

The Impact of new Information Technology (IT) on e-Government and other Organizational Innovations

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ABSTRACT

Information technology has opened new windows in dealing with organizational operations and the ability to incorporate the public, private, and non-profit sectors to provide the quality service they deliver. In 2010 the United States government became the world's largest consumer of IT by spending \$76 billion a year on 10,000 different systems. Lack of proper implementation and outdated technology has cost the government more in comparison to the private sector according to Kundra (2010). This paper will look at some of the key dimensions of Information Technology with particular emphasis on government, the impact of social media in promoting public policies and political agendas as well as how new IT tools like Compliance Data Warehouse (CDW), different protocols, and other innovations have helped create efficient and sophisticated systems used by some public agencies like IRS as well as potential obstacles in institutionalizing effective and economically sound IT system in Public sector. Obstacles facing such initiatives due to bureaucratic rules and regulations, org structure and culture, and most important of all the complex nature of multiple tasks of some agencies will be addressed too. Ethical issues and concerns are major challenges for new IT innovations both globally and nationally that need to be part of the equation along with significant benefits of such new technologies both in terms of control, oversight, security and protecting individual rights.

THE IT MOVEMENT & THE EMERGENCE OF E-GOVERNMENT

The emergence of e-government has made a huge improvement on how government delivers public services. Most government agencies have a website that provides at least the basic information that used to take time and effort to obtain. Many applications can be process online without having to go physically to the agency. Many services now a day can be offered online ranging from mundane activities like pay bills, taxes, filing complaints, to more sophisticated actions that need more scrutiny and details .

Noticeable examples are services by IRS, Social Security and Medicare administrations, as well as the Homeland Security, which has invested a great amount on new technology as a result of 9/11.

The internet, as a global system of interconnected computer networks, provides the government and non-profit organizations a huge opportunity for going on line and shape themselves as a true e-government or e-service. Such service includes an Internet Protocol (IP) address and a Domain Name System (DNS), just as it does for all organizational types because “no one owns the internet and it has no formal management” as Laudon & Laudon state (2011). An advantage to the DNS assigned to organizations is that it is unique and it separates the organizations such as: .com; .edu; .gov; .mil; .net; .org, etc. These unique identifying characters do not however provide centralized governance over the technological implementation or even the policies, standards and security measures as it relates to the organizations access and usage rights. It is imperative that organizations employ synchronized systems that will

collaborate with the organizations voice, data, messaging, email, and other electronic communications to maintain office operations. For example community colleges in North Carolina, like many in other states, use the same software programs and accordingly such a “unified communication” makes it easier for IT to address programming issues and to send out solutions to all the community colleges in that state (NC Community Colleges, 2011). While some may argue that e-government can be defined as a singularly transforming influence for the public sector, such statement needs to be taken with some caution since if we look at the history of public sector transformation such efforts started long time ago, not to mention specific activities initiate in that area starting late 1980s and extending to 1900s, picked by NPR reform under the Clinton Administration and the fact that public agencies have already using technology for batch processing and delivering information. However, with the accessibility to the internet, the government was able to reinvent itself by having websites and email for government agencies permitting the “improvement of citizen services” allowing citizens the capability of accessing information online as Garson rightly sates (2007). Throughout the 1990’s there have been many initiatives and amendments pertaining to e-government in the way in which electronic information is handled, but as mentioned earlier 9/11 terrorist event caused the U.S. to established newer and more secure IT systems. The advent of e-government directly affected the bureaucracy to become streamlined and better able to provide services more effectively while saving money for the tax payers. E-government started with the recognition that government was not efficient enough or that it can be made more efficient. The National Performance Review (NPR) of 1993, Chaired by Vice President Al Gore, was a report that made specific recommendation for 258 agencies in order to streamline government functions. By 1998, \$137 billion in savings and a reduction in 351,000 positions in government was the result of the NPR. (Shafritz, Russel, & Borick, 2007). The idea of reinventing of government led to the creation of the E-Government Act in 2002. This act assisted in the development of e-government throughout the nation’s infrastructure and would be run by the Office of Budget and Infrastructure and as Garson puts it, the Act would help keep the government up to date on new technology. (2007)

