

The Failure of E-Government in Developing Countries

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E-government is often heralded as the new way forward for both developed and developing countries. There are several examples of how this new form of government leads to increased rates of development and allows for greater democracy, and how it can be successfully implemented in developing countries (e.g. Krishna & Walsham, 2005; Bhatnagar 2002). In contrast to this line of argument, the purpose of this literature review is to demonstrate how e-government fails in developing countries. Given the afore mentioned focus of this article, the criticism of the implementation of e-government in developing countries as well as the identification of a set of solutions to common problems in this field is beyond the authors current scope. Instead, this paper will serve as a study of what often goes wrong when e-government is introduced in developing countries, thereby allowing those in the field to use this knowledge to anticipate potential problems and create more robust and effective plans.

The Definition of E-Government Failure

According to the World Bank website (2005), e-government can be defined as:

“information technologies...that have the ability to transform relations with citizens, businesses, and other arms of government...[and] 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...benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.”

Given the aforementioned definition, it is evident that e-government is not merely the computerisation of a government system, but the ability of technology to achieve levels of improvement in various areas of government, transforming the nature of politics and the relations between governments and citizens.

For the scope of this discussion, e-government failure will be defined as the inability to reach the goals already mentioned.

E-Government in Developing Countries: The Current Situation

It is appropriate at this stage to establish why this literature review deals specifically with the failure of e-government in developing countries. Numerous studies have shown that it is not just e-government applications, but also information systems in general that fail in developing countries. A literature review in this field concludes by stating, “successful examples of computerisation can be found...but frustrating stories of systems which failed...are more frequent” (Avgerou & Walsham, 2000).

According to Heeks (2003) who has done a substantial amount of research in the subject area, most implementations of e-government in developing countries fail, with 35 percent being classified as total failures (e-government was not im-

plemented or was implemented but immediately abandoned), and 50 percent as partial failures (major goals were not attained and/or there were undesirable outcomes).

It is therefore reasonable to conclude that there are a large proportion of cases where e-government has failed in developing countries. This is a disturbing fact, especially as developing countries have a limited number of resources available to them, and cannot afford to wastefully spend large amounts of money typical of such projects.

Reasons for Failure

There are numerous articles available in information systems literature that deal with the failure of information systems (e.g., Lyytinen & Hirschheim, 1987; Horton & Lewis, 1991) and the failure of information systems in developing countries (Boon, 1992; Beeharry & Schneider, 1996). This paper tries to focus specifically on literature dealing with e-government in developing countries rather than the more general literature, although at times it has been appropriate to include such literature; for example when the authors have been involved with e-government in developing countries. Because the stipulated topic is part of a relatively new field, there is not much history of academic literature, or any significant changes in thinking over time. Most of the citations in this paper are of literature that has been published in the last ten years. Differing perspectives and paradigm shifts are often the luxuries of phenomena that have been in existence for some time.

According to the philosopher Heidegger (1978), the essence of technology in the world is not something technical, or a means to an end. Instead, the essence of technology is a revelation that challenges the world by ordering it and creating a concrete infrastructure. This once again can be ordered to create such a revealing and so can continue go on. Ciborra (2005) uses this framework when describing the use of e-government in developing countries; where the focus of technology is the ordering of the relationship between the administration and the citizen, in setting the boundaries between the

