Shaping the Future of Businesses and Nations: The strategic importance of ICT

Stanley Beckford
The University of the West Indies, Jamaica

Follow this and additional works at: http://aisel.aisnet.org/globdev2012

Recommended Citation
http://aisel.aisnet.org/globdev2012/12

This material is brought to you by the Proceedings Annual Workshop of the AIS Special Interest Group for ICT in Global Development at AIS Electronic Library (AISeL). It has been accepted for inclusion in GlobDev 2012 by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.
ABSTRACT:
The evolution of Information and Communication Technology (ICT) over the last 40 years has had a profound impact on the development and functioning of society, businesses, Governments and nations as ‘competitive states’ (Al-Jaghoub & Westrup, 2003). In fact, it may be argued that no single era of technological advancement has had a more significant impact on the way we live and work. We live in an ICT enabled world where all our activities are now in some way influenced, inspired, and linked through information and communication technology. But what exactly is ICT and of what strategic importance is its use in shaping the future of business, governments and nation states? This paper will attempt to answer these questions by reviewing relevant literature in the field. This paper will support the view that the strategic use of ICT is now essential to the creation of a competitive advantage for firms (Barney 1991; Porter 1996), the efficient running of governments and the creation of competitive positions for emerging nations in an integrated world.

Keywords: Business, Nation, Development Strategy, ICT.
Introduction

“An issue, decision, opportunity or challenge is “strategic” if it is likely to significantly alter the trajectory of future performance”

(Warren, Strategic Management Dynamics, 2008)

Background

There is a tremendous amount of on-going debate in the public space about the increasing impact of information and communication technologies (ICTs) on the way we live, work and play as members of an increasingly integrated global community. From the rapid development of the internet, the on-going evolution and proliferation of mobile technologies such as laptop computers, smart phones and tablets; to the increasing homogenisation of enterprise resource planning (ERP) capabilities as firms and states migrate to common ERP platforms and move their data warehousing to the ‘clouds’; have simultaneously created a tremendous amount of excitement for those of us living through this rapid period of change, but also tremendous anxiety and fear as we learn to operate in corporate and national systems that are increasingly interlinked. With all that we are now able to do see and share using ICT, it is not surprising that we might be tempted to view ICT as being able to either solve the problems of the world, or to create more problems for the world than we will be able to solve. Somewhere in between these extreme perspectives lies the true strategic importance of ICT for firms and nations states in today’s dynamic and exciting world.
Perhaps a balanced perspective on the strategic importance of ICTs is one that sees it as a resource (Barney, 1991) that if used effectively, can help to change the trajectory of future performance (Warren, 2008) for the user or owner of the resource.

This paper is concerned with explicating ICT and its potential strategic impact on helping to alter the performance of firms in today’s extremely competitive environment, and on how the strategic use of ICT may also positively impact the development of less developed, or developing economies.

Specifically, this paper will organize and integrate previous research and conceptual work on the issues surrounding ICT and its implications for firm performance as well as research on the impact of deliberate ICT strategies on the development agenda of nation states such as Singapore and Ireland. The paper will do the following:

1. Develop a working definition of ICT by integrating perspectives from the literature.
2. Discuss the relationship between the firm, strategy and the role of ICT
3. Identify some of the firm specific challenges related to the absorption, diffusion and use of ICT to improve firm performance.
4. Examine the strategic potential of ICT as an enabler of development for Lesser Developed Countries (LDCs).
5. Suggest some of the key factors that should be considered by firm executives and government officials concerned with improving performance in an ICT enabled world.
Scope of Literature Review

This literature review covers over 55 empirical and conceptual studies published between 1990 and 2011. The review focusses primarily on work that has been published in peer-reviewed scholarly journals such as *Sloan Management Review, Journal of Management, International Review of Law Computers & Technology, Academy of Management Executives, The Accounting Review, and Harvard Business Review*. These journals are regarded as having a high level of acceptance and credibility. The review also included other works such as texts and conference proceedings that are regarded as significant and that help to further develop an appreciation for the topic and the related issues for firms and nations states.

WHAT IS ICT?

