eBusiness Policy Support Framework

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Presented to
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Declaration

This is to declare that this term paper has been completed by myself (i.e. Mohammed Riyaz Ahmed, HFU Student ID: 241661) without any help from any other person. In this term paper I have attempted to present the paper "eBusiness Policy Support Framework". The structure of the term paper has been decided by myself and I have used the article "eBusiness Policy Support Framework (By Rimantas Gatautis, Elena Vitkauskaite)" as my main source and sources other than this article which have been mentioned in the paper and my own knowledge and thoughts has been properly cited. Moreover, it is to clear that no illegal means have been used in completing this term paper.
Contents

Abstract ........................................................................................................................................................ 4

1. Introduction ............................................................................................................................................. 5

2. E-Business impact .................................................................................................................................... 6
   2.1 ICT impact on business functions: ................................................................................................... 6
   2.2 Sectoral Differences in eBusiness Adoption ..................................................................................... 8
   2.3 Regions: geographic dimensions of eBusiness ................................................................................. 9

3. Leading trends in eBusiness support practises at EU level ............................................................... 10

4. Conclusions ............................................................................................................................................ 12
Abstract

In the current state where most of the large firms want to globalize their business by increase in use of Information Communication and Technologies (ICT), small and medium size enterprises (SMEs) are slower in adoption of new ICTs. The Principal reasons of SMEs for non-adoption of ICTs are lack of applicability and low interest to change their business models when returns are unclear. The key barriers slowing ICT adoption are competition among companies in the target group, Lack of awareness, often combined with mistrust regarding ICT and ICT service providers, costs, lack of internal ICT and management knowledge, Network infrastructure issues: access and interoperability, Legal uncertainties.

The European Commission has identified 3 factors that make it difficult for SMEs, in particular, to engage more fully with ICT and to develop sustainable business practices. They are:

1) The relatively high costs associated with investments in ICT.
2) The lack of technical and managerial skills, and
3) Unwillingness on the part of SMEs to network with other enterprises.

The issues for governments throughout the European Union (EU) are to advance suitable business environments for eBusiness and ICT uptake, and to implement the programs to overcome market failures to the extent that they are needed in particular areas like skill formation and specialized information. Governments have a wide range of SME eBusiness and internet use programs.

The main objective of this paper is to elaborate eBusiness support areas and empirically validate proposed eBusiness policy support framework. The methods of research are systemic, logic and comparative analysis. In this paper, Rimantas Gatautis, Elena Vitkauskaite have proposed key eBusiness support areas around key dimensions of eBusiness. They have defined dimensions as functional, sectoral, and regional on three distinct levels i.e. Micro (the level of the firm), Meso (the level of the region), and Macro (national/international level). This proposed framework summarizes the main policy directions derived from the analysis and the key areas of eBusiness support - Business environment, Skills upgrading, Network infrastructure, Trust infrastructure, Digital products and information services, Intangible investments and assets, Information, Government on-line.
1. **Introduction**

There are many definitions of e-business, but they all imply some manner of electronic operation for business transformations. The DTI describes e-business as: “When a business has fully integrated information and communications technologies (ICTs) into its operations, potentially redesigning its business processes around ICT or completely reinventing its business model”\(^1\).

In general e-business is a term used to describe businesses run on the Internet, or utilizing Internet technologies to improve the productivity or profitability of a business. However, e-business is not just about e-commerce transactions or about buying and selling over the Web; it is the overall strategy of redefining old business models with the aid of ICT, to maximize customer value and profits. In a more general sense, the term may be used to describe any form of electronic business through a process involving ICT.

One of the first to use the term e-business was IBM in October, 1997 referring it to the increased utilization of information and communication technology (ICT) in business processes. European Union launched its ambitious eEurope program in 2001 aiming at pushing Europe at the global forefront in eBusiness uptake, among other things. Ever since, eBusiness policy has been at central focus on regional, national, and European level.

E-Business support policy is usually targeted to encourage and assist small and medium size enterprises (SMEs), to use Information and Communication Technologies (ICT) in a way that will maximize their competitive advantage. Effective use of ICT across all sectors of the economy can act as an element to increase competitiveness.

Information and communication technology (ICT) connectivity (PCs and Internet) is very widespread in businesses of all sizes. As is the case with all technologies, small businesses are the slower ones to adopt new ICTs. Furthermore, sectors are increasingly global and dominated by large firms and the structure of their value chains and operations shape opportunities for small and medium size enterprises (SMEs).

