

# **E-Government in Digital Era: Concept, Practice, and Development**

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## ***Abstract***

*Governments worldwide are faced with the challenge of transformation and the need to reinvent government systems in order to deliver efficient and cost effective services, information and knowledge through information and communication technologies. Development of Information and communication technologies catalyzed and led up to E-government.*

*What is E-government? In this paper, E-government is defined as a way for governments to use the most innovative information and communication technologies, particularly web-based Internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes. E-government presents a tremendous impetus to move forward in the 21st century with higher quality, cost-effective, government services and a better relationship between citizens and government.*

*One of the most important aspects of e-government is how it brings citizens and businesses closer to their governments. This paper outlines eight different potential types or models in an e-government system that is useful to define scope of E-government studies: Government-to-Citizen (G2C); Citizen-to-Government (C2G); Government-to-Business (G2B); Business-to-Government (B2G); Government-to-Government (G2G); Government-to-Nonprofit (G2N); Nonprofit-to-Government (N2G); and Government-to-Employee (G2E). This paper also examines some examples in E-government practices and presents a generally-applicable framework for analysis of challenges and problems in E-government development.*

*Emerging with E-government, theories and practices of public administration have stepped into a new digital era. This paper proposed that contemporary issues related to E-government in public administration are administrative interface, i.e., people-computer interface in management digital administration, i.e., digital process or procedures and system in management, and virtual organization, i.e., government online system, etc. Studies of these issues will be*

*more benefits for development of theories and practices of public administration in 21<sup>st</sup> century.*

*The paper concludes by analyzing concepts and theoretical framework in these issues given the broader context of structural initiatives for E-government development and the recommendations for further studies of E-government in public administration.*

**Key Word:** e-government, e-commerce, virtual organization, digital administration, administrative interface, e-governance

## **Introduction**

The waves of e-government are rising through public organizations and public administration across the world. More and more governments are using information and communication technology especially Internet or web-based network, to provide services between government agencies and citizens, businesses, employees and other nongovernmental agencies. As what Jim Melitski described in E-Government Page of ASPA website, "Across the world, public organizations are beginning an 'e-government journey' by publishing static information to the Internet and establishing an on-line presence, in the hopes that they too will experience increases in efficiency, effectiveness, and organizational performance"( Jim Melitski, 2001). More and more attractions appeal researchers and practitioners come to search for a consensus regarding e-government diagrams and initiatives. E-government may be defined as a continuum from information provision when organizations and public agencies publish static information to the Internet to web interactive communication and E-transactions, and to one-stop integrated virtual governmental services.

As e-commerce, E-government represents the introduction of a great wave of technological innovations as well as government reinvention. What is E-government? For purposes of this paper, E-government is defined as a way for governments to use the most innovative information and communication technologies, particularly web-based Internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes. This includes transactions between government and business, government and citizen, government and employee, and among different units and levels of government. E-business and e-commerce are subsets of e-government. E-government presents a tremendous impetus to move forward in the 21st century with higher quality, cost-effective, government services and a better relationship between citizens and government.

One of the most important aspects of e-government is how it brings citizens and businesses closer to their governments. This paper outlines eight different potential types or models in an e-government system that is useful to define scope of E-government studies: Government-to-Citizen (G2C); Citizen-to-Government (C2G); Government-to-Business (G2B); Business-to-Government (B2G); Government-to-Government (G2G); Government-to-Nonprofit (G2N); Nonprofit-to-Government (N2G); and Government-to-Employee (G2E). This paper also examines some examples in E-government practices and presents a generally-applicable framework for analysis of challenges and problems in E-government development.

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The paper concludes by analyzing concepts and theoretical framework in these issues given the broader context of structural initiatives for E-government development and the recommendations for further studies of E-government in public administration.

Ultimately as E-government continuum leads to organizational transformation, public agencies begin implementing e-government and governance initiatives, organizational performance will be improved and services delivery will be better equipped to interact with citizens and provide services over the Internet. In addition, e-government is transforming organizations, by breaking down organizational boundaries and providing greater access to information, increasing the transparency of public agencies and citizen participation in government, enhancing communications and facilitating democratic processes.

## **1. Definition of E-Government**

To understand E-government, it must understand administrative development and reform on government in general. During two decades, Administrative reform and development have experienced TQM in 1980s, and Reengineering and Reinventing Government in 1990s. Government reinvention make us realized that

government is actually a dynamic mixture of goals, structures and functions. E-government initiatives are complex change efforts intended to use new and emerging technologies to support a transformation in the operation and effectiveness of government derived from government reinvention. New challenge of public administration in 2000s or 21<sup>st</sup> century is to create an E-government.

### **1.1 Definition of E-Government in Broad Sense and Narrow Sense**

What is exactly E-Government?

E-Government can be defined in narrow sense. In State of Texas' s Electronic Government Strategic Plan, (Department of Information Resources, State of Texas, January 2001), Electronic government is defined as: Government activities that take place over electronic communications among all levels of government, citizens, and the business community, including: acquiring and providing products and services; placing and receiving orders; providing and obtaining information; and completing financial transactions.

Broadly defined by Gartner (2000): "E-government is the continuous optimization of service delivery, constituency participation and governance by transforming internal and external relationships through technology, the Internet and new media." This includes Government to Citizen, Government to Employee, Government to Business, and Government to Government.

