Building Digital Bridges: A Critical Dictionary

This dictionary has been built up from an analysis of the Egyptian vision for an information society and is presented in the order of the sections in the document analysed. There are no page numbers associated with the available versions of the document. Hence section references are given, assuming that quotes could be found by searching.

Introduction

The one page introduction to the Building Digital Bridges (BDB) document sets the context for the rest of the document. It connects the progression of ICT and the World Summit in the Information Society.

ICT Revolution.

"The ICT revolution has had an impact perhaps even more profound that that of the industrial revolution so many years ago."

A period of rapid industrial and societal change catalysed by the maturing of computer technology. Treated as analogous to the industrial revolution of the nineteenth century with a similar level of economic and societal effects. It is viewed as a cataclysmic shift rather than an evolutionary process. As such it gives rise to a 'critical turning point'. The use of this term offers a simplifying mechanism, which reduces a complex set of interactions to a simple economic truth. The ICT revolution is considered a driver for economic development and for setting the country's strategy.

The ICT revolution is generally seen as a good development, taking a positive view of the industrial revolution as reflecting a positive view of the ICT revolution. The ICT revolution is seen as a source of essential economic growth and new jobs. Issues around the disenfranchisement of elements of the population, the potential for de-skilling and nature of the resulting jobs is not considered. The ICT revolution is considered as a phenomenon that is happening outside our control. An inevitability, it must be responded to without questioning its effect on the individual.
Hence questions should be asked as to how the characteristics of the ICT revolution can be debated and the many phenomena of the ICT revolution used to empower individuals within the population.

Digital Divide(s).

"Egypt remains firmly committed to its goal of bridging the digital divide"

The gap between those that have access to ICT and those that are excluded. Access to ICT is taken to carry with it access to economic and political power. Additionally, those with access to the technology are seen to have greater autonomy and control over their life situations. It may be seen as an electronic manifestation of other poverty divides, for example, it may be analogous to the North-South divide which was of concern at a global level in the 1970s.The gap may parallel that between the poor or economically destitute and the wealthy middle and upper class. The gap is one between the more developed countries with access to the technology and less developed countries. Here the gap is viewed at the country level. Hence the digital divide affects Egypt's ability to compete in the global economy. In BDB the digital divide is considered as a political phenomenon, acting at a country level, and inhibiting Egypt's ability to compete internationally. Hence, efforts to increase the

ICT base, whether at a citizen or company level are interpreted as contributions to move Egypt up the international competitive league. Individuals and companies become servants of a higher goal in bridging the digital divide between Egypt and, for example the US. Crossing the digital divide is interpreted as a key to economic growth and improved productivity, rather than social betterment and the overcoming of poverty. Additionally, the digital divide is related to the absence of technical infrastructure rather than social awareness. A technical determinist view of the digital gap suggests that the provision of infrastructure will automatically lead to ICT usages and the development of ICT skills.

Such a view leaves aside the social exclusion within the country, and the way in which the ICT revolution accentuates the divide between a well-educated middle class and rural workers. Here a social divide is strengthened by the use of ICT.

Since ICT can cause divisions at a number of levels - nationally, individually, socially – it may be more appropriate to talk about divides in the plural.

In the Building Digital Bridges, there is a clear emphasis on the digital divide at a global economic level which ignores the disempowerment of individuals.

Market-Based Solutions.

Private sector involvement is of strategic importance …. to take the lead in devising market-based solutions that are socially responsible..

Technological, innovative and economic ways of increasing the ICT base of the country, and hence bridging the *digital divide* which are carried out by players operating in a global competitive market. Such solutions are developed by Egypt seeking partnerships with organisations and companies; and in particular encouraging the involvement of ICT related multinational companies. Such multinationals in the

technological sector are seen as the prime target for *investor-friendly legislation,* which may create barriers to the involvement of smaller, local companies. Furthermore, at a national level, the goals and objectives of multinationals may start to have inappropriate influence on national strategy which should ideally be aimed at serving the needs of local populations rather than bowing to global strategies. Hence those involved in the development of an information society are already part of powerful groupings. Individuals not connected at an organisational or institutional level – companies, government and technical institutes – remain outside the process and are still disenfranchised.