While the term Information and Communication Technology (ICT) may seem self explanatory, it is important that we define ICT in a very deliberate way for the purposes of this review. In a paper released by the United Nations Development Programme (UNDP) Bureau for Policy Development written by Victoria Tinio (*ICT in Education*), ICT is defined as a “diverse set of Technological tools and resources used to communicate, and to create, diseminate, store, and manage information.” The ‘technologies’, in Tinio’s view, include the internet, computers, radio, television and telephony. Tinio’s listing of the components of ICT, while applicable to her specific focus on the use of ICT in education, is limited as she does not include in her definition ICT Infrastructure & mobile technology. Another author who addressed the issue of the impact of ICT on education is Richard Katz. In his article (*The ICT Infrastructure: A Driver of Change, 2002*) Katz identifies the infrastructural components of ICT as “Hardware”, “Networks”, “Leadership & Skills”. Hardware includes computers, servers, processors, routers etc. While networks deal not just with the connections (wired and wireless) between servers and computers, but also the bandwidth available. His inclusion of “leadership and skills” in his discussion on ICT infrastructure may not be readily accepted by all as part of ICT Infrastructure in the strictest
sense; my own view however is that any meaningful definition of ICT infrastructure, given the current dynamic & socially integrative nature of technologies, must include as part of the equation, the human skills and capabilities that interface with all the other components of ICT listed above to form the ICT infrastructure in place at the level of the organization and nation state.

By combining the definitions put forward by Tinio and Katz therefore, our working definition of ICT for the purposes of this discussion is “all the technological devices, hardware, software, and human capabilities used to communicate, create, disseminate, store, and manage data & information”.

THE STRATEGIC USE OF ICTs:

Strategy – A working definition:

Strategy “is the detailed and continuous process of defining and realising the path to a future desired state for any entity or individual”. In this section we will examine theories on the Strategic use of ICT within the following contexts:

1. The context of the ‘for profit’ firm constantly in search of a competitive advantage.
2. The context of Governments and Nation States in search of opportunities for development.

STRATEGY, ICT AND THE FIRM

According to Michael Porter (How Competitive Forces Shape Strategy, 1997), there are always external forces impacting on the ‘firm’ which limits its ability to compete. Porter argues that an awareness of these forces allows the firm to “stakeout a position in the industry that is less vulnerable to attack”. Strategy, in Porter’s view (What is Strategy, 1996)
“is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of values”. Porter identifies his famous “five forces” impacting the firm and while not fully relevant to our entire discussion because of the context in which they are framed, the principle of being able to identify and claim a position that gives a competitive advantage to the firm is at the heart of strategy and therefore relevant to this discussion on the strategic use of ICT. In his article on Strategy and the Internet, Porter (2001) takes a close look at the Internet, as a vital component of ICT in today’s world, & argues that firms cannot hope to compete without embracing the internet. In his view, it is the strategic use of the Internet & not just access or the acquisition of internet technologies that will help to give the firm a competitive advantage in today’s interconnected world. The internet, Porter argues, must be seen as an “enabler” of the firms’ strategy and not the strategy in and of itself.

Another perspective on “Strategy” that is relevant to our discussion is that of the resources based view (RBV) (Barney, 1991) (Helfat & Peteraf, 2003) which argues that a firms competitive advantages is derived from the resources that it owns or has access to and the more heterogeneous the resources, the greater the chances of achieving a sustained competitive advantage. In his definition of resources Barney (1991) includes the firms “capabilities” its ability to strategically utilise its resources that may provide a competitive advantage for the firm. With regards to ICT and the firms “IT capabilities” (Mata, Fuerst, & Barney, 1995), this perspective supports the inclusion of “leadership and skills” by (Katz, 2002) in his discussion on ICT infrastructure, and Porters arguments surrounding the strategic use of the internet to gain a competitive advantage. At the very heart of it, it is the ability to use ICT in its current and emerging forms that will result in real advantages for the firm.