Recognize the implication of e-government, it can be defined as - the ability to obtain government services through nontraditional electronic means, enabling access to government information and to completion of government transaction on an

anywhere, any time basis and in conformance with equal access requirement. - offers potential to reshape the public sector and build relationships between citizens and the government. Theresa A. Pardo outlined its functions as follows:

*Citizen access to government information.* Providing access to government information is the most common digital government initiative.

*Facilitating general compliance.* E-government can also mean providing electronic access to services that facilitate compliance with a set of rules or regulations.

*Citizen access to personal benefits.* Electronic benefits transfer and online application for public assistance and worker's compensation are examples of services that provide the citizen with electronic access to personal benefits.

*Procurement including bidding, purchasing, and payment.* Procurement applications allow government agencies to reap the benefits being realized in the private sector through electronic commerce applications. Electronic vendor cataloging, bid submissions and tabulations, electronic purchasing, and payment are government-to-government and government-to-business transactions that serve both the needs of government agencies as well as their private trading partners.

*Government-to-government information and service integration.* Integrating service delivery programs across government agencies and between levels of government requires electronic information sharing and integration.

*Citizen participation.* Online democracy includes access to elected officials, discussion forums, "town meetings," voter

registration, and ultimately online voting. These services are intended to serve the community at large. (Theresa A. Pardo, 2000)

Viewed from technical terms, E-Government is an integrated tool comprising three enabling sets of new technology: infrastructure, solutions and the exploitation of public portals. An e-government infrastructure enabling the implementation of specific applications to address specific problems and issues of government management. So when providing Internet access and email services in public portals, the most positive impact will come from the solutions and services that can be accessed from the exploitation of public portals with these communication tools. Based on internal and external governmental telecommunication and internet infrastructure, through the exploitation of public portals of governments, provide the solutions for public service delivery.

Concluded in our comprehensive view, E-government can be defined as a way for governments to use the most innovative information and communication technologies, particularly web-based Internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes.

## **1.2 E-Government and E-Commerce**

Analogous to e-commerce, which allows businesses to transact with each other more efficiently (B2B) and brings customers closer to businesses (B2C), e-government aims to make the interaction between government and citizens (G2C), government and business enterprises (G2B), and inter-agency relationships (G2G) more friendly,

convenient, transparent, and inexpensive.

It is conceivable, on the basis of the above, that the benefits of E-Government will continue to depend on the realization of technical advances in Electronic Business (E-Business) in the broadest sense. Electronic Business (E-Business) refers to a broader definition of Electronic Commerce (E-Commerce), not just buying and selling but also servicing customers and collaborating with business partners, and conducting electronic transactions within an organizational entity.

In technology, E-government and e-commerce all represent the introduction of technological innovations. However, Unlike E-Commerce, E-government is usually defined as the use of technology to enhance information sharing, service delivery, constituency and client participation, and governance by transforming internal and external relationships. This includes transactions between government and business, government and citizen, government and employee, and among different units and levels of government. In another sense, E-business and e-commerce are subsets of e-government.

### **1.3 E-Government and E-Governance**

E-governance is beyond the scope of e-government. While e-government is defined as a mere delivery of government services and information to the public using electronic means, e-governance allows citizen direct participation of constituents in political activities going beyond government and includes E-democracy, E-voting, and participating political activity online. So, most broadly, concept of E-governance will cover government, citizens participation, political parties and organizations, Parliament and Judiciary functions.

Blake Harris (2000) summarizes the e-governance as the following: E-governance is not just about government web site and e-mail. It is not just about service delivery over the Internet. It is not just about digital access to government information or electronic payments. It will change how citizens relate to governments as much as it changes how citizens relate to each other. It will bring forth new concepts of citizenship, both in terms of needs and responsibilities. E-governance will allow citizens to communicate with government, participate in the governments' policy-making and citizens to communicate each other and to participate in the democratic political process. Therefore, in broadest sense, E-governance has more implications than E-Government.

Understanding definition of E-Government that encapsulates a broader agenda of renewal may be more helpful to distinguish from these two different concepts but related to each other. E-Government refers to the use by government agencies of information technologies, such as web-based Networks, the Internet, and mobile computing, that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.

### **1.4 A Triangle Relationship Model among Government, Business and Citizens**

View from the definitions of E-Government, we can get a triangle relationship model among government,

business and citizens as follows:

1) E-Government focus aspect in E-Government partnership

The processes and structures that define the relationship between central government and local governments; the processes and structures that define the relationship between organizations and departments or agencies; the processes and structures that define the relationship between government and the employees; the processes and structures that define the relationship between Legislature and the Executive.

2) E-Business focus aspect in E-Government partnership

The processes and structures that define the relationship between governments and the markets; the processes and structures that define the relationship between governments and the private sector.

3) E-Citizens focus aspect in E-Government partnership

The processes and structures that define the relationship between governments and citizens; The processes and structures that define the relationship between Government service delivery and citizens' needs; and The processes and structures that define the relationship between countries and International institutions.

The following diagram illustrates the relationship among E-Government, E-Business, and E-Citizens in the context of the emergence of the so called "knowledge society", globalization, and sovereignty:

Given the scale, scope, multi-portfolio nature, and transformational potential of e-government, it has been advocated that it should be treated as a holistic system adjunct to the area of e-commerce in the E-society.