Prime concerns for the non adaptability are lack of application and little to no reason to the change of business models. SME also face generic barrier to adaptation including trust and transaction security and challenges in the area of management skills. The issues for governments throughout the European Union (EU) are to promote appropriate business environments for eBusiness and ICT uptake, and target programs to overcome market failures to the extent that they are needed in particular areas (e.g. skill formation, specialized information). Governments have a range of SME eBusiness and internet use programs. However, commercial considerations and potential returns are the principal drivers of SME adoption and profitable use (Gatautis, 2008b).

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\(^1\) “A knowledge-based view of support for small business management of e-business activities” by John Sparrow, Knowledge Management Centre, UCE Business School.
2. E-Business impact

The effects and impact of eBusiness can be mapped along three dimensions. They are (1) Business functions, (2) Structure and composition of sectors, and (3) Regional or spatial aspects of economic and business processes.

2.1 ICT impact on business functions:

Economic research has confirmed the impact of ICT on firms’ productivity. A common observation is that this effect has been larger among US enterprises over the past 10-15 years than in EU enterprises. This has been a major concern of EU policy for years. In 2006, eBusiness W@tch asked companies across the EU to assess the impact of ICT on their own business. The “efficiency of business processes” and “work organization” are the areas where most companies have experienced positive effects (see figure 1).

![Figure 1: Perceived ICT impact on the business](Source: eBusiness W@tch (2006))

This confirms, once again, that ICT is a key instrument to optimize linkages in the internal value chain and across enterprises. As a result, 55% of the firms interviewed report positive productivity effects. Customer service is another area where many companies (52%) observe positive effects from ICT; in telecommunications, the figure rises by as much as 75%. Interestingly, even in manufacturing sectors, more companies report positive ICT effects on customer service than on reducing procurement costs. Only a minority of a report (or admit) negative effects in any of the business areas surveyed. The remainder have not observed any effect from ICT, or are undecided.

The efficiency of the business process is shaped by the way the ICT impacts the business functions. There is now growing evidence that enterprises benefit substantially...
from e-business. New technologies, and in particular the Internet, transform economic sectors and allow them to do business faster and better. Companies expect that ICT will have a "high impact" in the future particularly for management and accounting, as well as for marketing and customer service (see figure 2). The anticipated impact depends, of course, on the industry and the size of a company. For example, ICT effects on production processes will be more significant for manufacturing companies. In fact, firms representing about 60% of the pulp and paper industry, ICT manufacturing and shipbuilding expect a high or medium impact on production, compared to about 40% in construction or tourism. The same applies to effects on logistics.

![Figure 2: Where ICT will have an impact in the future](image)

Source: eBusiness W@tch (2006)

Firms expect that ICT will continue to have a major impact on how they do their business in the future. In particular, they believe that ICT will become even more important as a tool to support planning, decision making and controlling. Management and controlling functions in an enterprise depend critically on ICT systems. They provide information faster, more flexibly and more concisely than would otherwise be possible. In larger enterprises, many of the regular management reports (e.g. from controlling) are automatically generated from ICT based information systems. It is interesting that marketing and customer support have overtaken production and logistics as primary application areas for ICT in the scenario of large firms.

A more detailed picture of existing eBusiness practices emerges when we look at the specific functions of business and the uses of ICT. Connectivity and basic ICT uptake have evidently progressed since 2005. By 2007, 77% of all businesses had a broadband connection (97% of large enterprises and 77% of SMEs) and 77% of businesses were using the Internet for dealing with banks. In addition, enterprises started making significant use of e-government services, inspired by progress in the greater availability and sophistication of online public services (Eurostat, Survey on ICT use in EU enterprises).
2.2 Sectoral Differences in eBusiness Adoption

The concentration, focus and impact of eBusiness depend on the business activity of companies, and on the configuration of the value system in which these companies operate. In manufacturing sectors, companies focus on procurement processes, optimizing supply chain management, and integrating with retail and distribution. In a project oriented business such as construction, applications supporting project management have a high potential (Gatautis, Vitkauskaite, 2008).

The importance of eBusiness can be different with regard to the type of the business. In tourism, online information and reservation services have become a commonplace. Hospitals aim at improving the efficiency of their internal processes as well as document exchanges within the health system by means of ICT.

ICT related industries: ICT related industries are the ICT manufacturing, telecommunication industries which not only provide the equipment and services to the other industries who need ICT for their eBusiness but also make intensive use of these technologies as part of their own business processes. The telecommunications industry in particular sets standards for the use of ICT in marketing, sales and customer care. Even small telecommunications companies use eBusiness tools for this purpose in a way that could serve as a role model for activities by their counterparts in other industries.