In their article Boudreau, Loch, Robey, & Straud (1998) argue that “business success depends on expanding the global reach of the organization” and suggest that ICT is critical in supporting the transition from a local, to a transnational organization. The authors identified several challenges faced by the firm in an integrated world however, chief among these is designing an organization that is “capable of being efficient and responsive” in the global environment. They argue that the strategic use of ICT enables the creation of virtual organizations that allows employees to work from discreet locations around the world and
improves their chances of remaining relevant to their customers. Boudreau et al make reference to Porters 1986 article (Changing Patterns of International Competition) in which Porter argues that ‘competition in global industries requires the integration of activities on a worldwide basis’. This process of integration however is not an easy one. Transnational firms must effectively address varied challenges, many of which ICT provides some meaningful solutions for. Here are some examples;

- The linking of transactions through the use of “Inter-organizational systems”
- Overcoming the challenges of culture and language with the use of language translation software.
- The creation of virtual organizations where individuals can work and interact from anywhere in the world.

These are but a few of the strategic capabilities that ICT provides to firms, others include EDI, e-commerce & cloud computing; capabilities that allow firms to significantly reduce transaction cost, exponentially expand the markets for their goods and services from local to global with the click of a button; and overnight remove limits on their data storage capacity and hardware cost by moving to the ‘clouds’.

THE REAL WORLD CHALLENGES OF ICT AND FIRM PERFORMANCE:

From the discussions so far, one would assume that ICT is a panacea for all the firms’ problems of growth, integration, market access and global competitiveness. The truth however is that ICT is not. The associated technologies and their rapid rate of evolution create varied challenges and opportunities for firm performance. In this section we will review some of the literature which deals with business intelligence and knowledge management, organizational growth both organically (with particular references to the challenges of SMEs) and through mergers and acquisitions (with particular reference to large firms).
Business Intelligence and Knowledge Management:

Business intelligence effectively involves the use of data warehousing and on-line analytical processing to systematically collect, store, validate and analyse data for the purposes of decision making (Cody, Kreulen, Krishna, & Spangler, 2002). The large volumes of data generated by firms would simply be un-manageable without ICT. The ability to absorb this constant flow of data and put it to strategic use is absolutely essential to effective firm performance (Elbashir, Collier, & Sutton, 2011).

Knowledge Management systems are concerned with capturing, and utilising the range of unstructured information in the organization for strategic use much of which is usually in text form, but may provide useful insights into better understanding business data (Cody, Kreulen, Krishna, & Spangler, 2002).

Now while the strategic significance for business intelligence & knowledge management systems are clear, there are challenges in many instances that firms must overcome to implement these tools and realise the strategic benefits. These challenges range from requirements engineering to implementation and integration into the day to day operations of the firm (Riabacke, Larsson, & Danielson, 2011). Business Intelligence (BI) systems are prone to cost overruns due to project creep, and share a poor “risk / reward “profile with other ERP and CRM systems (Woodside, 2011). Realising the true strategic value of BI systems therefore requires the right social support structures (implementation environment) where the “leadership and skills” (Katz, 2002) of the organization promote enterprise wide integration into the business processes (Woodside, 2011). Woodside (2011) put forward the “implementation Success Model” in which he identifies the key “implementation factors” and the key “Success Factors” for the implementation and integration of BI tools as among other things, a ‘collaborative culture, customization, resources, timely information, perceived success and satisfaction’ (see Woodside 2011).

Woodside’s model correctly identifies some of the critical components necessary for successful implementation. Realise however that while the model lays them out in a structured way; in the Proceedings of SIG GlobDev Fifth Annual Workshop, Orlando, USA December 16, 2012
real world all organizations will have significant challenges with creating and maintaining a **collaborative culture**, effectively **communicating needs** and benefits, maintaining top management focus through to successful implementation, making the required **resources available** at all stages of the process, and **ensuring user satisfaction** and continued organizational **training** which has a “positive correlation with firm performance” (Sircar, Turnbow, & Bordoloi, 2000). In this regard, the role played by management in ensuring successful ICT projects cannot be underestimated.

**The Role of Management:**

Management ultimately has responsibility for setting the tone & creating the right environment for success. In spite of this fact, it would appear from the literature, that many ‘non ICT managers and business leaders have a hard time wrapping their arms around ICT projects and issues, and quite often affect the outcome of ICT projects based on their perceptions (King & Teo, 1994) of its importance. This point is borne out in the work of Tallon, Kramer, & Gurbaxani (2000) who looked at the relationship between the perception of executives towards the business value of IT, and the strategic value derived from the implementation. According to their results, Tallon et al. (2000) noted a positive relationship between management practices driven by perception, firm performance & the value derived from the IT projects.