E-GOVERNMENT: ITS NATURE AND DIRECTION

E-government is referred to as a delivery of government information and services online through the Internet or other digital means. Unlike traditional structures, which are hierarchical, linear, and one-way, internet delivery systems are nonhierarchical, nonlinear, two-way, and available 24 hours a day, seven days a week. The nonhierarchical character of internet delivery frees citizens to seek information at their own convenience, not just when a government office is open. The interactive aspects of e-government allow both citizens and bureaucrats to send and receive information. By facilitating two-way interaction, electronic governance has been hailed as a way to improve service delivery and responsiveness to citizens, in the long run generating greater public confidence in government (Gore 1993; Markoff 2000; Raney 2000). These novel aspects of digital technology led Reed Hundt, former chairman of the Federal Communications Commission, to conclude that the central lesson of technology in our time is this: The Internet Changes Everything, areas like economy, education, community, individualism, and democracy (quoted in Kamarck and Nye 1999). With regard to the political process some writers have addressed the capacity of the Internet to transform bureaucracy. Jane Fountain has discussed the way in which information technology (IT) alters the capacity and control features of traditional bureaucracies. IT, she notes, has the potential “to substantially redistribute power, functional responsibilities, and control within and across federal agencies and between the public and private sectors” (Fountain 1999). By encouraging bureaucrats to work together and develop cross-agency “portals”— web sites that integrate information

and service offerings—e-government offers the prospect of considerable change in how the public sector functions. Indeed, Fountain cites estimates demonstrating “cost performance ratios to be declining at a rate of 20–30 percent a year” (p. 142).

Several years later, Laudon & Laudon (2011), while stating that information systems are an integral part of changing organizations and thinking about information technology as changing organizations, emphasize that fact that modern IT system is in fact a two-way street” (p. 15). In contrasting non-profit organizations with for-profits they stated that the former have a certain disadvantage comparing to the latter that they need to overcome. Generally speaking it seems that information technology changes businesses and the people they tend to work their technology and it is a make or break at least for major part for certain types of business and organization. Garson (2007) also states that “Information technology in government has long been acknowledged as a method for improving efficiency and communication”(P.). In recent years the role of social media has added another dimension to online leverages for many organizations including both nonprofits and public entities. One cannot deny the significant role of such media like face book in politics as shown in 2008 presidential election in expressing political viewpoints and promoting the political agenda. The current President ran ads, created groups, and fundraising site for his political party where you could donate as little as a dollar to help his campaign. Now, instead of learning for the news on TV or newspapers, we often learn of news from social media and all types of organizations are capitalizing on this new source of information sharing and gaining support particularly from the younger generation.

NEW IT CAPABILITIES FOR TRANSFORMING THE GOVERNMENT

Since the beginning of the information technology boom in the early 1990's amendments, laws, and orders have been created around information technology. The 1996 electronic Freedom of Information Act amendment (Garson, 2007) that influence the way many jobs are performed and customers are served. For example if an employees in a private sector or nonprofit organization have questions about services they provide they can go to .gov for answer in the relevant websites or ask question on line. ... tries to look at the stages of e-government transformation and to outline how to measure the extent of change. According to ... there are four general stages of e-government development that distinguish where different government agencies are on the road to transformation: (1) the billboard stage; (2) the partial-service-delivery stage; (3) the portal stage, with fully executable and integrated service delivery; and (4) interactive democracy with public outreach. Although one has to note that of the empirical projects that have looked at e-government, most have limited their analysis to single American states or small numbers of Web sites, weakening the generalizability of the findings. For example, Hale (2000) examined 270 municipal government web sites in California and find that few sites emphasize democratic participation. But we don't know whether their conclusions hold up for the remaining 49 states. Chadwick (2001) studies the United States, Great Britain, and the European Union and uncovers little evidence of political transformation, though he looked only at 38 government agency Web sites. Fountain says over the course of the twentieth century, American government took on its present bureaucratic form through a series of negotiations and political processes. It seems logical to assume--and recent evidence suggests--that this structure of government will change as policy makers and public managers use the Internet and other new information technologies to reshape programs, services, agencies, and policy networks. This poses some central questions about digital government, how decision makers increasingly use information technology (IT) in ways that blur the boundaries among agencies, levels of government, and the private and nonprofit sectors. Such question may relate to what are the central features; expected