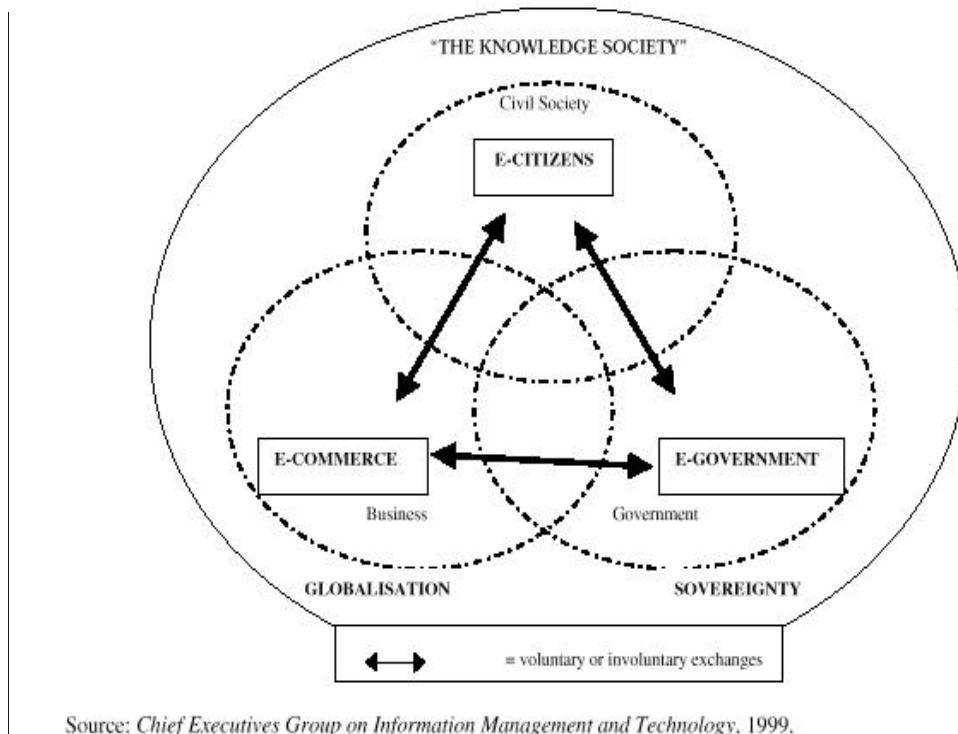


Figure 1.1 A Triangle Relationship Model among E-Government, Business and Citizens

## **2. E-Government's Types and Characteristics**

Deducted from our definition of E-Government, we can further find out the types of E-Government and their features in practices of government online worldwide.

### **2.1 Types of E-Government Partnerships :**

Summarized from our research on E-Government, normally, government identifies and drives implementation of eight types of E-government which can bring significant benefits to the Government, citizens, business, employees and other nonprofit organizations and political and social organizations. Types of E-Government can be classified into 8 categories, are as follows:

#### **1) Government-to-Citizen (G2C)**

Provide the momentum to put public services online, in particular through the electronic service delivery for offering information and communications;

#### **2) Citizen-to-Government (C2G)**

Provide the momentum to put public services online, in particular through the electronic service delivery for exchange of information and communication;

#### **3) Government-to-Business (G2B)**

Actively drive E-transactions initiatives such as e-procurement and the development of an electronic marketplace for government purchases; and carry out Government procurement tenders through electronic means for exchange of information and commodities;

#### **4) Business -to-Government (B2G)**

Actively drive E-transactions initiatives such as e-procurement and the development of an electronic marketplace for government purchases; and carry out government

procurement tenders through electronic means for sale of goods and services;

#### **5) Government-to-Employee (G2E)**

Embark on initiatives that will facilitate the management of the civil service and internal communication with governmental employees in order to make e-career applications and processing system paperless in E-office.

#### **6) Government-to-Government (G2G)**

Provide the Government's departments or agencies cooperation and communication online base on mega database of government to have an impact on efficiency and effectiveness. It also includes internal exchange of information and commodities.

#### **7) Government-to-Nonprofit (G2N)**

Government provides information and communication to nonprofit organizations, political parties and social organizations, Legislature, etc.

#### **8) Nonprofit-to-Government (N2G)**

Exchange of information and communication between government and nonprofit organizations, political parties and social organizations, Legislature, etc.

From the above categories of E-government, we can sum up that E-Government initiatives should focus on five consumer-to-government relationships: Citizen-to-Government, Business-to-Government, Government-to-Nonprofit, Government-to-Government and Government-to-Employee. First, Citizen-to-Government refers to the direct consumption of public services by the individual consumer for personal use. These services include licensing and permitting for hunting, fishing, and driving privileges. This will not only include the payment of taxes, fines, and fees to state and local governments, but also the payment of refunds to taxpayers. Second, the

Business-to-Government relationship model refers to those services consumed by entrepreneurs, businesses, and corporations, for a commercial purpose (profit or non-profit). These include filing statements of incorporation, obtaining business licenses, assistance with site locations, and obtaining workforce information. Finally, Government-to-Nonprofit, Government-to-Government and Government-to-Employee refer to the coordination of both inter- and intra- agency cooperation and employees to improve services inside or outside

governments. This includes travel requests, purchasing requisitions, payroll processing, intergovernmental fund transfers, and position applications, etc.

