E-government: a new vision for success

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Abstract

One of the most important emerging applications of Information and Communication Technology (ICT) is e-government. Perceived as providing benefits to the community by overcoming the complexity of bureaucracy, increasing the efficiency of the economy, reducing services' time, and permitting businesses and citizens to connect to government information, it is likely to become a part of life for citizens and businesses. However, the initial push to implement e-government projects resulted in a number of projects that failed, either partially or completely (Heeks, 2003a). A major reason offered for these failures is that governments were applying the conventional ICT project formula to e-government, without consideration of other features that are particular to e-government. E-government has its unique combination of features and characteristics that should be taken into consideration at design and implementation stages to determine its success.

The primary aim of this paper is to identify the main characteristics of e-government in order to assess the range of aspects that are likely to affect the success or failure of an e-government project. We begin by setting out the concept of e-government, and its importance in an e-society. Noting the failure rate of e-government projects, we follow with a discussion of Critical Success Factors (CSF's) – i.e. aspects that must be taken into account to ensure the success of a project. We identify the range of aspects of e-government, and align these to CSF's. Finally, we argue that current CSF's in e-government do not take into account the full range of characteristics that apply to this sector, and that new e-government CSF's are needed in order to improve the success rate of e-government projects.

Keywords: *E-government, project failure, Critical Success Factors.*

Introducing E-government

The concept of e-government was initially introduced in 1979 by Simon Nora and Alain Minc in their report on building the civil and political society using "telematique" or telematic (Nora and Minc, 1980). They defined telematic as a combination of computer and telecommunication technologies, and described how all aspects of society - such as education, health and daily activities - would benefit from utilizing these two technologies. This would

be achieved through applying long-term strategies from government and business (Cats-Baril et al, 1994).

Currently, there are many definitions of electronic government, all falling within the same concept introduced by Nora and Minc, but no single agreed definition (Scholl, 2002). From the United Nations, electronic government is "*the application of Information and communication Technology (ICT) within public administration to optimize its internal and external functions, provides government, the citizens and business with a set of tools that can potentially transform the way in which interactions take place, services are delivered, knowledge is utilized, policy is developed and implemented, citizens participate in governance, and public administration reform and good governance goals are met"* (UNDESA, 2003a). The World Bank defines e-government as "*the use by government agencies of information technologies … that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management*" (Tsekos, 2002).

Key
Thus e-government is seen as important in increasing the welfare of citizens by utilising the benefits of ICT to support the government internally and externally, and enabling public access to government services (Gisler et al, 2001; Elmagarmid et al, 2001; UNDESA, 2003b).

Benefits of E-government

We have seen from the definitions above the perceived benefits of e-government that have encouraged governments in both developed and developing countries to instigate projects. Liikanen (2003) suggests that one of the direct benefits of e-government is in reducing the time needed to supply services provided to citizens and business. For example, in Australia the time taken to register a new business was reduced from 15 days to 15 minutes (UNDESA, 2003b). Consequently, fewer employees would be needed to provide the services, resulting in reduced administration costs. There are also benefits to the public in that services can be available 24 hours a day for 7 days of the week, and the information collected from, or distributed to, citizens will be up to date (LaVigne, 2002). Indirect benefits of e-government arise from simplifying the process of service provision (i.e. *"Overcome the complexity of bureaucracy"* (UNDESA, 2003b)), and increasing *"transparency and accountability"* (UNDESA, 2003b) of the government to the public. Thus, e-government can improve the democratic process, providing equity for citizens for accessing information and participation in political life (Liikanen, 2003).

Improving E-government

As a consequence of the perceived potential benefits of e-government many countries began to implement e-government projects. However, few of them have achieved their objectives and many of the benefits of e-government have not materialized. According to UNPAN (2003) the percentage of failure for e-government projects varies from between 60% to 80%.

So, what is it about e-government that generates this poor success rate? In the next section we discuss the factors that contribute to the success of any project (Critical Success Factors – CSF's), and then we look at those factors in relation to e-government projects.