Global economy.

To compete, to remain relevant in a rapidly changing technological landscape and an increasingly global economy,..

Exchange of goods and services at a worldwide level which transcends national boundaries. This is enabled by fast international communication mediated by ICT, fast transport networks and multinational companies working across and amongst nations and continents. Economic forces include the cost of raw resources and particularly the cost of human labour. Developing countries can compete by supplying pools of cheap labour, which encourage outsourcing. In Egypt a large population of young people under 20 provides a potential competitive resource. However, human resources, technological capital and legislative infrastructure tend to become the servants of the global economy, rather than of the citizens of the country. It is implicitly assumed that the benefits of participation will trickle down to disenfranchised citizens of the country. It should be noted that the needs of the global economy, itself an abstract concept, may transcend national needs such that national

policy is driven by perceived external demands, to the possible detriment of the needs of the country's population.

Socially responsible.

…*market-based solutions that are socially responsible.*

Addressing the rights, needs and concerns of society and individuals in society. Avoiding exploitation of individuals whether economically or in the violation of rights to autonomy and free speech. Egypt has to a certain extent restricted free speech and is one of the countries that retains a strong grip on Internet communications. This may conflict with social responsibility. Moreover, the demands of the global economy, involving cheap labour and competition, may directly clash with the demands of social responsibility. Social responsibility may be extended to encompass environmental responsibility and responses to the effects of climate change. Here a more complex dynamic is observed where the essential economic needs of the individual clash with the requirements of environmental responsibility. It should be noted that the document offers no definition of social responsibility. Indeed while *market-based solutions* and *social responsibility* are not mutually exclusive, putting them together in one phrase highlights the economic, technical and social tensions which the *ICT revolution* creates.

The Information Society and National Development

Section two of BDB relates the information society to national development in three pages. It provides commentary on the effects of the information society on economic

development, education and employment and quality of life; it comments on the digital divide and examine the strategic challenges for Egypt.

Information Society

The emergence of an Information Society will impact relationships between individuals, organisations and countries.

A society where social cohesion, economic activity and social identity are mediated by the exchange of electronic information using generally available information technology. In the information society, technology is the basis of everyday communication and the availability of technology, for example, mobile phones and email, changes the nature of social communication, and creates new social networks. This clearly involves changes in relationships. Within BDB, the information society is related to the information-driven industries which *'provide more than half of the gross domestic product in the economies of wealthy nations'*. Thus the information society represents an economic ambition; a state to be pursued because of the perceived economic advantage that may be derived.

In an information society, where relationships, both economic and social, are mediated by ICT, lack of access to the technology will amplify social inclusion.

Techno-economic shift.

ICT has changed the structures of production and activities, breaking down barriers between market players and causing a historical shift known as the 'techno-economic shift'

A shift from a hierarchically organised market with vertical integration to a horizontally networked market where production is separated out between different

players. This shift is related in BDB to an increased need for knowledge distributed by ICT.

While BDB puts this term in quotes, it does not indicate its source. The techno-economic shift has been related to a paradigm shift (for example, Park, 2003) suggesting that it is a major, if not catastrophic change. The techno-economic shift is also equated with a shift to a knowledge-based economy (see for example, Holtzhuasen, 2002) in which economic growth is based on the exchange of knowledge. Such a shift in economy is an ambition of many developing countries, paired with the concept of *leapfrogging*.

However, it may be suggested that such a shift creates more instability and reduces employment and security of employment. Hence a shift to an outsourcing market may only create temporary employment opportunities as the market changes. In Egypt, as in many Arabic countries, society operates in on hierarchical basis. Power distance may be high. In the Egyptian government, for example, some ministries are populated by ex-military staff and a chain-of-command culture is prevalent. This clashes with the cultural view of the authors of BDB which seems to value autonomy and equality more than would be natural in Arabic society.