efficiencies from digital government; type of challenges to be aware of, and keeping in mind other implications as innovators build the virtual state? (...p.)

Fountain state that a useful way to think about digital government operations and their effects is to distinguish among three sets of government relationships. A government-to-citizen (G2C) contact encompasses information and service flows between the government and its citizens. A government-to-business (G2B) transaction includes procurement of goods and services by government from the private sector as well as a variety of other transactions between business and government. Finally, a government-to-government (G2G) relationship characterizes the networked nature of government, including interagency and intergovernmental linkage and partnership. In all cases, the Internet and the World Wide Web make it possible to move information flow and millions of transactions from paper to a shared digital environment. To better understand this new world, it is worth noting some of the most innovative examples of the virtual state in each category, that together they present the breadth and depth of the changes in government. (2004)

While government agencies are normally risk-averse and do not like changes and in spite of all ups and downs with modern IT, tools like Compliance Data Warehouse has been a success as manifested by agencies like IRS. The speed of the process was much faster than they realized and these leads to being able to determine which groups of people are likely to cheat on their taxes. This system can catch those who cheat, lie, and try to claim after a divorce. This keeping track of numerous government employees would be a huge advantage for both federal and state governments if those agencies are willing to take on the challenges of risk and the ability to upgrade much like the IRS had to do when it incorporated the data warehouse (CDW) system to catch big businesses and small ones. The e-government puts focus on decentralization by giving the public a voice and a chance to participate in many public policies and solutions. As Garson (2007) indicates: "The e-government paradigm, which emphasizes coordinated network building, external collaboration, and customer services, is slowly replacing the traditional bureaucratic paradigm and its focus on standardization, hierarchy, departmentalization, and operational cost efficiency" (p. 117). Of course one has to consider that each organization has their own system that will help keep track of payroll, employee evaluations, and the money that is going out and coming in. Data are obtained in different systems so each business and organizations need to look at their needs. A small organization may not need such a sophisticated devise. However there are areas that elaborate IT systems can work effectively in the government. For example in human services, a system like the Compliance Data Warehouse can keep track of those who try to fraud the welfare system to get more money or food stamps. This would keep the responsible organization on track and hold each client accountable for their documentations and papers they fill out. There are a lot of people who abuse the welfare system and this would help those who need the help to those who lie and cheat.

Other tools like the Internet Protocol (IP) and the Transmission Control Protocol (TCP) are designed to allow connections among various networks either locally or widely. They also facilitate connection of local area networks (LANs) to wide area networks (WANs). TCP/IP has capabilities to cover a wide area. IP is simpler than TCP but can be unreliable at times because the network may drop or reject data when overloaded. TCP on the other hand is more complicated but reliable. It uses the IP protocol but integrates features that prevent errors, overload and other factors that may interrupt transmission. Therefore, a combination of the two TCP/IP have proven to be more valuable to organizations as it can fit a wide range of applications over a single network infrastructure. The (TCP/IP) Transmission Control Protocol

and the Internet Protocol in a typical telecommunications network, diverse hardware and software components need to work together to transmit information and has proved to be the most valuable. These two vital pieces help transmit data among different types of computers over long distances (Laudon & Laudon p. 197). Garson (2007) too, refers to quest for production and reducing cost of the operations as a compelling force for public managers to seek new technologies that can help them increase managerial control and productivity of individual employees (p. 341). The computers have made their way into every government, non-profit, and the public organizations. Modern IT helps organizations by being able to seek out clients and to manage the organizations data system.