## 2.2 Characteristics of E-Government Types:

With comparison and analysis of E-government types, we can concluded some characteristics as follows:

**Table 2.1 Characteristics of Types of E-Government**

| <b>Items</b>       | <b>Information</b>  | <b>Communication Online</b>   | <b>Transaction</b>  |
|--------------------|---|---|---|
| <b>G2C and C2G</b> | Information requests of a firm or the citizen regarding taxes, business licences, registers, laws, political programs, administrative responsibilities, etc.  | Information requests and discussion regarding administrative processes and products; communication with politicians, authorities etc.   | Online delivery of service and posting of results; electronic voting, providing solution online, and participation online, etc.       |
| <b>G2B and B2G</b> | Information requests of a firm or the citizen regarding taxes, business licences, registers, laws, business programs, business policy, administrative responsibilities, etc.  | Information requests and discussion regarding administrative processes for business and products; communication with politicians, authorities, etc.   | Online delivery of service and posting of results; electronic transactions of accounting, e-auditing, e-procurement, e-shopping, etc. |
| <b>G2G</b>         | Exchange of information among different authorities and different hierarchical levels, regarding administrative acts and laws, policy making, data, projects or programs, background information to decisions, etc. | Information is exchanged among different authorities and different hierarchical levels; discussion fora; communication in negotiation and decision making; interaction regarding administrative acts and laws, projects or programs, etc. | Inter-organisational workflow and exchange of data, exchanging policy and solution online, information and knowledge management, etc. |
| <b>N2G and G2N</b> | Exchange of information regarding administrative acts, administrative policy, data, registers, laws, political programs, background information to decisions etc.   | Information is exchanged among different organizations and agencies; discussion fora; communication in negotiation and decision making; interaction regarding administrative acts   | Intra-organisational workflow, and exchange of policy and solution, data, information and knowledge management, etc.                  |



|            |   |  |   |
|------------|---|--|---|
| <b>G2E</b> | Exchange of information regarding works and performance, personnel policy, data, and notice for career management and development of government employees, etc. | Information is exchanged among different department or persons; discussion fora; communication in negotiation and decision making; interaction regarding works and performance, etc. | Interpersonal workflow, and exchange of personnel policy and solution, data, information and knowledge management, participation online, etc. |
|------------|---|--|---|

### 2.3 A Broad Schematic System for E-Government Type Models

Electronic Government (E-Government) refers to the processes and structures pertinent to the electronic delivery of government services to the public.

Electronic Government is functionally dependent on the assertion that E-Government “internal partnership”, namely, comprising Administration, Political, Civil Service, Parliament and Judiciary functions; E-Government “external partnership”, namely, comprising Central, Provincial/State/County or Local functionality; and information sharing as a service can be effectuated within and between Governments and between Governments, the Public Sector and the Private Sector; Government is amenable to a public service deliver model of varied complexity, which takes cognizance of both the two characteristics of E-Government “internal partnership” and E-Government “external partnership” (See Figure 2.1).

### 3. Best Practices of E-Government Worldwide

E-government refers to the delivery of information and services online through the Internet or other digital means. Many government organizations have embraced

the digital revolution and are putting a wide range of materials from publications and databases to actual government services online for citizen use. Here, we review the current condition and development of e-government.

#### 3.1 Development of E-Government

Similar to the dramatic changes in e-commerce and e-trading, the e-government revolution offers the potential to reshape the public sector and remake the relationship between citizens and government. The wide variability in the extent to which web government is taking hold creates an opportunity to study how the e-government revolution affects public sector performance and democratic responsiveness. In the UN/ASPA global survey (2000), five categories of measuring a global survey, five categories of measuring a country’s e-government progress have been identified. A country’s e-government progress should be identified as follows:

**Emerging web presence:** A country may have a single or a few official national government websites that offer static information to the user and serve as public affairs tools.