Hence the techno-economic shift may not be entirely positive if not culturally aligned. Additionally, the techno-economic shift involves the use of ICT to attain flexible structures in employment which create casual labour markets and may increase poverty rather than alleviating it. A techno-economic shift usually results in a shift in the labour requirements which requires a new set of skills. This shift may disenfranchise those, particularly in rural communities who do not have the resources to re-skill. In BDB the use of the term ‘techno-economic shift’ is connected to ‘value

chains' and a 'technology-based global economy'. The use of ICT is then related to production and consumption rather than citizen autonomy.

Computer Ownership

The real issues in the Information Society revolve more around ICT usage and skills rather than wired access or computer ownership.

Usually considered as a measure. Ownership is considered by BDB at the level of the citizen, centred round a computer-in-every-home initiative as part of *e-readiness.* The focus is on the distribution of hardware and software, providing associated tangible measures of progress towards the information society. The computer-in-every-home initiative seeks to attain a 'level of penetration of 1 PC to every three homes', supported by charging mechanisms attached to telephone bills. BDB notes that ICT usage and skills is more important than the computer ownership and that even low cost PCs are beyond the means of most Egyptians. However, the focus of the report and the information society program is on quantitative measures of computer ownership, born of a *'demand for indicators on access to and use of ICT by policy makers*', which may not indicate any real value or change obtained from its deployment. A focus on computer ownership may side line issues of IT usage and illiteracy. The deployment of computers into homes, schools and universities without the supporting education and social incentives for usage may even inhibit the use of ICT.

In addition it should be noted that hurdles are associated with computer ownership. Only telephone customers can benefit. Hence a large section of the population remains excluded. Those without access to telecommunications resources cannot attain computer ownership.

The numerical focus on computer ownership may be seen as a manifestation of technological determinism. Can the mere presence of technology elicit social change?

Leapfrog.

They see the potential for ICT to help developing countries leapfrog and take advantage of new technologies to address their social and economic problems.

To advance technically and socially while avoiding the need for an intermediate step. In the context of developing countries in Africa, it refers to a jump from a rural, subsistence agriculture economy to an information-driven economy without an industrial revolution, that is without having to develop a manufacturing base. At issue is whether such leapfrogging is possible, and is socially and economically appropriate. Several African countries, including Rwanda, view ICT as a key to a knowledge driven economy, modelled on and competing with Western economies. Leapfrogging carries the connotation of leaving someone behind, jumping the queue, leaping over someone's back. It may be suggested that the disempowered are left even more powerless by the leapfrogging to an information society.

Universal Service Policy.

It is the role of the universal service policy to ensure that all of its citizens, regardless of the traditional barriers of social class, education, gender, or economic level, have access to the tools they need to function and excel in the new Information Society.

A policy to ensure 'access for all'. All citizens should have access to the tools they need to function and excel in the information society. The use of the word 'services', suggests a viewing of the citizen as the customer, the recipient of services provided from the centre, whether government or a commercial firm. This view of the citizen as

customer, as passive recipient of services delivered using ICT can be found elsewhere in the document. The ICT is not seen as providing autonomy but rather as a conduit for the directing of the activities of controlling organisations towards the citizen.

Citizen-Driven Information.

Content providers must develop content and provide services that encourage citizens to access the web and use it in their everyday lives.

Information which meets the requirements of the citizen. Such content is still to be provided by content providers, without indication of who the content providers are or how they will determine that the information provided is citizen-driven information. Citizen-driven information implies that the citizens are autonomous in their selection and consumption of information. However, this contrasts with the viewing of the citizen as a customer whose role is in consumption through which economic growth may be driven. There is no evidence that mechanisms for gathering citizen requirements are in place.

Export-oriented ICT.

to foster the creation of an export-oriented ICT industry. The development of an ICT industry can be a powerful engine for export growth and job creation.