Fortunately, research is confirming that senior managers are becoming more and more aware of the strategic importance of ICT and are in many instances focussed on creating environments that support the optimization of investments in ICT. In a 2004 report on “key issues for Executives” in the MIS quarterly, Jerry Stevens (2004) shared the results of a formal survey which found that the top five management concerns regarding IT were as follows:

1. **IT and business alignment**
2. **Attracting, developing, retaining IT professionals**
3. **Security and privacy**
4. **IT strategic planning**
5. **Speed and agility**
These are all very important issues, and as we have seen from the literature (Katz 2002; Elbashir, Collier, & Sutton 2011), issues of planning and human resources (absorptive capacity) are critical. The issue of strategic business alignment (Kaplan & Norton 2001; Sull 2007), which is relevant to every key business process, was also noted by another researcher on ICT (Pillania, 2008) who also identified a “properly aligned strategy and top management involvement” (Pillania, 2008) as critical success factors for the effective use of KM systems in SMEs.

ICT tools have certainly proven difficult to implement, particularly in SME’s (Menkhoff, Yue Wah, & Loh, 2004), but they do offer tangible strategic benefits to firms. It is therefore incumbent on CEO’s to understand their roles as it relates to effectively leading the charge on ICT projects which have strategic significance for their firms (Earl & Feeny, 2000).

In my view, there are so many areas in which the effective implementation and use of ICT tools can pose a significant challenge to firms that one may argue that achieving success through effective implementation and optimal use in a culture of continuous learning, may in and of itself develop “dynamic capabilities” (Teece, 2007) within the firm & provide a source of sustained competitive advantage.

**ICT and firm Growth: (The case for SME’s)**

If you look at the business landscape ranging from large multinationals to medium, small and micro enterprises, it may be argued that nowhere in the commercial landscape does ICT offer greater opportunities for strategic transformation and growth than in the small and medium enterprise sector (SME’s). Intuitively, there are several reasons why this may be the case; for example, the presence of the internet and e-commerce platforms puts the smallest of enterprises on the world stage simply by setting up a website and making its products and services available to anyone who chooses to patronise the business. Credit cards and e-payment platforms now allow for simple and reasonably secure platforms for the transacting of business; and large
logistics firms such as UPS, or Federal Express provides the means to move tangible goods from one place to the next almost overnight. A small enterprise with a good web designer can develop a site that is just as capable and as attractive as a large multinational corporation, and potentially receive as many or more hits as well. These technologies really level the playing field in the virtual world.

In their 2007 paper (Maguire, Koh, & Magrys) explore the use of ICT by SMEs in the United kingdom to gain competitive advantages, and found that more than 70% of respondents confirmed that the use of ICT “aided their business in one or more of the accepted “competitive areas” (Maguire, Koh, & Magrys, 2007). These results, though encouraging, could have been better if it were not for the following limitations identified by the authors.

- The lack of time and planning to take full advantage of ICT
- A shortage of skills and staff capable of using the technologies. (Pollard & Hayne, 1998)
- The cost of ICT hardware and software.

Most SMEs surveyed identified cost reductions as the major gain derived from their limited use of ICT (Maguire, Koh, & Magrys, 2007). This is particularly concerning as the ICT platforms can offer so much more growth opportunities to SMEs. This challenge of sub optimal utilisation of ICT by SMEs to support growth was by no means limited to the UK firms. In their open report on ICT use in Small Businesses in Sub-Saharan Africa, Ndiwalana & Tusubira (2006) argued that “academic networks” need to work more closely together to address the limited ability of persons to utilise ICT in small businesses. Their report touched on the obvious lack of skills to use ICT in SMEs as the main limiting factor. There are however other considerations; poor attitudes of SME towards ICT maybe one such. Fulantelli and Allegra (2003) found that ‘poor attitudes’ towards ICT among SMEs in Italy were a barrier to its use to gain competitive advantages for growth. Some of the solutions that they outlined for this challenge included

- Structured state intervention to create a full awareness of the huge market expanding potential of ICTs
- The gradual introduction of ICT into SMEs to allow for better assimilation.
- The need for continuous training and support of business owners and staff.
- Cultural re-engineering through ongoing education.