THE IRSEXAMPLE

IRS is one the most sophisticated system to use the Compliance Data Warehouse (CDW) to improve decision making and operations so that tax payers benefits from its effectiveness. The Compliance Data Warehouse reduced the time it took to find and trace mistakes in claims and analyze data from a six to eight month period to cutting the hours down to only a few hours. The IRS did make corrections in the way it transported data to its central warehouse, using a higher grade of gigabytes that made the data safe when being transported. The less gigabyte was not safe for taxpayers due to the fact that their personal information was left unsecure during this process. This whole process helped the IRS save at least millions of dollars over five year period. (Laudon & Laudon) Tax payers should be glad that the Compliance Data Warehouse system is in place and is able to hold people accountable for doing what is right. It reduces the audits for those who are honest compared to those who lie and cheat on their taxes. This will help honest working Americans to have better attitudes toward the IRS and knowing they are being protected for doing what is right. Standardized collection of federal employee data, reducing the number of data calls made to agencies and providers for common employee data.

Centralized focus on data quality and integration to one system, reduces cost for replicating this work in multiple sources. This along with consistent, timely, and secure source for programs requiring integrated federal employee data, such as the Retirement Systems Modernization program allow Integrated reporting across the Federal workforce in addition to capabilities for advanced analysis by agencies and operating units. (OPM, 2011, p.1) In pursuing such ambitious and mostly successful attempts IRS also encountered challenges when implementing its Compliance Data Warehouse in terms of management, organization, and technology issues. IRS encountered challenges with converting from the old system to the new one as it was a homogeneous process. In addition, as the tax laws change every year the data integration proves to be problematic. One can infer from the case presented by Lai (2008) several benefits in terms of management, organization, and technology if the relevant aspects are being addressed effectively:

- Having the technology/tools necessary to allow users to search through the data as well as a technological system that could up keep with all the demands
- interfacing between the clients and the servers
- dealing with the programming interfaces
- having a large space that could accommodate multiple terabyte
- the IRS (organization) realizing that a data warehouse was needed for the processing and storing of so much data

IMPACT ON GOVERNMENT SERVICES

The impact of new technology on information access, government service delivery, and public attitudes

about government have long been debated by observers. Each technological innovation—from the movable-type printing press in the fifteenth century, the telegraph in 1844, and the telephone in 1876, to the rise of radio in the 1920s and coast-to-coast television broadcasting in 1946—has sparked speculation about its longer-term social and political impact. Transformationalists often predict widespread consequences arising from new technology, while incrementalists note the constraining influence of social, economic, and institutional forces on the ability of technology to alter behavior (Bowie 1996; Margolis and Resnick 2000; Davis 1999). On the service side, the most frequently occurring service, available on many state government websites, allows a citizen to find and apply for a state government job online. A more popular service, personal income tax "e-filing," is available in many states and state governments have been able to implement electronic filing of taxes because the Internal Revenue Service supported development of private sector solutions that states can purchase and implement. The same is true with state governments that permit online renewal of motor vehicle registration, which is probably the fastest growing online service. Some fifteen state government Websites allow people to order a fish and game license or permit online, although most states mail the license or permit through the postal service. Many state governments have a registry of sex offenders that can be searched by the public as well as some allow the public to order vital records, such as birth, death, and marriage certificates, online. (...) In general the Internet as a network of networks provides many benefits to governments and non-profit organization. Information is quickly and easily disseminated to clients. The government is able to put a wealth of information for the public to use without having to leave their home. Public services can now reach every location that has internet access. The internet allows the government to be more efficient and reduce cost of operation. Trainings can be offered cheaper on line saving transportation and time to travel to the training site. Internet helps non-profit organizations in terms of fundraising, showcase their successful work for potential future funding, identify partners, advocate for the people they serve among many other things.