**Enhanced web presence:** The number of government webpages increases as information becomes more dynamic with

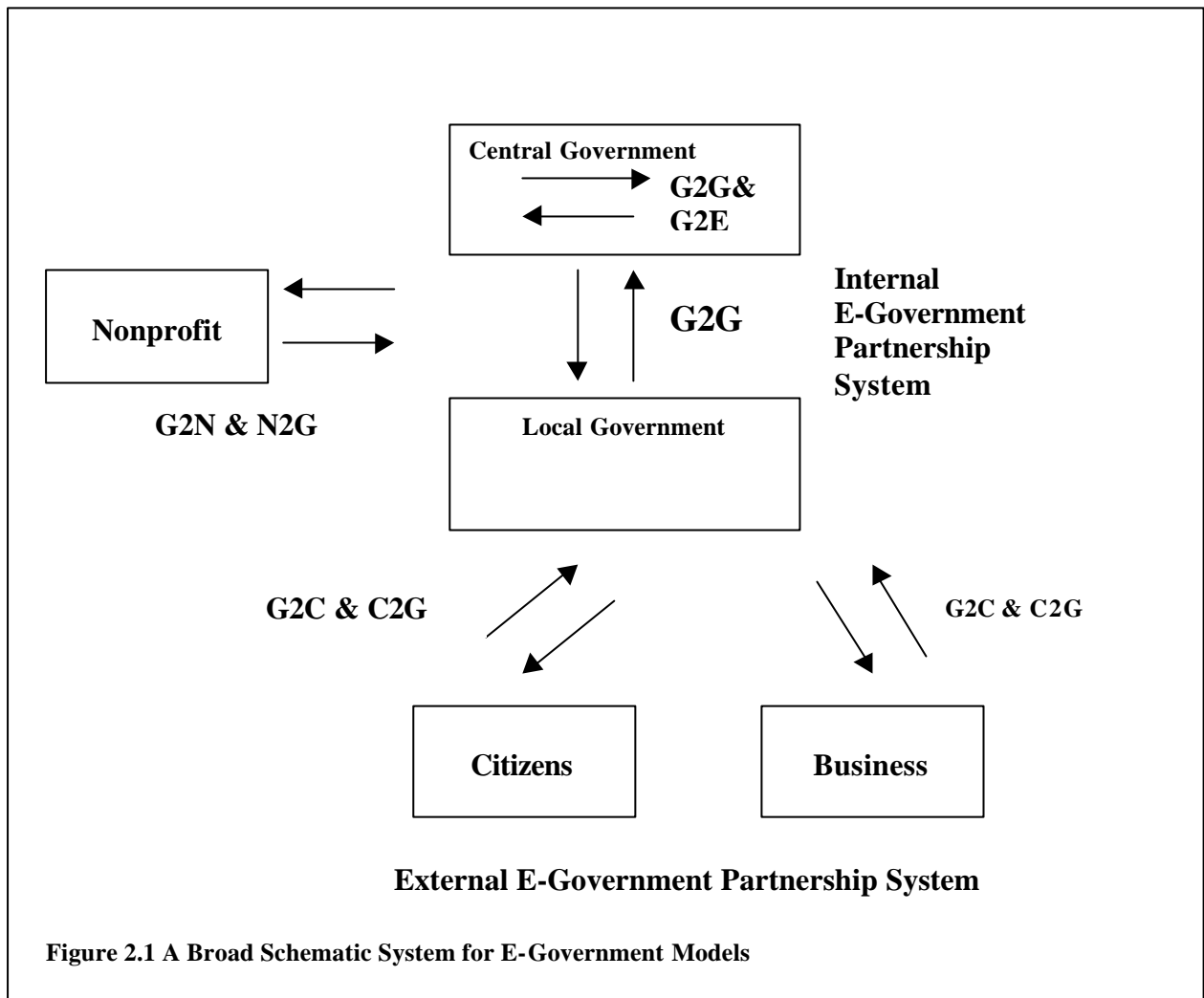


Figure 2.1 A Broad Schematic System for E-Government Models

users having more options for accessing information.

**Interactive web presence:** A more formal exchange between user and a government service provider takes place, i.e. forms can be downloaded; applications submitted online.

**Transactional web presence:** Users easily access services prioritized by their needs; conduct formal transactions online, like paying taxes; registration fees.

**Fully integrated web presence:** The complete integration of all online government services through a one-stop-shop portal. (UN/ASPA, 2000)

### 3.2 Enlightenment from E-Government Examples

Government can begin with developing an e-government strategy which would set out plans of how government can deliver the targets set for it in the context of the national strategic framework. To examine this

process and how e-government plans and strategies is success, we may need to make more understand the take-up of the strategy across the authority as a whole.

An example of E-government of New Zealand is showed as follows:

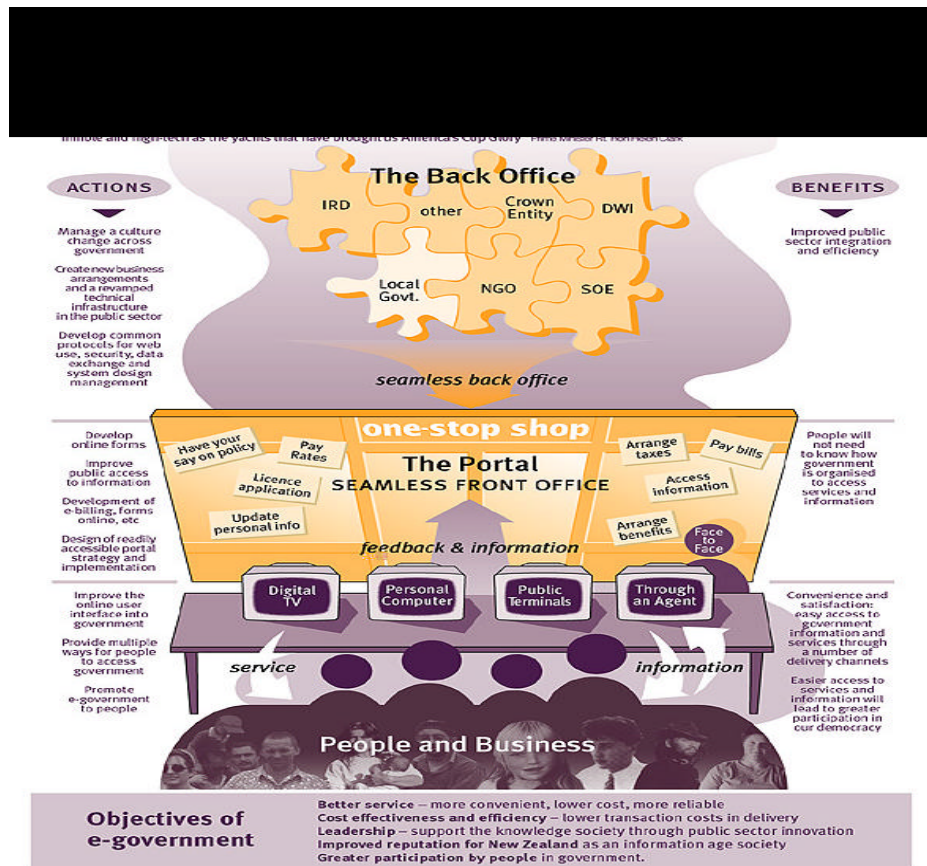


Figure 3.1 E-government Scheme of New Zealand in 2001

Source: New Zealand Government, 2001. (<http://www.e-government.govt.nz/programme/egovt-strategy.html>)

The following features characterize countries that are successfully implementing e-government projects all over the world. E-Government should be implemented with:

1. Comprehensive. To the greatest extent possible, citizens should be able to do everything they have to do or want to do with their government through one e-government portal.