The development of ICT products and services targeted at increasing exports to other countries, particularly in the developed world. Internal and citizens efforts are then directed at supporting the ICT industry. Support and partnerships with global ICT organisations is sought. Export-oriented ICT may become a key plank in a country's ambition to *leapfrog* and compete in the *global economy*. The development of ICT skills in the population and the investment in infrastructure may then be interpreted as

activities in support of export-oriented ICT. An export-oriented ICT industry seeks to meet the needs of other countries, predominately develop nations, for cheap technology. If the main producers of the export-oriented ICT are the foreign ICT companies, the foreign investors, then any returns on such investment are themselves exported. Hence the economic benefits of a developing ICT industry are themselves exported and do not benefit the host country, which only acts as a servant of the foreign investors, primary through the provision of cheap labour.
Hence, critically, the term 'export-oriented ICT' harbours implications of deleterious effects on the local population and directly contradicts the message concerning building digital bridges.

Digital Bridges

The bulk the BDB examines each of seven digital bridges. Each section presents overall objectives for the bridge. These are expanded and lead to a description of the challenges associated with the bridge and proposed solutions. A section called 'Where are we today?' explores current progress and is often illustrated by case studies of initiatives already in action. This is followed by a 'Way Forward' section which discussed the implementation of the policies associated with the Bridge.

The following section provides critical dictionary entries associated with each of the bridges, commencing in each case with a definition of the bridge itself. These dictionary entries are selective and not exhaustive.

E-Readiness

E-Readiness

E-Readiness is the cornerstone of Egypt's Information Society initiative.

A state of preparedness and qualification for taking up the effective use of ICT within a connected environment. An e-ready country, company or individual must have both the right available technology and the correct skills to use that technology. E-Readiness in BDB is interpreted at the country level. It is also associated with a set of measurables. By examining the extent of penetration of ICT and the level of infrastructure a quantitative evaluation of e-readiness can be made.

Hence the ambition of attaining e-readiness is to be achieved by technical investment and not by social considerations.

The outcome of being e-ready is the ability to compete in a world economy. E-readiness is connected with political aims in changing the regulatory environment and establishing Egypt as the regional ICT hub and as a gateway for ICT development in Africa. E-readiness is seen by BDB as requiring equal access for everyone. However, the underlying economic goals of e-readiness may result in access for a limited subset of the population whose status indicates a possible contribution to the economic goal.

Household.

Additionally, the government will expand tele-density and tele-accessibility to reach a planned 18% of the population by 2007 and 80% of households.

A group of people, probably related, living in one location consisting of one or more buildings. The household is likely to be centred around a family or extended family.

As part of E-Readiness, the BDB strategy aims to get a 'PC in every home'. Having stated that the current level of ownership of PCs in households is 2.3%, an aim of

reaching 80% of household, but only 18% of the population. While households can be rural, it may be suggested that household is primarily presented in BDB as an urban concept. Households have a defined postal location and sufficient telecommunication links to provide a connection for a PC. The requirements for getting a cheap PC into the home through the PC in every home initiative are a phone line, a credit history and the regular payment of phone bills. This excludes most people in rural areas and many poor areas within cities. Hence the use of the word 'household' defines a certain section of the population that can be included. In addition, the household provides a focus for extending the role of the public sphere. In Habermasian terms, the private lifeworld within the household is being colonised. The presence of ICT in the household and its usage become a matter of government concern. ICT usage even in the private house is then part of the public sphere.

Telecommunications Master Plan.

Phase II of Egypt's telecommunications master plan calls for the utilisation of IP and ATM on the backbone level…

An Egyptian plan to extend and expand infrastructure as an essential for e-readiness. The plan envisages Egypt becoming the telecommunications hub of the Middle East as a result of private sector participation and '*massive foreign investment'*. *E-readiness* is then connected to countrywide infrastructure expansion, both led by and focussed on large industrial players. The focus is on the industrial development of commercial services around ICT infrastructure, served by an increasingly ICT literate workforce and targeted at the citizen as customer. The Telecommunications Master Plan is a plan for technical investment in technical capital whose techno-centricity excludes the considering of social dimensions.

Liberalisation.

The New Telecom Act No 10 for 2003 is a main landmark in the Egyptian Telecom sector marking a major step towards the liberalisation of the Egyptian Telecom sector and regulation of the market.