E-GOVERNMENT: DEMOCRACY AND CITIZENS

Technology is the voice to communicate to co-workers, employer, stake holders and clients. Information technology has opened all networks that are able to incorporate the public, private, and non-profit sectors to provide the quality service that delivers. Garson (2007) states that "It is still critical that the researcher be able to defend the fact that the findings of the sample can be generalized" (p.280). This means that researchers that work in public and more so in non-profit field have to find the samples they are looking for to enhance their works as well as adding to the reservoir of experiences in this area. By all accounts, it seems that private sector has the superiority of developing those IT systems that has their best people to be able to manage and begin the technology. Asserts that as researchers working in the non-profit field to find the samples for doing their work better, the private sector has the superiority of developing those IT systems that has their best people to be able to manage and begin the technology. (p.)

In a democratic form of government, being held accountable to the citizens that are being served is an essential requirement. Through technology, government has been able to better serve its citizens and keep people informed. The internet has been a key technology to provide this type of service. It also has allowed public managers to focus on quality over efficiency. (Garson, 2007) The internet is a communication system that links computers through a global network and is ran through a universal standard. The technology that is designed to meet the needs of a specific agency is what becomes the

most valuable for government as a whole as an improvement when it is able to fit into the goals of what a government is trying to achieve especially in a democracy. According to Eric, Vedaël, and Werle, (2004), standardization and the democratic design of information and communication technology, can be considered democratic if it:

- a) increases rather than reduces options of its use and its further development.
- b) is easy to access, easy to use, and transparent (concerning transparency: “push technologies” such as “cookies” in the World Wide Web must be easy to detect, to block, and to eliminate).
- c) is decentralized rather than centralized.
- d) is unbundled (decomposable) rather than bundled (loosely rather than tightly coupled).
- e) is open (public) rather than proprietary (to avoid user lock-in).
- f) allows no usage control except for statistical and operational purposes (to optimize efficiency).
- g) facilitates encryption and other means to protect privacy. (p. 108)

CHALLENGES

E-government, in spite of its many capabilities and positive outcomes, faces some major challenges, a few of them will be address in here. A major challenge has to do with the issue of security and control. Many organizations and entities using the Cloud Computing and depending of this system may not know where there data is being stored for example. Cloud computing, a flexible collection of computers on the Internet performs tasks traditionally performed on corporation computers, is among the three major trends that also includes mobile digital platform and growth of online software as a service accosting to Laudon & Laudon (2011). The data can be located down the road from the business/organization or it could be 4,000 miles across the ocean. The reason that the data systems are located across the world is due to lower cost of Cloud, which also makes it harder to follow unauthorized users (pp. 6-7). Another problem that can arise is the need for the organization to take extra precautions if signing on to use s Cloud provider. When completing a contract, the organization/business will need to set expectations of protection applications, location of stored data, and their expectations. What are some of the issues to be considered and clarified with vendors when in designing or modifying the IT system including establishing a risk assessment, both from the technical (data recovery, security, and other perspectives (unwanted consequences); developing a security policy in order to establish who is allowed access what information (Acceptable Use Policy (AUP); devise a disaster recovery as well as business continuity plan. As indicated by Laudon & Laudon such policy would also include auditing to make sure that the vendor and system is compliant. (2011) Above all one has to make sure that the strategy and policies work with the mission that the organization is attempting to accomplish.

another challenge is the difference of public and private sectors when it come to change, Ward refers to data that he collected from a literature review to assess the types of priorities that the public sector and private sector use with regard to IT decision making. He found that a few key details are what separate public and private information resource managers (IRM). Examples range from greater budgetary constraint and more scrutiny from supervision. Another constraint would be the procedures that the public sector must follow in order to implement an IT project which make achieving objectives more difficult Ward, (2006).