2. Integrated. All e-government applications should be integrated with each other, so citizens can avoid the need to provide the same data over and over and governments can save time and money by not needing to re-enter data.

3. Ubiquitous. Access to a jurisdiction's e-government portal and its connected sites and applications should be available to users/citizens from any Internet-capable connection, Internet appliances.

4. Transparent/Easy to Use. E-government sites should be designed and operated so that the most novice of computer users can readily find the information they need, provide the information requested by the government agencies with which they are dealing, and otherwise perform all e-government transactions.

5. Accessible. The design and operation of e-government systems should, from the ground up, take into account the special needs of the disabled, and make it possible for them to use these systems as easily as the non-disabled.

6. Secure. E-government systems need to protect the confidentiality of data provided by citizens, the records created and stored by government, and the content and existence of citizen-government transactions performed over the Internet.

7. Private. Data about citizen-government transactions, and the content of those transactions, needs to be fiercely protected by the government.

8. Re-engineered. It is not enough to replicate electronically the administrative processes and procedures currently in place. It is necessary to thoroughly re-evaluate the overall mission of the jurisdiction and then design a digital structure that creates a government-citizen interface that simplifies and streamlines each transaction individually and the entire process of government administration generally.

9. Interoperable. An excellent e-government site is one that provides appropriate and up-to-date links to other e-government sites, at its own and other levels in the government hierarchy. All e-government sites need to work together seamlessly.

10. Be Developed to E-governance Systems. Developed from e-government, E-governance systems can just as easily implement democratic process, e-making of or policy, building up e-community. E-government serves not only as a means of administration, but also as a primary tool of collective and democratic decision-making, and participation for society.

### **3.3 A Summary of E-Government Initiatives Worldwide**

For E-governments worldwide, the digital revolution offers unprecedented opportunities for improving virtually all forms of public revolution offers unprecedented opportunities for improving virtually all forms of public service delivery. From Europe to Asia to South America to Africa, countries are taking a more innovative approach to doing business with

their citizens. The use of the Internet to deliver government information and services has become a growth industry all over the world.

**Table 3.1 A Summary of E-Government Initiatives Worldwide**

| <b>Country</b>   | <b>E-Government Initiatives</b>   |
|------------------|---|
| <b>AUSTRALIA</b> | <p>Specific commitments were made to:</p> <ul style="list-style-type: none"> <li>- deliver all appropriate Commonwealth services electronically on the Internet complementing;</li> <li>- establish a Government Information Center through the Office for Government Online as a main point of access to information about government services;</li> <li>- establish electronic payment as the normal means for Commonwealth payments; and</li> <li>- establish a government-wide intranet for secure online communication.</li> </ul>   |
| <b>AUSTRIA</b>   | <p>Government acts and understands itself as a partner of private industry especially in the transition process from the post-industrial service society to the information society:</p> <p>Information Retrieval Systems; EDI; Interactive Online Systems</p>  |
| <b>CANADA</b>    | <p><i>E-Government</i> is effected through the following principles:</p> <ul style="list-style-type: none"> <li>- Responding to public demand for better and more accessible Government;</li> <li>- Clarifying roles and responsibilities including (i) areas of involvement; (ii) areas of disengagement; (iii) areas of devolution;</li> <li>- Achieving affordable government;</li> <li>- Ensuing that resources are devoted to highest priority</li> </ul>  |
| <b>CHINA</b>     | <p>The Government Online Project covers five aspects of contents:</p> <ul style="list-style-type: none"> <li>-The first is to make known government functions online, which is to post to the Internet the functions, duties, organizational structure, administrative procedures and rules and regulations of governments and their departments.</li> <li>-Second, government documents, archives and databases posted online.</li> <li>-Third, daily activities of government departments released online, which is regarded as a channel of openness of administrative affairs.</li> <li>-The fourth is online administration, with an electronic center of files and documents to improve administration efficiency.</li> <li>-Online trading is the last to be posted online.</li> </ul> |
| <b>DENMARK</b>   | <p>E-Government is based on the following principles:</p> <ul style="list-style-type: none"> <li>- Information Society for All;</li> <li>- Realization of the Global Research Village;</li> <li>- Realization of Broadband Internet for Research Institutions;</li> <li>- Use of Online Publications;</li> <li>- IT Usage in Municipalities</li> <li>- IT Usage in Danish Companies;</li> <li>- Electronic Filing;</li> <li>- The Portable Revolution;</li> <li>- IT Usage in Education;</li> <li>- Electronic Supported Administration &amp; Legal Roles</li> <li>- IT and the Disabled- Plan of Action</li> </ul>   |