It would appear that these issues are particularly pervasive in SMEs across the globe and present real opportunities for governments to intervene in ways that support the growth of SMEs through the improved use of ICT and by extension, support the economic advancement of nations. This point is by no means new or revolutionary; there are numerous cases of this which we will touch on when we review the literature relating to ICT and national development.

**ICT and Growth through Mergers and Acquisitions:**

For large enterprises, opportunities and challenges are also present, but of a somewhat different nature. For many large firms, Mergers and Acquisitions have become an extremely pervasive strategy for growth. Between 1993 and 2004, in what is regarded as the 5th Merger Wave, most M&As were between firms in the financial services and telecom sectors (Gaughan, 2007). According to Cantwell & Santangelo (2002) a strategic imperative that drives M&A activity among technology enabled firms is the need to access external resources and capabilities in a rapidly changing world. The rate of change driven by technology makes it impossible for any single firm to effectively develop the capabilities needed to compete in a world with rapidly changing boundaries (Cantwell & Santangelo, 2002).

One of the advantages that ICT should provide is the relative ease with which ICT enabled firms should be able to integrate their back office functions (data, electronic records, transactions, etc.). This assumption of ‘relative ease’ however has proven to be faulty in several instances. In his research paper (ICT Integration in an M&A Process) Michael Larsen sites the work of Brown (2001) who found that 67% of firms do not conduct IT due diligence before the deal. Further, approximately 20% of M&A deals are cancelled once the IT due diligence is done (Brown, 2001), and merged companies ‘on average have to spend 15% more’ on their combined IT budget for the first few years of the merger to integrate their systems (Brown, 2001). But why is this so? In the article on “Contrasting IT Capability and Organizational Type” (Byrd & Byrd, 2010) argue that, in keeping with the Resource Based View of the firm (Barney, 1991), organisations have both “spanning IT capabilities” and “inside out” IT capabilities (Byrd & Byrd, 2010).
Byrd, 2010). “Inside –Out IT capabilities” refer to the resources the firm is able to deploy from within the organisation in response to market needs, while “spanning IT capabilities” relates to the firms’ ability to analyse its internal and external capabilities and integrate the resources available to it from internal and external sources to meet its requirements (Byrd & Byrd, 2010). The point of interest for our discussion is that the authors (Byrd & Byrd, 2010), state clearly that the ‘spanning’ and ‘inside out’ capabilities of firms are heterogeneous. No two firms have the exact same IT capabilities which are developed over time through a complex mix of resources and experiences creating a phenomenon referred to in the literature as ‘causal ambiguity’. This is perhaps where the challenges of integration arise when firms move to combine their ICT systems during the M&A process. While the operating systems may be the same, the subtle differences in how they are configured and used might be responsible for significant integration challenges and the failure to realise the expected competitive advantages from some M&A activities. It would seem essential therefore that firms contemplating growth through mergers and acquisitions pay special attention to ICT integration issues.

GOVERNMENTS & THE DEVELOPMENT AGENDA: THE STRATEGIC IMPORTANCE OF ICT.

Information and Communication Technologies is not only rapidly changing the way firms relate, communicate and integrate with their markets; it is also simplifying the way governments function and interact with their citizens, through “e-governance” (Basu, 2004) and has created new opportunities for economic development in less developed countries (LDCs) in ways that have not existed before. Capitalising on these opportunities for development however requires a very strategic and pragmatic approach to development by governments and their constituents to realise the benefits that ICT may potentially offer. This section of our review will focus on literature relating to the strategic use of ICT for national development.

Al-Jaghoub & Westrup (2003) in their study on the nation state of Jordan’s quest to use ICT as a platform for development compared the path being taken by Jordan with those of two other nations that strategically used ICT to transform their economy; these are Singapore and
Ireland. Let us look at Singapore and the strategic use of ICT through the eyes of Arun Mahizhnan in his 1999 article (Smart Cities: The Singapore case).

In his article Mahizhnan (1999) traces the history of Singapore from a trading post, to an industrialised nation in the 1970, and its deliberate transformation to an “Intelligent Island” where the creativity and industriousness of its people make full use of ICT for economic development. A careful review of Mahizhnan’s article brings three key points to the fore that may account for Singapore’s success as a nation that has used ICT to help propel itself to development status.