Another formidable challenge is digital divide, a term that was originally coined to describe the division between economic groups regarding access to information technology. Another aspect of this divide has to do with the geographical location. According to Garson (2007) the majority of rural counties and municipalities in many states are experiencing significant economic hardships. These local governments

are strained for the basic resources and investments in information technology are not deemed mission critical. (p. 112). Digital divide appears to be the case especially during our current economic outcome where local governments are more prone to cut funding for programs that are a drain to more crucial needs of a town or county. Part of the problem has also to do with the lack of education people have with regard to the internet and the fact that wealthier people have better access to computers and the internet. In an article on this subject, Kaiser, suggested that one way of bridging the digital divide would be to create community technology centers (CTCs) These centers can provide better access and learning for an entire community which would begin to bridge the digital divide (2005). Although CTCs provides a good sentiment in attempting to bridge the gap, potential problems are inherent with regard to cost, necessity and the ability to upgrade. The main question a community faces with the digital divide is what the community has and what a community needs in order to bridge such divide.

One area to help the digital divide is to invite the public to functions using multiple means like an email stream with live broadcasting or creating meet and greets with the public to better give them a sense of connection when one receives an email, text, or even face-book invitation. This will help with the belief “in the potential of the concept (concept of e-government)” (Garson, 2007).

THE ETHICS OF IT

There are many ethical issues and challenges attached to the Information and Communication Technology (ICT) and e-government, among them privacy, protecting individual rights, and security are the forefront. The government plays a significant role into the privacy of people’s information and in this regard as Davis (2007) states it is important to distinguish between the issue of personal identity and personal identification in that personal identity relates to the terms personality, individuality and individualism. The privacy challenge for information technology is not new; it does to appear on the increase as our society relies more and more on information technology. For many businesses, companies, and organizations turning off the employees’ computers and asking them to keep working would bring strange looks, and even frustration. Added to the more conventional online privacy, in recent years with unprecedented use of social media, and smart phones the issue of privacy has become a real challenge for all. The finding show a common bond for a review of privacy within the public and private sectors has been overwhelming. Strikwerda (2010) indicates that there is so much that we all need to stand and take charge of this epidemic (spreading all types of info) that is spreading like wildfires. Information technology privacy is a key aspect of the rights to respect from private lives because the information about us where we work is part of who we are and our identity (Strikwerda, 2010).