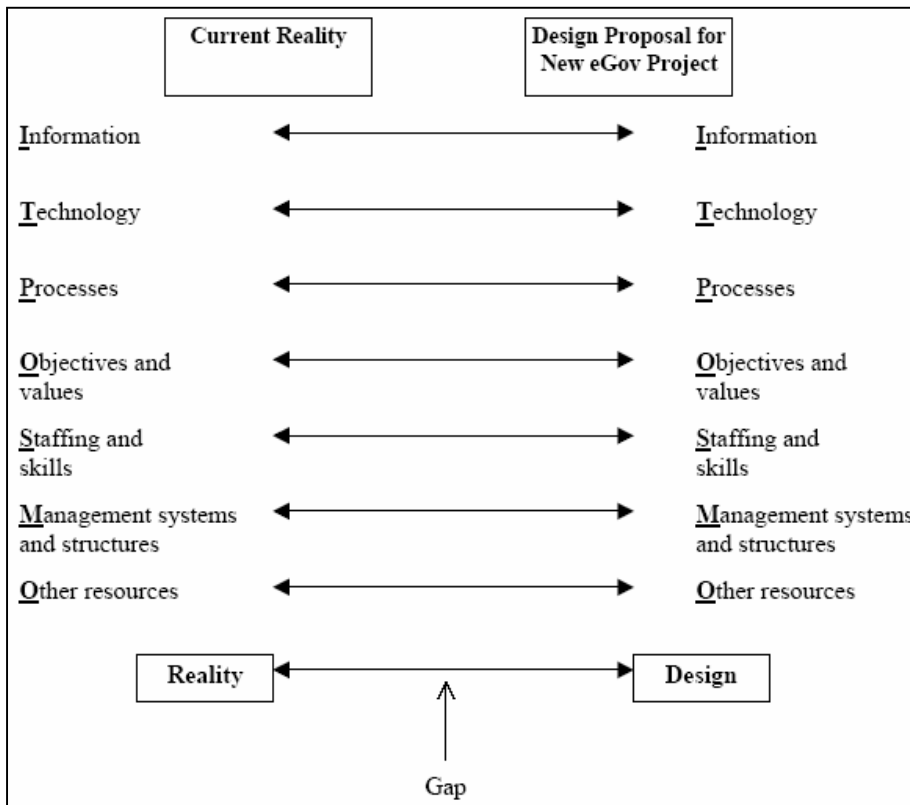


Fig. 1: Heeks Model illustrating the gap between Reality and Design. (Heeks, 2002; 2003)

state and the market, and in ensuring of greater accountability and transparency. He states that this is often the reason for developing countries to partake in e-government projects, as having such a system is believed to equate to good governance and increased development, and hence affects their receipt of aid from rich states.

Using a subjective ontology, Ciborra (2005) suggests that this motive, so often cited as the reason for the adoption of e-government in developing countries, is highly questionable. Good governance is not always the outcome of e-government; bureaucratic or military administrations will not automatically become more transparent, efficient and market-like as a result of it. Using a case study of e-government implementation in Jordan as a background, he speculates that developing countries may not be ready for such a system where citizens are seen as customers. This would mean that the privileged segments of the population may have access to the services more easily, corruption can continue as favouritisms and bribery are offered to new intermediaries, and levels of democracy and competition will not be affected. Thus, it can be deduced that Ciborra (2005) holds the view that that the notion of e-government on its own is not suited for developing countries to obtain the associated benefits; and that instead political and social changes are required alongside the implementation of electronic mediums. Alternatively, he indicates that an economy will be required to develop to a service delivery state or a minimal state (Kahn, 1997), where failures due to governance breakdown, corruption, rent seeking, distortions in markets and the absence of democracy are addressed before e-government can be implemented within it.

A contrasting and more objective ontological approach to the failure of e-government in developing countries can be seen in research by Heeks (1998; 2002; 2003), which provides clear-cut situations that

often result in failures. By examining numerous cases of IS and e-government failure in developing countries, Heeks (2002; 2003) states that a major reason for these failures is the mismatch between the current reality and the new future system (for example, an e-government platform). The chances of failure increase as the gap grows. Heeks (2002; 2003) uses the following model to illustrate this situation.

The problem that often arises with developing countries is that there is frequently a mismatch between the current and future systems, due to the large gap in the physical, cultural, economic, and various other contexts between the software designers and the place it is being implemented (Heeks, 2002).

The model has led Heeks (2003) to identify archetypes of situations where design-reality gaps are common. These are summarised below:

- **Hard-Soft Gaps:** the difference between the actual technology (hard) and the social context (people, culture, politics etc.) in which it operates (soft).

- **Private-Public Gaps:** the difference between the private and public sectors means that a system that works in one sector often does not work in the other one.

- **Country Context Gaps:** the gap that exists when trying to use the e-government systems for both developed and developing countries.

It is this idea of gaps as conceptualised by Heeks (2002) can be seen as a framework upon which almost all available literature on the failure of e-government in developing countries is based. Even Ciborra's (2005) view, where there is a gap between the political situation that is present and that which is required for successful e-government implementation can be placed in Heeks' framework. Numerous other articles talk of factors that lead to failure, and in order to create a meaningful classification, these will be organised according to Heeks' (2003) archetypes.

Hard-Soft gaps are arguably one of the most commonly cited examples of e-government failure in developing countries. An interpretive set of case studies concerning e-government projects in Kerala, India, has revealed that the numerous factors which allow individuals in developing countries to access the services effectively are ignored. These factors depend on resources, skill-levels, values, beliefs and motivations of those involved in the project (Madon, 2004). From this we can stipulate that a lack of training, skills and change management efforts all would affect the rates of failure, as this would create a wide gap between the technology and the context in which it exists.