The removal of regulatory frameworks by governments in order to enable private sector involvement in markets. This particularly applies to the Egyptian telecommunications market. Liberalisation frees up the market and encourages the foreign investment. This liberalisation may focus on business and urban markets. However, a balance of liberalisation is difficult to achieve. Liberalisation of the market may favour foreign investors at the detriment of the local economy and provide no advantage to citizens. If the appropriate regulatory frameworks are not in place which ensure that the market operates to the benefit of Egyptian citizens, then liberalisation may increase exclusivity and widen the digital divide. Contrary to the underlying philosophy of Building Digital Bridges, liberalisation may increase social exclusion, and raise economic barriers by favouring, even unintentionally, large global players over small local operators.

Hence the liberalisation of markets should be pursued in the context of an ensuring state which applies regulatory frameworks to ensure that the market operates to the benefit of all citizens. There is always the possibility that liberalisation will inhibit or constraint a *universal service policy.*

Enterprise environment.

WiFi are becoming extremely popular and are starting to penetrate enterprise environments worldwide.

A set of regulatory, geographical and business conditions that support the rapid development of new businesses. BDB clearly sees the development of science and technical parks within urban locations as part of an enterprise environment. *Smart Villages* may form part of the enterprise environment. However, the enterprise environment may also be a closed environment, connected with urban populations and only accessible to a highly educated elite emerging from the universities.

E-Learning

E-learning.

E-learning – Nurturing Human Capital

The support of learning using ICT-based systems to provide knowledge, enhance the learning experience and support both the learner and the teacher in meeting learning objectives. E-learning may be viewed as an additional pedagogic tool to support the interaction between teacher and learner. In BDB, E-learning ICT is viewed as a way of automating teaching such that the need for teachers is reduced by the use of ICT. Hence the problem of the disparity between the growing number of secondary students and the lack of teachers will be overcome by the automating of the learning process. Indeed, technology-resistant teachers may be replaced by ICT. This automation approach is suggested in the use of ICT to combat illiteracy. Here it is implied that programmes that show letters and letter sounds can replace personal teaching. E-learning is also interpreted in terms of ICT education. For example, as part of the e-learning initiative, an IT university is to be established whose purpose is to '*produce graduates who can compete globally and promote the IT industry locally*' E-learning then serves a utilitarian function of getting the human capital to a level of

basic ICT skills at which it can serve the needs of the information society in competing in the global economy. The focus of BDB on e-learning does not address the pedagogic issues, but rather provides a framework for automating a training process. Furthermore, BDB majors on the extending of ICT skills. The BDB document identifies the need for new methodologies to feedback on the quality of education. Hence, e-learning will be part of the feedback of information to the centre for control purposes.

Underlying the concept of e-learning expressed in Building Digital Bridges is a technological determinism which assumes that the technology itself is sufficient to solve social problems of illiteracy and skills shortages. E-learning becomes a control mechanism for fixing training problems. The mere presence of ICT through the *Smart Schools* network is expected to ensure educational progress.

Basic ICT skills

..ensuring.. that its population is equipped to master the basic IT skills which the ICT revolution requires.

A set of skills in computer usage of a general nature, including manipulation of office software. This neither involves programming or understanding of the social and technical contexts. Basic ICT skills can be tested in a prescriptive manner and then measured as the number of people passing a given test. This training has focussed on government employees and is run from city-based centres supported by multinational companies. As such ICT training, and indeed the ICT itself, becomes a commodity to be delivered into people's household and schools. These basic skills are required by the 'ICT revolution'. Hence the citizen becomes the servant of an abstract concept. According to BDB, 82,000 graduates have been trained in basic ICT skills. A limited

few gain advanced ICT skills, and can access various grants. It should be noted that there is a wide gap between the basic ICT skills that fit individuals to, for example, work in a call centre, and the complex ICT skills needed to develop an ICT industry.

Accessibility.

… remove the three main barriers to access – the lack of awareness, affordability and availability.

The Basic Skills Training Programme is accessible to all Egyptian youth.