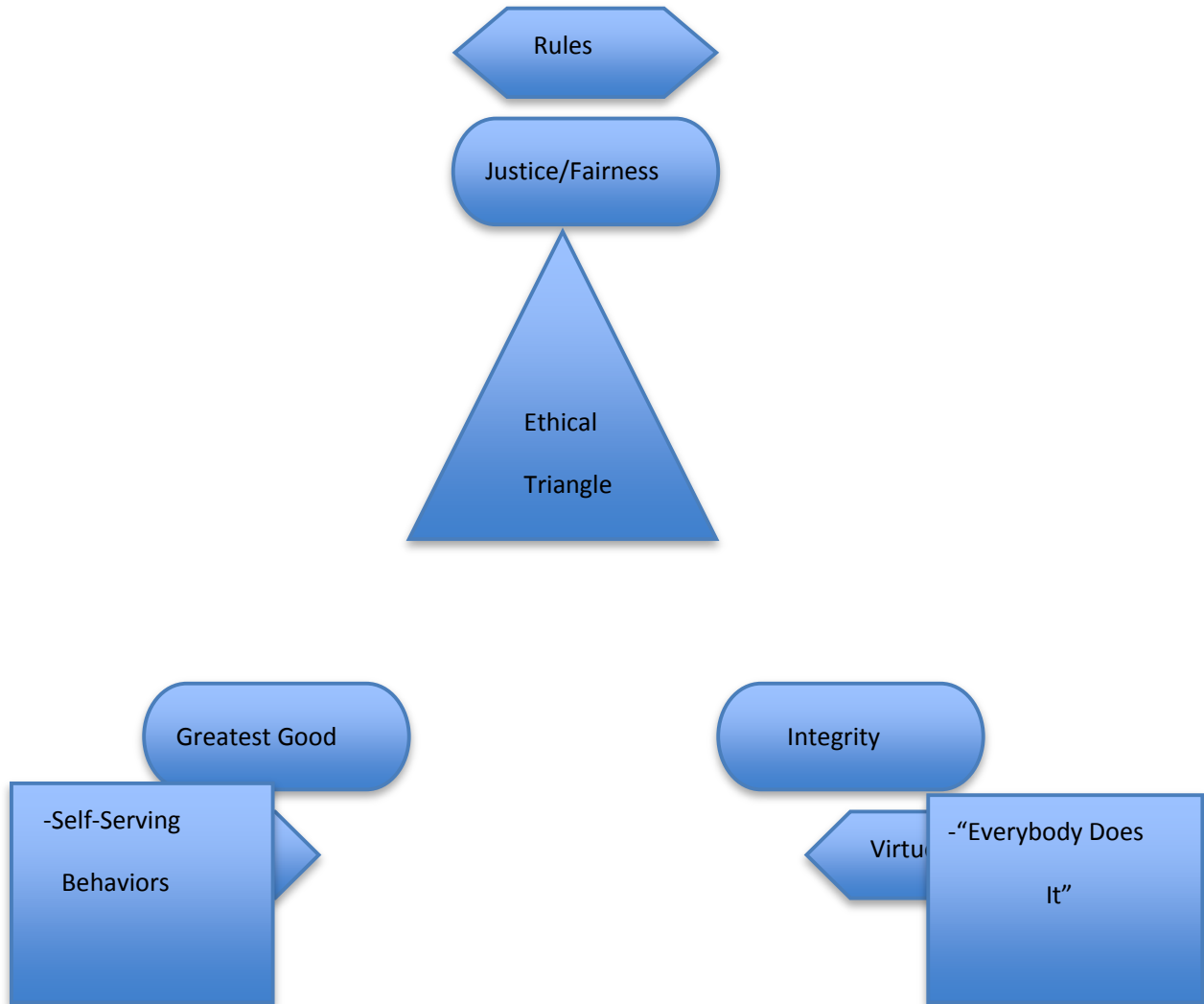
Since the first years of the internet, scholars have examined the relationships between the internet and the public and private sphere. Some argue that the internet would create a new public sphere online that would invade a certain level of privacy (Bateman, Butler, and Pike, 2011). While the literature on this issue is rather comprehensive, Desai and Embse (2008) relate them to a few categorical questions with regard to ethics, security and privacy:

- a) How have these privacy and ethical constructs been applied since terrorism (global and local) as it pertains to both in the public and private sectors?
- b) How has privacy and ethics kept up with the increasing need for security?
- c) What are the ethical implications of increased regulatory oversight for mandatory investments in physical and/or cyber security?

West, and Berman suggest what they call the ethical triangle as depicted in Figure 1 below with three key components **of Justice/Fairness, Integrity, and Greatest Good**, each as one of the edge of their

triangle along with their corresponding means of achievement. The two unethical behaviors are shown in the two squares respectively.

Table: 1



The Ethics Edge Adopted from West and Berman (2008) The Ethics Edge in Information and Communications Technologies (ICTs) in developing d world: The Digital Dividep.29.