Defining critical success factors (CSF)

Work in the area of organizational management and information systems acknowledge that certain aspects of an organization are crucial to its success. These aspects vary, and have been categorized under the generic term of Critical Success Factors (CSF's). There are different definitions of CSF; however, the original definition of CSF was introduced by Rockart (1978) as *"areas of activity which should receive constant and careful attention from management. The current status of performance in each area should be continually measured, and current status information should be made available"*. Boynton and Zmud (1984) agreed to the definition of Rockart and defined critical success factors as "*those things that must go well to ensure success for an organization*". A more specific definition has been offered by Dickinson et al (1984): *"Critical Success Factors (CSFs) are those events, circumstances, conditions, or activities that require special attention of management because of their significance"*.

It is considered important to determine these factors in the early stages of the project in order to maximize its benefits. This is done by identifying the factors that have the greatest impact on the project. However, this is not necessarily a straightforward task. Some authors recommend a top-down approach for identifying CSF's (Christine and Rockart, 1981; Freund, 1987). Others try to be more specific, identifying between three to six factors that contribute to success (Daniel, 1961), or categorizing factors as *"internal or external events"* (Dickinson et al, 1985).

It is important then, to determine those aspects of an organization that are "significant" to its operation so that they can be taken into consideration at the start of any project in order to reap the benefits of the project. If those (crucial) characteristics of an organization are ignored, the potential success of the project must be severely reduced. The following section discusses the particular characteristics of e-government.

Characteristics of e-government

E-government has a combination of characteristics that make it different to other types of electronic organization. Sakowics (2001) argues that e-government is wider than e-business in that it covers rules and connections with government agencies. Similarly, Liikanen (2003) notes that e-government differs from e-business in that governments must serve everyone, and not be selective of clients (as in business). He further comments that the main focus of e-business - increasing profitability and market share for enterprises using web technologies – is different from e-government in that the main aim of government is not one of profit. Valuing the customer, however, is a concept that can be taken from e-business and transferred to e-government (Swedberg and Douglas, 2003).

The following characteristics illustrate the breadth of the e-government domain, which includes politics, public administration, information technology and a diverse user-group.

1. Political Support

E-government as a government project needs political support to continue its progress otherwise the project management may stall and be unable to sustain the project to achieve its targets (UNPAN) (Heeks, 2003b). Furthermore, as e-government forms part of government projects to provide improved delivery of services to citizens, it has a great impact on policy

makers. Through its process, it can enhance the application of democracy in allowing *"transparency and accountability"* (UNDESA, 2003b) allowing citizens to participate more fully in political life.

2. Public Administration

E-government projects provide a new method of delivering services to the public from within the public sector scheme. These organizations have a different culture to commercial organizations, and have their own targets and objectives of providing services to citizens. Employees may feel a loss of power in transferring the provision of services to an online facility. Consideration should therefore be given within organizations to clarifying the main objectives of the project.

3. Stakeholders Culture (citizens, business)

Providing services online to the public requires dealing with a different scheme of people. The government is not targeting a specific group of people as happens in e-commerce or e-business. Although some of their services are targeting a specific group (e.g. a particular age group, as in admissions for universities) most of the other services are directed at a variety of different categories of person. For instance, traffic fines and income taxes are targeting male and female citizens of different ages within the whole country, whether they are digitally educated or not or whether they are in rural or urban areas. Therefore, e-government implementation may require a change in public culture and new methods of providing services (Cohen and Eimicke, 2002).

4. Financial transactions

As citizens and businesses may be required to pay for some services, or pay their bills or income taxes, mechanisms need to be in place to provide clearing and settlement. This can either be done directly with the government itself, or through other third parties such as banks or financial organizations. In this respect we can say that part of the e-government process is similar to e-commerce (LaVigne, 2002).

5. Information and Communication Technology (ICT)

Clearly, in order to provide services through e-government, Information and Communication Technology (ICT) components will be used. However, ICT for e-government should have specific characteristics in order to be able to provide services for citizens and business. According to IBM (2001), e-government should have the following features to increase reliability:

Flexibility

The e-government infrastructure needs to be flexible to accommodate the different systems that citizens, partners, suppliers, and other government organizations are using. In addition the systems need to be using current software to speed-up the process of applying e-government. Furthermore, government adoption of technologies used by external suppliers and partners would help to expand the e-government project significantly.