Cecchini and Raina (2004) state that it is imperative for e-government projects to establish the service and information needs of the community that it serving, and that the technology itself should be developed in collaboration with local

staff. This would considerably decrease the Hard-Soft gap, and create a sense of local ownership. It is also important to involve the people most closely related to the project by improving local awareness of the project through promotional campaigns. Cecchini and Raina (2004) go on to say that “the local administrative and political actors need to be involved in the implementation of the project, otherwise the likelihood of failure increases dramatically”.

Jaeger and Thompson (2003) assert that an e-government system would fail if the government did not take an active role in educating citizens about the value of e-government. E-government would also fail if the users did not have the ability to use the technology to enable access of useful information and services. This would lead to a low user base, as the system would not be equally accessible by all citizens.

Linked to this is the lack of skills and training which are required to effectively use an e-government system that are available to government officials and citizens. This problem has been referred to by numerous academics (Heeks, 1999; Moon, 2002; Ho, 2002). It is a particularly significant problem in developing countries due to the chronic lack of qualified staff and training schemes, which are necessary conditions for the existence of successful e-government schemes (Ndou, 2004). The same stance has been taken by Basu (2004) who states: “there are insufficient numbers of people in developing countries trained in appropriate technologies...training opportunities are also straining to meet needs”. The low rates of literacy in developing countries make this situation very difficult and costly to change, thus accounting for why e-governments so often fail in these countries.

The issue of change also forms part of the Hard-Soft gap, as an e-government initiative constitutes the realignment of working practices and government functions. The public sector must change and reengineer its processes to adapt to the new technology and culture of an e-government (Ebrahim & Irani, 2005). This can be problematic and can result in some stakeholders resorting to politics due to their reluctance to share information, which might be perceived as a reduction of their authority (Ebrahim & Irani, 2005). If this and other forms of resistance are not managed using change management or similar initiatives (Ndou, 2004), the gap between the technology and the social context in which it operates will not be bridged.

Private-Public gaps are the next archetype defined by Heeks (2003), who uses the metaphor of square pegs and round holes to describe the situation of trying to fit an information system designed for the private sector into the public sector.

A common problem associated with the public sector are the high turnover rates of government IT staff due to uncompetitive payment and employment conditions as compared to private sector organisations (Ebrahim & Irani, 2005). This leads to a lack of public sector skills, and as a result e-government projects are often outsourced to the private sector, fuelling a

clash of culture and values, as well as large gaps between the design and reality (Heeks, 2003).

Navarra and Cornford (2005) acknowledge that private sector organisations do not operate as governments. In the private sector, planning is usually carried out from the top down, and implemented via a chain of command in collaboration with

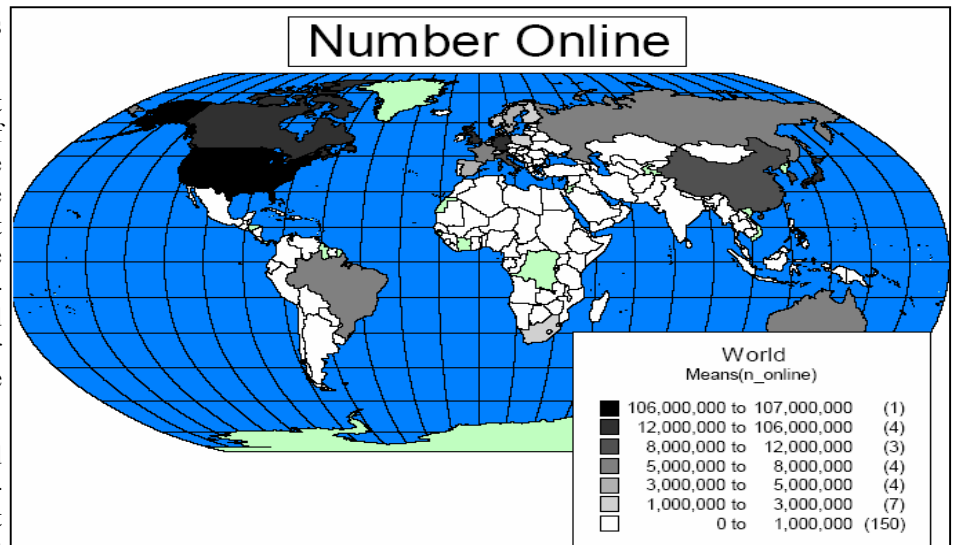


Fig. 2: The Global Digital Divide between developed and developing countries. (Norris, 2000)

training and change management initiatives. This is not the case in the public sector, and it is unwise to apply the private sector model to the creation of an information system that serves the government.