|                       |   |
|-----------------------|---|
| <b>FINLAND</b>        | <ul style="list-style-type: none"> <li>- E-Government deploys the following:</li> <li>- Sharing of Data between National Base Registers;</li> <li>- Messaging e-mail;</li> <li>- EDI for some applications;</li> <li>- E-commerce;</li> <li>- Telework; Smart Card Use, Kiosks and Internet Use;</li> <li>- One-Stop Service;</li> <li>- Communication and Documentation become increasingly electronic;</li> </ul>   |
| <b>FRANCE .</b>       | -IT has lost its “special narrow status” in preference to being perceived as one of the necessary tools for modernizing or improving government administration  |
| <b>HONG KONG</b>      | The Government published the "2001 Digital 21 Strategy" signifying its firm commitment to lead by example in the adoption of e-business, both in conducting internal business operations and in delivering public services to the businesses and the community on an "anywhere anytime" basis.  |
| <b>JAPAN</b>          | <p>The Millennium Project “Electronic Government” includes:</p> <ul style="list-style-type: none"> <li>- Online administrative procedures</li> <li>- Basic system such as electronic authentication</li> <li>- Network base</li> <li>- Technological base</li> <li>- Electronic public procurement</li> <li>- Security measures</li> </ul>  |
| <b>NEW ZEALAND</b>    | <p>Intends to be among the governments which actively manage e-technology to make life better for its people. Overall that requires government to do two things:</p> <ul style="list-style-type: none"> <li>- create the environment where others - the private sector, communities and individuals - can make the most of e-technology;</li> <li>- capitalize on e-technology to improve the way government serves New Zealanders.</li> </ul>  |
| <b>SINGAPORE</b>      | The “Singapore ONE” Initiative is one of the first implementations of multimedia broadband networks and applications in the world. The program is a national initiative that delivers a new level of interactive, multimedia applications and services to homes, businesses and schools throughout Singapore.   |
| <b>UNITED KINGDOM</b> | <p>There are four guiding principles underlying the Government’s strategy as set out in <i>E-government, a strategic framework for public services in the information age, April 2000</i>:</p> <ul style="list-style-type: none"> <li>- building services around citizens choices;</li> <li>- making government and its services more accessible;</li> <li>- ensuring that new technology does not create a digital divide between those with ready access to electronic media and those without; and</li> <li>- using information more effectively.</li> </ul> |
| <b>UNITED STATES</b>  | <p>E-Government is based on 7 principles comprising the following:</p> <ul style="list-style-type: none"> <li>- Easy access;</li> <li>- Re-engineered Systems;</li> <li>- Automated Systems;</li> <li>- One-Stop Service;</li> <li>- Service by Customer, not Provider;</li> <li>- Privacy protected and embraced;</li> <li>- Access to the physically challenged</li> </ul>  |

**Source: Summarized from the E-Government Program websites of the above countries.**

#### **4. E-Government Research Issues in Public Administration**

As the E-Government initiatives become a primary access point for millions of citizens to access government, many issues need to be considered like:

- How will e-government influence the performance of public organizations?
- What are the organizational effects of e-government and information technology?
- What did E-Government change public administration, organization structure and interface in an information age?

These questions have several implications for researchers and practitioners in the field of public administration. There is already evidence to indicate that more and more baseline data needs to be collected to determine the longitudinal effects of e-government initiatives on public administration. We have to examine theoretically and logically more issues of e-government for administrative development so that we could analyze and conclude the impacts of e-government on public administration.

##### **4.1 Administrative Interface**

Administrative interface has been transformed from unitary people-people interface into multi-interface such as people-people interface, people-network-people interface, people-network interface, network-people interface, and system-system interface, with different interfaces characteristics, operation procedures and regulations.

In Government the transition to electronic delivery of services will not only involve changes to the systems, procedures

and processes of the relevant services but will also affect the way in which the public and the business community deals with the government. Customers will no longer need to interface directly with government officials in order to secure a particular service. They also do not need to know which agency is the service provider, as the service can be obtained through a kiosk or personal computer. What is important to them is to be able to secure the required service speedily and easily. These new trends will influence the nature of government administration and management, thereby reinventing the government to make its experience seamless to the citizens.

Another issue more detail in E-Government is Various User interfaces. The standard user interface and the World Wide Web browser have done much to extend useful computing to every area of our society. The standard interface, commonly based on Microsoft Windows, flattens the learning curve needed for each new application. The Web browser's ease of use and widespread public acceptance have led to use this technology in direct public contact. However, further advances in user interfaces are likely to focus both on simplicity and increased power. Digital library technologies. Data visualization technologies allow users to manipulate large data sets to get a better understanding of the information they contain. Research into the interaction between people and machines, including speech recognition and 3D modeling, will likely lead to innovations in the way people perceive and use the information environment.

Finally, Effective Service Delivery—Electronic government will be a seamless and comprehensive interface to government, designed and delivered from the citizen's perspective.

## 4.2 Digital Administration

Emerging with E-Government, digitalization of public organization has happened, such as MIS and Web system, Digital Office and E-paper, Knowledge management and sharing system, Structural and Process Change, E-Citizens and E-Learning.

E-government initiatives includes dozens of digital applications that can be implemented across a broad range of functional government areas – from public health and safety departments to motor vehicle and criminal justice agencies. The digital applications include:

**1) Public Access Systems** that satisfy the public's need to know and right to know. These systems make information easily available over the Internet to citizens, businesses, government workers, and other government entities.