Scalability

The other issue that should be taken into consideration is the expected growth of the e-government project, and the expected IT requirements to support this growth. The e-government infrastructure should be able to increase rapidly to match the number of users with a good response time. This can be done by having "*Easily configurable components and management characteristics that remain true as the infrastructure expands*"(IBM, 2001). Other solutions that can overcome the problem of scalability are to build applications on other systems that will accept new servers.

6. Private sector

Cohen and Eimicke (2002) explain that e-government differs from private sector due to *"politics and media scrutiny"*. Consequently, productivity and customer services are not the only issue that should be considered. Conversely, Csetenyi (2000) has argued that some experts believe e-government runs on the same concept as the private sector, but on a wider scale.

7. E-business or E-commerce

Some approaches have described e-government as an *"e-business of the state"* (Schubert and Hausler, 2001). This is because the tools of applying e-business are embedded within the government. Csetenyi (2000) explained that e-commerce and e-business technologies could be applied in e-government to increase the efficiency of providing services to citizens and business. Stamoulis (2000) added that e-commerce is about providing services to citizens and business online. However, e-government is a wider concept that covers providing laws and organizes services for business over the internet.

It may well be that given these different characteristics the conventional project approach is not necessarily applicable to e-government projects, and that the unique attributes of e-government projects contribute to the potential success or failure of the project.

E-government CSF approaches

In public administration, Critical Success Factors differ from private companies. One reason is that in government agencies resources are allocated according to political priorities and not business needs. Therefore, managers at e-government projects should define factors that could help to achieve these objectives from the beginning (Garner, 1986).

Currently, few authors agree on what these factors are. Some have identified change management as playing a crucial role (Papantoniou, 2001; Cohen, 2002; Reffat, 2003). The introduction of new technologies into the organization – as required by new e-government projects – necessitates a change in the organizational framework. Included in the framework are new approaches to processes, co-operation, legal requirements, and information sharing. However, by only focusing on change management this approach places the critical success factor only at the management level, and neglects the role of technology and citizen participation.

A wider concept of CSF's for e-government is provided by Oberer (2002), who introduces both technology and the citizen into the e-government equation. Oberer notes that there should be sufficient usage of technology to support e-government. Another factor includes the notion of "demand orientation" of the services. That is, the citizen will require the government to provide fast and simple information, so that citizens no longer have to deal directly with government agencies. Other CSF's that concur with the authors above are: Organizational conditions (such as changing administrative processes, and coordinated actions regarding technology and decision making); Legal conditions (rules that relate to the access of electronic services and regulations concerning the security infrastructure).

Extending CSF's for e-government

Bearing in mind the particular characteristics of e-government, such as political support, public administration and others discussed earlier in this paper, and the CSF definitions of

"areas of activity" (Rockart, 1978) and "internal and external events" (Dickinson, 1984) we argue that the neglect of any of the e-government characteristics given may lead to a project failure. For example, if an e-government project does not get political support it is unlikely to gain the power that enables it to continue.

To say that neglecting any one of the characteristics of e-government can contribute to failure also implies that not one of these characteristics can stand alone as a CSF for e-government. Consequently, the CSF of each part of these characteristics is not enough to determine the success of the project.

Conclusion

Although different authors have defined some success factors for e-government, most of them have only focused on one or two aspects of e-government that do not consider the complete picture. Until now, research into e-government deployment has been taken from the information technology perspective of critical success factors. Many other factors, unique to e-government, are often omitted.

Following the definitions of e-government, and the envisaged benefits, it is apparent that implementing successful e-government projects would increase citizens' welfare. Despite the existence of several approaches to determine e-government success, the potential of projects failure is still very high. We have argued in this paper that e-government consists of a unique combination of characteristics that not only individually play a major role, but in combination rely on each other. The most important issue when looking for success in an e-government project is to consider all the factors that affect it. These "significant" factors (CSF's)– according to the experts referred to at the beginning of the paper – must be considered at the start of the project. We conclude then, that the consideration of these factors at the level of design would lead to more successful projects.

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