1. **Culture:** Singapore’s history, as outlined by (Mahizhnan, 1999)speaks to a people not blessed with abundant natural resources, but who of necessity have realised the importance of relying on their use of knowledge to create wealth.

2. **Strong Government Leadership** (Corey, 1991): The presence of very strong and visionary leadership in the emergent era of Multi-National Corporations (MNCs) lead Singapore as a small nation state to embrace MNCs as vehicles for industrial development rather than exploiters of the poor as many other LDCs did at that time. Mahizhnan (1999) credits Singapore’s success in the 1970’s and 1980’s as an industrial nation to the proactive policies of the government that matched its need for jobs and economic development with the MNCs’s need for cheap labour. Mahizhnan (1999) goes on to outline the deliberate strategy of the government to use ICT to fully utilise its human resources in the 1980s with great success. Cerny (1997) put forward the view that as nations become part of the global arena, the political influence of the state will be diminished, in effect subsumed by the global economic agenda. Singapore seemed to have defied this view in the move from an industrial led state to an ICT led state over the last two decades by embracing and leveraging the emerging trends for growth. It will be interesting to see how the influence of the state is transformed over the next decade given the success that deliberate leadership has brought to Singapore.

3. **Infrastructure:** The state of Singapore deliberately institutionalised the ICT strategy through a number of clear initiatives:
a. The establishment of the National Computer Board “to spearhead the IT development programme” (Mahizhnan, 1999)

b. The roll out of an IT Education “Master Plan” through its ministry of education which saw computer skills as being as fundamental as basic literacy. Educators were trained and retrained to use ICT; every one in two children is given a computer and lessons are delivered using ICT.

c. Significant investments in building out the ICT infrastructure through schools, libraries, homes and communities.

Singapore’s success at achieving its objective of becoming known as the “Intelligent Island” was not a matter of luck, or chance. It was a carefully developed and executed plan over a number of years.

In the case of Ireland, who also used ICT as a platform for development in the 1980’s, their path to ICT led growth also shared some similarities with that of Singapore:

1. The presence of a highly educated workforce. (McBriety & Kinsella, 1998)
2. Government leadership that provided incentives for FDI led growth. (Coe, 1999)
3. The Development of ICT infrastructure by FDI investments in the sector to take advantage of the educated workforce (Coe, 1999).

It is instructive to note the similarities between Singapore and Ireland as it relates to the ingredients for ICT as a successful platform for national development. But let us look at other cases to see if similar patterns emerge.

Some work has been done in Latin America and the Caribbean (LAC) to determine if the presence of ICT had any impact of local development in a number of LAC (Finquilevich, 2003). The results, based on the research presented are mixed. In most cases, governments in the LAC region are primarily focused on driving infrastructure to facilitate access (Finquilevich, 2003) with insufficient focus on promoting productive use. There are programmes that focus on improving the educational levels of communities in order to take advantage of the technology as well as a number of initiatives to create ICT industrial zones, but these efforts were largely discreet and did not present sufficiently robust programmes to produce the kinds of results.
expected. Finqulievich (2003) points to a few examples of good successes in the region however, chief among these were Cuba, Mexico and Brazil. In all three cases, a clear presence of deliberate government leadership expressed through the presence of institutionalised programmes to direct the ICT agenda was present. Focus on building out the ICT infrastructure was also present, as well as an educated pool of persons with the required skills (Katz, 2002) to take advantage of the technology.

The fact however, is that while many LDCs have made strides to close the “digital divide” (Molina 2003; Barclay & Duggan 2008) between themselves and developed states, the focus in many instances appeared to have been on the anecdotal indicators of investments in infrastructure and access, and not the substantive elements of ICT human capacity (Ross, Beath, & Goodhue, 1995) and strategic use (Devaraj & Kohli, 2003). If developing countries do not have the capacity to “invent and adapt new technologies” (Desai, Fukuda-Parr, Johansson, & Sagasti, 2002), then the development opportunities presented by the new ICT age may not be fully realised.