Manufacturing: In general, large companies drive eBusiness development in manufacturing industries. The key objectivse for many eBusiness initiatives is Supply-chain integration. Large companies from the manufacturing sector use ICT quite intensively in all application areas along the value chain like for procurement processes, in production, inbound and outbound logistics, and in marketing and customer service. Among the six manufacturing sectors surveyed in 2006, electronic business activity has reached the highest level of intensity in the ICT-related industries, i.e. in ICT manufacturing and consumer electronics. In these industries, the prevalence of large companies, intense competition, frequent product changes and production dispersion drive eBusiness adoption as compared to other industries.

Construction: At first sight, we might think eBusiness activity in the construction industry appears not to have the same amount as in advanced manufacturing sectors. However, rising technologies beyond ICT are likely to have a major impact on the sector. Technologies such as project web and 3D visualization tools are bound to have significant economic potential for the industry. For example, project oriented technologies such as project web and 3D visualization tools carry significant economic potential for these industries. Although they are not yet widely deployed in the sector, there are examples demonstrating that companies can benefit from using these technologies (Vitkauskaite, Gatautis, 2008).

Service sectors: e-Tourism is one of the most dynamic areas of eBusiness, with a major impact for nearly all players involved. ICT usage enables service providers to interact directly with customers, which puts severe pressure on traditional intermediaries such as travel agencies and tour operators. Telecommunications companies have a forerunner
position as intensive users of ICT and eBusiness in almost all application areas. Moreover, the wide diffusion of eBusiness technologies among smaller enterprises too distinguishes this sector from most other industries. Almost all European hospitals have at least an electronic system for patient data and financial administration. However, few of them use more sophisticated systems, and departmental information systems are often not integrated with each other. Core drivers of eBusiness in hospitals include cost containment, improvement of quality of care, and state regulations, for example the implementation of Diagnosis-Related Groups.

2.3 Regions: geographic dimensions of eBusiness

Differences in ICT take-up and eBusiness practices across Member States are becoming increasingly evident. In international comparisons, EU enterprises are – on average – level with their counterparts in other advanced economies in their use of ICT. There are differences within the EU, particularly with regard to the average ICT maturity of smaller companies. In general, firms in Northern European countries are more advanced than companies in Southern European countries and from most of the new Member States in linking their business processes internally and with business partners (Figure 4).

With the possible exception of the Nordic countries, the location of a company is by no means a reliable predictor of its level of eBusiness activity. This may be due to structural characteristics. In Italy, for example, sectors dominated by small firms are much more prevalent than in other countries. Since large firms are more advanced in electronic
business, aggregated data may point at a lower level of eBusiness activity in Italy. This reflects, at least to some extent, the structure of the economy rather than the overall e-maturity of firms. In contrast to Italy, the relative performance of French and Dutch companies is significantly better if the emphasis is on larger firms. These benchmarking results suggest a pronounced digital divide between small and large firms in these countries (European Commission, 2006).

3. Leading trends in eBusiness support practises at EU level

The Lisbon Summit in March 2000 set the goal of making Europe the most dynamic knowledge based economy in the world by 2010. With European productivity growth rates fluctuating between 0.5% and 1%, the low uptake of ICTs by enterprises outside of the ICT sector in Europe is a contributing factor to the failure to catch up on the US. The relatively low levels of ICT usage (as distinct from ICT investments or ICT production) by European companies has also been identified by the Economist Intelligence Unit as the main differentiating factor in the US advantage over Europe in productivity growth. It also notes Europe's weaknesses are most acute among SMEs and that success in encouraging innovation and effective ICT usage by SMEs across all sectors of the economy will have a large impact on the EU economy's ability to remain competitive (Melnikas, 2008).

The European Commission has identified 3 factors that make it difficult for SMEs, in particular, to engage more fully with ICT and develop sustainable business practices (European Commission, 2006a):

1) the relatively high costs associated with investments in ICT;
2) the lack of technical and managerial skills and;
3) reluctance on the part of SMEs to network with other enterprises.

Action by policy makers to entrench ICT-related managerial skills in the workforce has also been identified as one of the key imperatives for European policy makers and business leaders in creating a business environment where innovation can thrive and where the benefits of ICT are readily available at all levels of the economy (European Commission, 2006a).