TECHNOLOGICAL CHANGES FOR THE FUTURE

All types of organizations, private, nonprofits, and public are constantly facing with technological changes and strategize their new path heavily on the use of modern IT. While private sector via e-commerce, enterprise system, supply chain, etc, the government transforms the bulk of its operations into e-government by continuously capitalizing on the emerging trends in information technology and its over expanding use. Another visible sector that has been impacted by huge changes is Education sector. Education institutions are required to provide a gateway to the information super highway. Adoption of

technology in education must be seen as an investment rather than an expense. Institutions need a plan aimed at high achievement so schools are being pressured more and more to improve their technology to meet the demands of the student and to remain in sync with technological advancement. In turn, instructors must place emphasis on college administration to increase efficiency of information sharing, grading and communication in the virtual and traditional classroom. Essentially, technology has made a significant impact on education and it continues to shape the way students learn. As technology continues to advance, so does the quality of education.

The education world has been greatly impacted by technology and information. Colleges have advanced by leaps and bounds in terms of incorporating technology into the learning environment. Trends indicate that the use of technology for instructional purposes in community colleges will continue to increase and there is no question distance education will increase access to higher education for many populations of students (Jackowski & Akroyd, 2010. P. 632). Distance education is a rapidly growing ground for learning as it offers adult education or continuing education without the constraints of a traditional classroom. Once seen as an adult way of learning, this virtual classroom is spreading to students of all ages on demand. This modern state of higher education has been greatly impacted by innovative trends and developments in the educational environment over the last decades. Personal computers, the internet, the web, video-conferencing, digital cameras, Voice over Internet Protocol (VoIP), and other devices have fueled this technological spurt.

CONCLUSION

Public, private, and non-profit sectors that store data should look into whether or not different IT innovation fits their specific needs and create a competitive edge for them in fulfilling their mission. Applying innovative systems like CDW or MDM and others must be based on the fact that if they are a good fit for their organization. As Laudon & Laudon state (2011) these are costly to maintain and store with a slow process of retrieval. However, depending on the needs of an organization, technological advances could streamline storage of data and retrieving the set of data with more ease. For example organizations with multiple data bases should seriously consider consolidating to a CDW, while the common elements of employees, suppliers, and applications can lead a manager to employ Master Data Management (MDM). By understanding what your organization must accomplish with its data, applying MDM could streamline how data is used which could lower the cost of an organization through better recognition of who is served and how often they are served. In a public or non-profit organization, this aspect can be appealing due to the pressure of doing more with less. One has also to make sure that an organization does not use the multiple versions of the same piece of data in different parts of its operations by merging disparate records into a single authenticated master file accruing to the same authors (p. 158)

Regardless of complex management challenges, however, cost savings are potentially enormous. A government that offers electronic services online reaps efficiencies by generating less paperwork, decreasing the cost of processing routine transactions and lowering the error rate (whose correction requires additional work). Government employees may handle fewer inquiries for routine information. But a poorly designed website and information in language that is difficult to understand almost certainly result in more telephone calls to the public agency. Citizens and business firms should find that the cost of compliance is decreased, including costs associated with information search, travel, waiting in line, repetitive entry of information, and errors. The promise of the virtual state comes with considerable challenges that government decision makers and concerned citizens will face during the next decade of rapid development. Beyond simply developing the requisite infrastructure to handle the growth of electronic government, there is the need to guarantee equitable access for all citizens, and the obligation to safeguard individual privacy and ensure the security of transactions. Additionally, a host of governance

issues, such as normative concerns about the appropriate role of the public and private sectors in developing and managing the public's information, will be encountered. While Laudon & Laudon's main components of their conceptual framework for IT system (2011) are *People, Organization*, and *Technology*, when it comes to integrating these components into a coherent framework, particularly in adopting a strategic approach manifested by strategic plan, as Zomorrodian (2011) considers the role of the 3 Cs (Cooperation, Collaboration, and Coordination) extremely essential. The role of 3 Cs is particularly important since any viable change through crafting and implementing a sound strategic plan now a day is focused to large extent on changing the IT and adopting modern approaches for organizational performance and mission fulfillment.

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