Educational access to computers, particularly through schools. ICT is installed in schools with the aim of providing after school access. However, often such technology gets locked away in rooms and only brought out for special occasions when government officials or dignitaries visit. The ICT is not used because it is considered too valuable to be exposed to daily use and there is a lack of staff who know how to use it. In addition, accessibility of training is limited to a subsection of the population who have attained sufficient economic status to, for example, work in a government department or have graduated from university. Accessibility is limited to those who through privilege can be seen as capable of contributing to a technology-based society. Hence those on the wrong side of the digital divide are less likely to qualify for training or *e-learning*.

Multiple Modalities of Learning.

The e-learning initiative will use multiple channels for delivery of educational materials…

BDB uses this term to refer to different ICT delivery channels, ranging from the Internet, computer-based training, and virtual classrooms. As such this has a technical

focus and does not consider learning styles. It does not consider the Egyptian educational culture which is quite hierarchical and involves students accepting and learning what the teacher, as a higher authority, tells them, without involving critical analysis, questioning or deductive learning. The term refers to the technical delivery mechanisms and does not necessarily relate to learning which will depend on other mediating factors including the effectiveness of the teacher and the accessibility of the technology. In Islamic culture, there is a reliance on the interaction between the teacher and the student. Often in mosques, classes involve the teacher and the student sitting on the floor and learning from books. The Islamic emphasis on learning the Koran by heart promotes a form of rote learning where texts are given out by the teacher and recited. Such a culture-led approach to learning does not require ICT to be effective.

Education Service Provider.

Partnerships. Cooperation between private sector education service providers, network operators……is the cornerstone of this [e-learning] initiative.

A commercial organisation, often a multinational such as Cisco or IBM which provides the professional training, usually from centres in major cities. Hence finance for the information society initiative is likely to be going to suppliers external to the country rather than to Egyptian universities and colleges. This may reduce accessibility since such training is likely to be more costly than locally-based education. Additionally, products provided by education service providers may encompass western views of pedagogy which are culturally insensitive and may be less effective in Egypt. Hence both training content and training approach may be determined by the multinational.

Gender Gap

Throughout the world, there has traditionally been a gender gap in computer use and in employment in technological fields.

The gap in levels of usage of ICT between males and females. This may be a social phenomenon arising from the perception of ICT and the way it is taught in schools. It may also arise from psychological differences in which the female tendency is to social interaction rather than a focus on technology. BDB highlights that 55% of computer literacy training has been provided for women. However, the role of ICT is then highlighted as providing demographic data for policy formers. Additionally, cultural effects may result in a reticence of females within various strands of society to take-up ICT training. The BDB document shows an awareness of a gender issue but pursues a technical solution.

IT Caravan.

The ministry has provided …. 25 IT caravans to serve areas that have no access to electricity.

A mobile facility provided by the Ministry of Education for areas that have no electricity. According to BDB, 25 IT caravans are available. This contrasts with the city-based ICT training which includes a massive 58 acre Mubarek Educational City on the outskirts of Cairo. It may be suggested that the IT caravan carries connotations of technology arriving from afar, of rich merchants visiting, of a circus coming to town and then going. It is possible that nothing changes after the IT caravan has left. It is difficult to see how a visiting caravan, other than being a spectacle, can help people in their rural situation. Dropping in and then leaving may retain the power

balance and deny rural citizens the autonomy over using ICT which may depend on the provision of mobile services.

Smart Schools network.

The Smart Schools Network will build public-private partnerships to put computers in schools.

A scheme for getting ICT into schools. BDB suggests that placing computers is schools results in 'increase[d] basic skills and computer usage rates for children', but provides no evidence. Indeed, evidence in Egypt, suggests that the placing of ICT in schools does not even guarantee its use (Warschauer, 2003). The computer may be locked in classrooms as only brought out to impress visitors. Lack of technical skills and infrastructure, lack of skilled teachers, curriculum that does not adapt to ICT, and a cultural view of ICT ownership as a symbol of power may inhibit its use.

E-Government

E-Government

E-Government is a powerful tool to help Egypt bring the benefits of the emerging global information society to the largest possible segment of the population.

