a piece of that cake. Can strategy-makers base their planning on this premise? That is the question. To answer that decision-makers should first address the following questions and openly debate them.

[34] Some lessons learned have identified in the OECD-DAC Donor ICT Strategies Matrix (December 2003)

Questions for strategy-makers:

1. Should ICT services be an essential component in the long-term export strategy at the national level?

2. What are the principal constraints or gaps to competitiveness in ICT services for enterprises and governments?

3. What are relevant approaches to overcoming these gaps? What should be the roadmap for evolving a successful strategy for promoting ICT service exports from your country?

4. What is best practice in this area and is it relevant for you (your enterprise/economy)?

Principal References

Desai, Kartikeya N. and Padmanabhan, Anant R., 2002, *Evaluating National ICT Strategies: Export versus Domestic Market Focus, The Comparative Experiences of Costa Rica and Brazil*, School of International and Public Affairs, Columbia University

ForeignAID.com *ICT Services Whitepaper* at www.foreignaid.com

Forrester Research, March 2003, Offshore: *The Good the Bad and the Ugly*, Forrester at www.forrester.com

Friedman, Thomas L., 2005, *The World is Flat: A Brief History of the Globalized World in the 21st Century*, Penguin, London

Gartner, the Internet research firm as quoted in ZNet Asia at http://asia.cnet.com/news/business/0,39044229,39240984,00.htm.

Houghton, John W., February 2002, *Information and Communication Technologies*, Supporting Paper No 6, Centre for Strategic Economic Studies, Victoria University, Melbourne at www.cfses.com

IT Techcare Group PLC, November 2002, *White Paper on Outsourcing ICT Services*, at www.it-techcare.com

ITC Executive Forum 2000, *e-Briefs*, at www.intracen.org/execforum2000

OECD, April 2002, *Reviewing the ICT sector definition: issues for discussion*, Directorate for Science, Technology and Industry, Working Party on Indicators for the Information Society, OECD, Paris

OECD, July 2004, *How are Information and Communication technologies (ICTs) defined?,* Informal Expert Meeting on ICTs for Poverty Reduction, OECD, Paris

OECD, Dec 2004, *ICTs and economic growth in developing countries*, Development Co-operation Directorate, OECD, Paris

Schaaper, Martin, 2003, *Proposal for a core list of indicators for ICT measurement*, OECD, Paris

Singh, A. Didar, 2004, *Putting 'e' into competitiveness: Dimensions of digital networks for developing countries*, ITC Executive Forum, 2004

Singh, A. Didar, 2005, *The essential ingredients of Bangalore's success: Some Lessons from the cluster*, ITC Consultation on Competitiveness through export clustering: Strategic considerations, Tirupur, India 11-13 April, 2005

Tambo, Ichiro, 2004, *ICTs and economic growth in developing countries*, OECD Development Co-operation Directorate, Paris

Nash, Tony, 2005, China *or India? It's China and India*, The Economic Times, New Delhi, 12th May 2005.

Wikipedia Encyclopaedia at www.wikipedia.com

World Bank, 2003, *World Development Indicators 2003*, World Bank, Washington D. C.

UNCTAD. 2002, *E-commerce strategies for development: The basic elements of an enabling environment for e-commerce*, UNCTAD, TD/B/COM.3/EM.15/2: Geneva, May 3

Annex 1

Network Readiness Index 2005
(Forbes.com staff, 03.09.05, 5:00 AM ET)

The World Economic Forum's Networked Readiness Index (NRI) measures the propensity for countries to exploit the opportunities offered by information and communications technology. It is published annually.
(More details at www.weforum.org/gitr.)

Country	Networked Readiness Index 2004-2005	Networked Readiness Index 2003-2004	Country	Networked Readiness Index 2004-2005	Networked Readiness Index 2003-2004
Singapore	1	2	Romania	53	61
Iceland	2	10	Morocco	54	64
Finland	3	3	Namibia	55	59
Denmark	4	5	Latvia	56	35
United States	5	1	Egypt	57	65
Sweden	6	4	Croatia	58	48
Hong Kong	7	18	Trinidad and Tobago	59	52
Japan	8	12	Mexico	60	44
Switzerland	9	7	Costa Rica	61	49
Canada	10	6	Russian Federation	62	63
Australia	11	9	Pakistan	63	76
United Kingdom	12	15	Uruguay	64	54
Norway	13	8	Ghana	65	74
Germany	14	11	Colombia	66	60
Taiwan	15	17	Philippines	67	69
Netherlands	16	13	Vietnam	68	68
Luxembourg	17	14	Panama	69	58
Israel	18	16	El Salvador	70	62
Austria	19	21	Sri Lanka	71	66
France	20	19	Poland	72	47
New Zealand	21	23	Bulgaria	73	67
Ireland	22	22	Gambia	74	82
United Arab Emirates	23	-	Kenya	75	84
Korea	24	20	Argentina	76	50
Estonia	25	25	Uganda	77	80
Belgium	26	24	Dominican Republic	78	57

Malaysia	27	26	Serbia and Montenegro	79	77
Malta	28	27	Algeria	80	87
Spain	29	29	Zambia	81	85
Portugal	30	31	Ukraine	82	78
Tunisia	31	40	Tanzania	83	71
Slovenia	32	30	Venezuela	84	72
Bahrain	33	-	Macedonia	85	75
South Africa	34	37	Nigeria	86	79
Chile	35	32	Madagascar	87	92
Thailand	36	38	Guatemala	88	86
Cyprus	37	-	Bosnia and Herzegovina	89	-
Hungary	38	36	Peru	90	70
India	39	45	Georgia	91	-
Czech Republic	40	33	Mali	92	96
China	41	51	Malawi	93	88
Greece	42	34	Zimbabwe	94	95
Lithuania	43	42	Ecuador	95	89
Jordan	44	46	Mozambique	96	97
Italy	45	28	Honduras	97	98
Brazil	46	39	Paraguay	98	91
Mauritius	47	43	Bolivia	99	90
Slovak Republic	48	41	Bangladesh	100	93
Jamaica	49	53	Angola	101	99
Botswana	50	55	Ethiopia	102	101
Indonesia	51	73	Nicaragua	103	94
Turkey	52	56	Chad	104	102

Source: World Economic Forum