Unlike the private sector, government officials in developing countries are frequently technology centred, rather than information centred when thinking of e-government initiatives (Ballantine and Cunningham, 1999). This can cause significant gaps between the software that is developed in the private sector and that which the government expects.

E-government projects in developing countries are usually driven by individual government departments that frequently depend upon aid from donors. Once this financing ceases, there is often insufficient funding to continue the project. (Schware & Deane, 2003). Private sector IT investments rarely run out of funding, as money is usually allocated specifically for such investments.

It is unfortunate that large, impressive projects are often preferred by governments in developing countries, as these projects are seen as evidence of political action and as a response to a particular problem. However, the risk of failure is proportional to the size of the project, and large projects often fail (UNDESA, 2003).

Ciborra (2005) has also talked of the gap between the public and private sectors. Given the way that private sector systems are designed, governments would have to change their view of the recipients of these e-government projects from citizens to customers. This represents a substantial paradigm shift and is the reason that many developing countries face difficulties with e-government applications (Pratchett, 1998). Ciborra (2005) identifies numerous problems with seeing a citizen as a customer. A customer needs market mechanisms, and the right to choose between different alternatives. This is not possible for an e-government application that operates as a monopoly. Furthermore, the private sector sees customers as a

means to increased profitability, and it introduces price discrimination and similar mechanisms to create inequalities between customers. On the other hand the government must provide an equal service to all customers (citizens) to create a successful e-government platform.

The final archetype defined by Heeks (2003) is where failures of e-government in developing countries occur due to Country Context gaps. Using an off-the-shelf solution from an industrialised country for a developing country will often result in large design-reality gaps. This is due to many reasons, such as differences in working cultures, skill sets, access to technology, and relevant infrastructure. However, the former two issues have already been cited as contributors to the Hard-Soft gap, and will not be discussed here.

Developing countries often have a poor IT infrastructure, which constitutes a further obstacle for the implementation of e-government (Tapscott, 1996). There may not be consistent and reliable electricity, telecommunications, and Internet access (Jaeger & Thompson, 2004). For e-government to succeed in a developing country, it is first required to put the necessary technological infrastructure in place, so that all citizens can have equal access.

This lack of infrastructure can cause problems if an e-government model from a developed country is adopted in its entirety by a developing country. One of the benefits of e-government in developed countries is cost reduction in the transfer of information and online transactions. However due to a lack of infrastructure in most developing countries, the telecommunications costs can be high, thereby nullifying this benefit (Schware and Deane, 2003). In situations such as this, it may be more appropriate to look at low-tech solutions that fit in with the existing infrastructure (Cecchini & Raina, 2004).

Numerous people in developing countries do not have access to information and communications technology, even if the infrastructure is available. The Digital Divide is ever present, and there is a large gap between the educated elite who can afford technology, and the uneducated poor who cannot (Basu, 2004). The divide is not just within countries, but between the developed and developing countries as is illustrated by the figure below (Norris, 2000):

It is quite evident that with such a wide disparity in access to technology throughout the world, a solution in a country with high levels of connectivity will not necessarily work in a country with extremely low levels.

Conclusion

Although the archetypes provided by Heeks (2002) serve as a useful mechanism for categorisation, one can argue that his model is simplistic, and the concept of gap analysis can be applied to almost any situation of organisational or governmental change. It is fairly apparent that the larger the gap between a proposed and an existing system of working, the more difficult it will be to successfully implement the new system, due to various factors that may relate to culture, pre-conceptions and existing rigidities. Another drawback of using such a categorisation when classifying issues is the sub-

jective nature of interpreting what category a certain issue belongs to—some issues can arguably be included in more than one category. It is important to bear in mind that the most important issue is not the classification of the reasons for failure into different categories, but to understand the potential failings, thereby being more equipped to deal with such problems if they were to arise.

This literature review provides a brief overview of the reasons so many e-government projects fail in developing countries. In general, the major problem is seen to be the gaps that exist between the design and the reality of the system. The topic of e-government is still quite new, and perspectives are quite likely to change over time. There is scope for further research in both the areas of success and failure of e-government in developing countries, and undoubtedly as more real-world cases come forth, so will new interpretations.

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