The development and support of electronic links between the government and citizen. E-government involves the provision of electronic services and information as required by the citizen. BDB interprets e-government in terms of e-services targeted at the citizen as a customer. The E-government initiatives intends to '*create an environment conducive to investors, to provide information for decision makers.. to foster Egypt's global competitiveness and reduce government expenditure*' People

deal with the government in a customer, provider relationship. The expectation is that e-government will boost demand for ICT. E-government itself becomes a servant of the technology. Hence e-government is about efficiency and cost reduction, focusing on internal government functions and the needs of the powerful decision makers. This driving forward of e-government will involve private partnerships and outsourcing. E-government also focuses on business transactions – booking tickets, telephone bills, electricity bills. For both the Ministry of Health and the Ministry of Education, a critical role of e-government is in gathering information for the centre. The way forward is seen in terms of further support for internal government services, furnishing data for government ministries and developing central databases. E-government in the BDB documents is given a wider interpretation than just providing information for citizens. It is about the support of government functions.

Community Participation

The e-government initiative is a project with a nationwide impact, thus community participation is a must.

A democratic exercise whereby citizens reach a consensus as to the required content of e-government websites and the type of services and interaction required. While stated as a guiding policy, no definition is provided in BDB as to what community participation is or how it should be implemented. It should be noted that Egypt exercises strong censorship as to the use of the Internet and, for example, blogging.

E-Payment

The model of developed countries e-payment framework, which is highly dependent on credit cards, is not yet suitable for developing countries …

The movement of monies electronically to pay for transactions. While e-payment is a significant plank in the e-government strategy described by BDB, it may do little to bridge the digital divide. E-payment requires a bank account, communication links, a PC and most significantly a credit status that the poor may not have. For example, online payment for birth certificates is suggested, which requires a credit card. Hence a shift to e-payment may extend or strengthen the digital divide. E=payment is an essential step in e-commerce. Hence, if an e-commerce model is to be adopted, e-payment mechanisms must be established.

Automation

Several challenges are facing the process of automating workflows in government offices, including a lack of standards and specifications…

Use of computers to reduce human intervention in business processes. Workflows involving government transactions can then progress faster and more efficiently and without pauses for human interaction. Automation is viewed a good, but inhibited by undefined 'miscellaneous cultural factors' which are viewed as bad. There is an inherent contradiction between the positioning of a country such as Egypt, with its growing young population as a source of a cheap, but highly skilled workforce, and the extension of automation which reduces the need for a large workforce.

E-signature

In a major step towards introducing to the Egyptian legal environment the concepts of the security and privacy of networks, the e-signature law was drafted …

A legally binding acceptance of a transaction or a contact mediated by a unique electronically encrypted password. E-signatures support reliable auditable business

processes and are particularly important in areas such as taxation. BDB places considerable emphasis on the development of legislation to support e-signatures. E-signatures may not be essential for the running of e-government websites, but is related to security, communication and government control in BDB.A government focus on almost military control leads to an ICT focus on e-payment and public key infrastructure.

E-Business

E-Business

The ability to communicate, search for information, market products and services and conduct transactions online….

Use of Internet-based communications to support transactions and distribution within and between businesses. E-business contrasts with e-government in addressing primarily business-to-business activities. BDB focuses on business efficiency, and highlights e-payments and e-signatures. BDB also considers that the proliferation of information, databases and communication channels will boost economic performance. Hence the value of ICT and the information society derives from a perception of a causal link with economic performance and Egypt effectively competing in a global economy. This link between information proliferation and economic performance provides the driving philosophy behind e-business, although it is neither explained nor validated. New laws supporting e-payment and electronic fund transfer are considered important.

Cashless, Paperless Society.

By 2012, the government, with the help of the private sector, hope to implement effective steps towards the establishment of a cashless, paperless society conducive to e-business.

A utopian view of a society in which all business and communication is carried out electronically. Documents concerning transactions or any other commercial activity are then only stored electronically. While this remains a theme of many strategists, there is no evidence that it has been achieved. However, the goal of a paperless, cashless society remains, leading to an emphasis on legislation concerning e-signatures. Also a drive towards a paperless society may amplify social exclusion of those in rural communities who are economically barred.

E-Health

E-health.