The Commission’s action lines are shaped by continuous technological advances with unpredictable economic and business consequences. New software and service architectures are emerging that allow not only the integration of business processes within companies but also the networking of companies and totally new collaborative environments. Key technologies enabling these advances are computer Grids and service-oriented architectures.

Leading trends in the EU suggest that further disruptions to companies and markets caused by advances in ICT in the coming years will most likely be threefold (European Commission, 2007):

- **The emergence of an “Internet of Things”** where everyday objects can make simple communications on-line, enabling for example detailed and timely knowledge of product location and life cycles to be compiled, as well as individual and dynamic prices for goods.
- **The creation of “innovation ecosystems”;** for example taking the form of SME
networks which cooperate globally; dynamically exchanging resources, applications, services and knowledge. Based on computerized representations of the world’s economies and related business opportunities, such ecosystems will support radically new forms of business activity that respond very rapidly to market changes.

- New forms of flexible and mobile teamwork; dynamic and agile communities of people working in new collaborative environments supported by the Internet. To meet these challenges, enterprises have to reach key targets: increased flexibility, economies of scale and scope, cost reduction, shorter timelines, access to technologies, improved quality, and improved operational efficiency. A major effort will be required to achieve enterprise interoperability especially where the market fails to find solution.

The growth of ICT has always been marked by fluctuations of activity and there has been an element of boom and bust. It is estimated that there are 4.2 million ICT practitioners within the EU and that approximately 180 million people are using ICT at work. A study on the supply and demand of e-skills over the period 1998-2004 reported an increase in the estimated number of employed IT practitioners during this period of about 48%. After a peak in 2001 a low point was reached in 2003. There is some evidence of a cycle, and the European e-Skills Forum warned that significant e-skills gaps will again appear and called for the preparation of a long-term e-skills agenda. A 2005 industry report predicted that there would be a shortage in 2008, across Europe, of up to half a million people with advanced networking technology skills.

The ICT Task Force complains that Europe is still a patchwork of countries functioning under different regulatory systems. In addition, the adoption of best practice is too slow and an EU-wide approach is still lacking. The European e-Skills Forum has identified solutions bringing added-value at EU level, but these have so far not been implemented. Several sources report a deterioration of the image of the ICT sector and ICT work, which is reflected in the decline in the number of students starting ICT courses. Adding to the concerns related to the demographic decline, young people seem less and less interested in studying mathematics, sciences and technology, and the gender issue still remains. There is a need to communicate better with the public, especially young people, parents, teachers and women, and to adopt measures to facilitate the adaptation of the workforce.

A clear priority for the EU is to close the important gaps in the Single Market, particularly in services, and this includes: reformation of procedures, reduction of administrative burdens, and promoting transborder market access in particular for public procurement. The Commission will act to improve the institutional framework of European standardization. In particular, it will seek to speed up the adoption of open, interoperable standards and to better integrate SMEs and consumers into the standards-setting process. Furthermore, the Commission will streamline its business support and information networks. This will encourage and facilitate the uptake of new ideas and their transformation into marketable products and services, especially by SMEs. Also, at the European Council in March 2006, all Member States have set national targets for research which, if met, would raise the level of R&D investment in the European Union from 1.9% of GDP to 2.6% by 2010. This is a step in the right direction, but the key challenge now lies in creating an environment conducive to private investment in research, development and innovation.
4. Conclusions

Most of SMEs still lack behind eBusiness adoption. As discussed, the principal reasons for non-adoption are lack of applicability and little reason to change business models when returns are unclear. SMEs also face generic barriers to adoption including trust and transaction security and IPR concerns, and challenges in areas of management skills, technological capabilities, productivity and competitiveness. The issues for governments throughout the European Union (EU) are to foster appropriate business environments for eBusiness and ICT uptake, and aim programs to overcome market failures to the extent that they are needed in particular areas like skill formation and specialized information.

The proposed eBusiness support framework identifies key areas of policy support, They are:

- To build a healthy business environment for the firms to use ICT and expand the business.
- To upgrade the skills of youngsters by imposing ICT as a compulsion at schooling.
- To Improve and increase of network infrastructure.
- To Get the regulatory infrastructure right for trust, security, privacy and consumer protection.
- To provide the information to the SMEs regarding the benefits and costs on ICT.

The proposed key eBusiness support areas around key dimensions of eBusiness. They have defined dimensions as functional, sectoral, and regional on three distinct levels i.e. Micro (the level of the firm), Meso (the level of the region), and Macro (national/international level).