**THE WAY FORWARD FOR STATE DEVELOPMENT AND ICT:**

While it is foolish to suggest that the effective adoption and use of ICT will put LDCs’ on a path to sustainable development, it would be equally foolish to suggest that ICT does not have a significant role to play as part of an overall development policy (Franklin, 2006) for any nation in today’s global environment. There are a few key points from the review of the literature that policymakers may want to view as prescriptions for successful development projects:

1. The common denominator in all cases of successful ICT led programmes is the quality of the human capital available to adopt and creatively use the technology. This applied in both the Developed and Developing nation states reviewed.
2. Successful ICT led development programmes had committed leadership in place that made the key decisions regarding direction and the allocation of resources.
3. All successful ICT programmes reviewed had formal institutional structures in place charged with leading the development process.

Now while ICT may not be the area chosen as the path that will place all LDC on the path to developed status, I would suggest that the three key elements noted above are relevant regardless of the path chosen for national development, and that ICT use will have a significant role to play.

THE WAY FORWARD FOR FIRMS AND ICT:

The die has been cast for firms in the 21st century (established, emerging and yet to be conceived): ICT, like electricity (Porter, Strategy and the Internet, 2001) is an essential part of any business. The rapid pace at which technologies are developing demands dynamic capabilities (Teece, Pisano, & Shuen, 1997) as a core competence from firms and a clear understanding by managers of their roles in ensuring that their organizations strategy and ICT capabilities are fully aligned. From a review of the literature, some of the key issues that firms will need to wrestle with successfully have to do with the following;

1. Ensuring that proper IT governance systems are in place (Weill & Ross, 2005), (Peterson, 2004).
2. The retention and development of ICT savvy human resources which may become increasingly difficult as the outsourcing of data management with cloud computing grows in use.
3. Developing an appetite for ICT risks as organizations become more integrated.

The only predictions that can be made with any certainty about the future of firms and the strategic use of ICT, is that firms will have to continually adapt. The time frame between transformations may get shorter, and the speed with which firms have to transition with the changes in ICT may get much faster.

Faced with this reality, at the forefront of the minds of every CEO must be two fundamental questions;
a. How do we create and re-create an organisation that remains relevant with our consumers and

b. How do we effectively manage business risk in all its forms in an ICT enabled world?

The answers to these questions may never be found, but the search for them should help to keep
the firm moving forward & help to identify / create new competitive positions for the firm as the
boundaries continually shift.

Conclusion:

We have had a broad sweeping discussion on the importance and impact of ICT for firms and
nation states who must find a way to compete and remain relevant to its stakeholders in a rapidly
changing and increasingly integrated world. The objective of this paper was not to put forward
new constructs for consideration and further research, but rather to synthesise existing literature
in a way that helps to bring clarity to the impact & role of ICT on the development agenda of the
firm and nation state, and help practitioners to better appreciate some of the key issues and
identify some of the key components required for the effective use of ICT in today’s
environment.

The evolution of Information and Communication Technology (ICT) over the last 40 years has
certainly had a profound impact on the development and functioning of businesses, Governments
and nations. While definitions on ICT may vary, we chose to define ICT as not just the
technological devices, hardware, & software, but also the human capabilities used to
communicate, create, disseminate, store, and manage data & information.
The paper suggest that the effective integration and use of ICT may create a competitive advantage for firms that develop an appetite for ICT risk, have an effective IT governance system in place and develops ICT savvy human resources and heterogeneous processes.

We have also suggested that ICT may support the development agenda of less developed / developing economies that deploy an ICT growth led strategy that has at its core, strong and focused government leadership with a dedicated institutional structure in place charged with leading the development process, and the deliberately deployment of resources to develop human capital & IT infrastructure.

While investing in ICT should not be seen as a growth strategy for the firm or the nation state in and of itself, it should be recognised that ICT is an important enabler of effective performance in today’s integrated world. It is the firm or nation state that most effectively develops and leverages its resources, which includes its ICT capabilities that will achieve the highest levels of sustained growth and performance.

---


ii Beckford, S. “Strategy Dynamics Take home exam, Question 1” Mona School of Business 2011.
REFERENCES:


*Proceedings of SIG GlobDev Fifth Annual Workshop, Orlando, USA December 16, 2012*


Proceedings of SIG GlobDev Fifth Annual Workshop, Orlando, USA December 16, 2012