The Ministry of Health is keenly aware of information and communication technology's potential benefits to the healthcare system. As a result, the ministry has established the e-health programs …

The provision of health information and services electronically to the general public. E-health involves better links to hospitals to enable appointment booking, remote diagnosis and remote treatment, BDB interprets e-health in more centralised terms, addressing the need for electronic patient records, focuses on health informatics implementation in large urban health facilities, on the support of medical conferences in these large facilities. The ambitions for health informatics in many ways parallel those of western countries such as the United Kingdom. Thus initiatives in health

informatics tend towards centralisation, towards a centrally controlled electronic patient record.

E-Culture

E-Culture.

.. the promotion of Egyptian cultural heritage …

The sharing of the knowledge, values and beliefs which constitute cultural identity using electronic means of communication. Such use of the web should involve strengthening community links through the sharing of cultural practice and outputs (such as play, literature, blogs etc.) at a local level. E-culture should involve the production of networks for sharing ideas and communicating local interests. BDB interprets culture as national and historical. Culture then concerns the preservation of the past, of folklore, of the Egyptian brand. E-Culture is then seen economically in terms of increasing the skills and expertise of heritage experts and government employees. The public are then portrayed as the passive recipients of cultural information through, for example new textbooks. E-culture is then connected back to promoting the ICT sector through the involvement of international firms in the documentation of historical artefacts. For example, IBM is producing an 'Eternal Egypt' project which looks at Egyptian history. These, and other links with international governments, also place e-culture in the context of Egypt's competing in global markets, including the tourist market. Underlying E-Culture, is an interpretation of Egyptian culture in classical historical terms. Such an interpretation excludes modern or Islamic culture. For example, music is interpreted in e-culture terms as the preservation and analysis of Arabic masterpieces. E-culture is then not

about extending music involvement, but defining and scoping Egyptian musical orthodoxy.

ICT Export Initiative

Smart Village

MCIT is also preparing an aggressive program for the build up of technology incubators for small size companies and new young talents. A private fund has been established for this purpose and the new incubators are being hosted at the Smart Village.

A '*corporate park geared towards high-technology firms that offers incentives to facilitate investments in Egypt's IT sector*.' The smart village also hosts various government organisations including the CultNat centre which runs projects to document Egyptian heritage. The smart village includes a call centre, supporting some European customers and generating a 'clean cut revenue in hard currency'. The smart village offers incentives to foreign companies, including tax breaks and other government support. Such a western-style science park draws on the urban resources and cheap, skilled labour without requiring the cultural or societal involvement of the foreign company. Smart Villages may be socially closed systems, only accessible by the educated elite and the workers who serve the foreign investors. Hence a smart village may be seen as a physical representation of a digital divide rather than a tool to bridge the digital divide.

Investor-Friendly Legislation.

..tax exemptions, immediate overseas trade facilitations…. extend the right of land ownership in Egypt to foreign investors. The investor-friendly legislation has already has a positive impact on the industry.

Incentives including tax exemptions, overseas trade facilitation and free ownership of investment capital which encourage foreign investors to support Egypt's ICT sector which arise from changes in legislation. Such incentives are not available to nationals, resulting in a ring-fencing of capital flow which benefits the foreign companies who can also draw on cheap, skilled labour. Investor Friendly Legislation may be based on a philosophy that benefits given to foreign investors will trickle down to Egyptian citizens. However, it is not clear what the evidence for this is. It may be simply that the foreign investors draw on Egyptian human capital and local resources for their own multinational benefit.

Business Process Outsourcing.

Business Process Outsourcing (BPO) has proven to be a therapy for many developing countries economic illness.

Taking internal business processes and using computer support, contracting a third party, to carry out the business processes. Such business processes are often centred around call centres. Business Process Outsourcing (BPO) is described in BDB as 'therapy for many developing countries' illness.". It is argued that BPO has been the cornerstone in building the economies of India and Philippines, although no evidence of this is given. Call centres in the Smart Village are linked or in close proximity of the city and depend on the large volume of cheap graduate labour available in the cities. This shows no propensity for emancipation, rather makes citizens the servants of the ICT and the global economy.

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