**2) Knowledge Management Systems** that turn your organization's data into useful, intelligent information and deliver it over intranets, extranets, and the Internet to those who need it, thereby enhancing efficiencies and facilitating the decision making process.

**3) Transaction Systems** that encompass public access and knowledge management systems, and also enable end users to submit payments and registrations, obtain certificates, and engage in other transactional processes.

**4) E-Government System Infrastructure** that provides many things: session management, systems management (audit and logging), scalability, etc. Yet because the e-government space promises considerable change over the next few years, perhaps the most important quality of an e-government system infrastructure is

flexibility.

**5) MIS and Web Integration System** that the most effective solution for categorizing information on government Web pages would be to develop a database-driven system, where all information is automatically listed in databases as it is placed online within internet, extranet, and intranet. Web integration is the process of the standardization of data definitions and data structures by using a common conceptual schema across a collection of data sources.

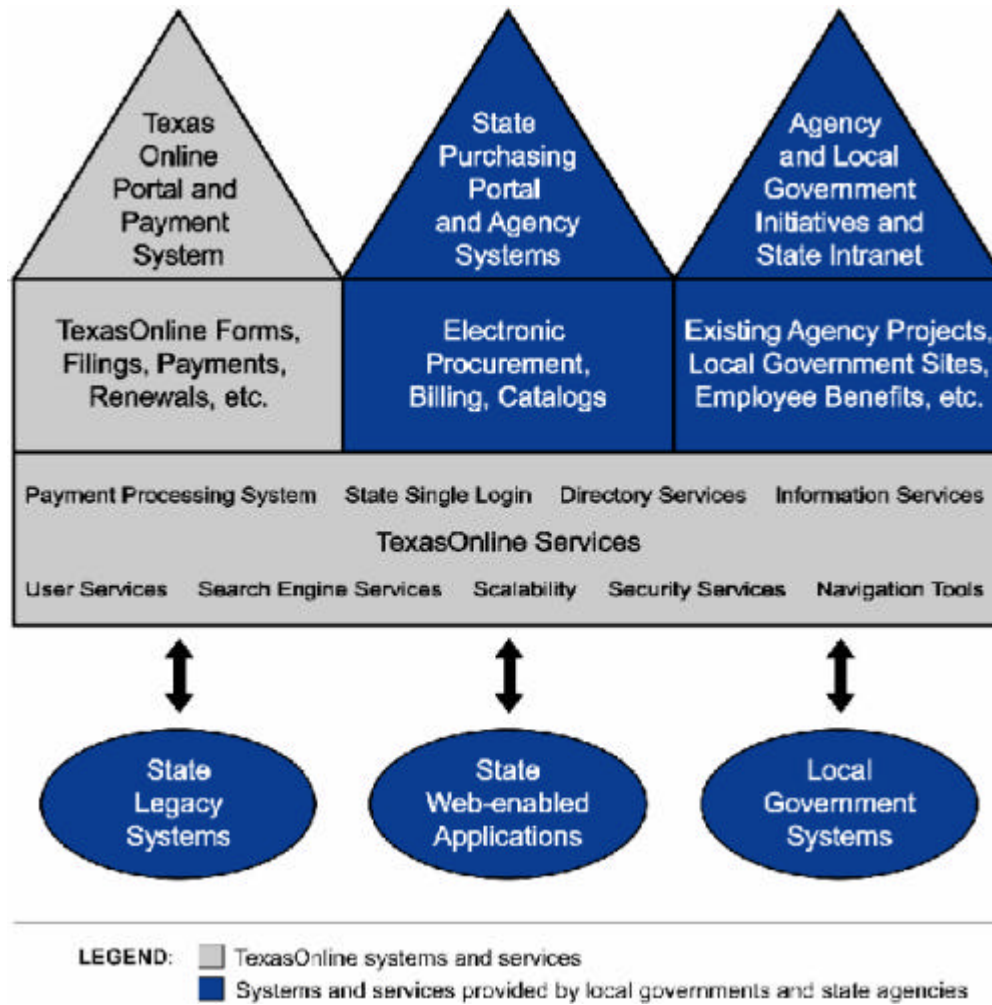
**6) New models for public-private partnerships and other networked organizational forms.** Given the diversity of players involved in delivering government services, developing effective IT systems often requires new coalitions of partners at all levels of government, and between government and the private and nonprofit sectors.

**7) Intuitive decision support tools for public officials.** Technologies and data standards that encourage information search, selection, analysis, and sharing can strongly influence the nature and effectiveness of decision making by elected officials, senior executives, and program managers alike.

**8) Archiving and electronic records management.** More and more information now resides in electronic rather than physical files, generating new issues around record definition and content, version control, public access, ongoing preservation, and the ability of government to maintain history and accountability.

The use of new tools by Texas Electronic Government Initiatives may also have implications for public administration. (See Figure 4.1)





**Figure 4.1: Texas Electronic Government Initiatives**

Source: TexasOnline Task Force, “A Feasibility Report on Electronic Government” November 1, 2000

### 4.3 Virtual Organization

In an effort to create citizen-focused government, government should create a virtual organizational structure for government services. E-Governmental system has moved the whole government onto the web and networking. Web sites need to be categorized by the function of the service rather than the agency administering them. A well designed portal to all online

federal information will make citizen-government interaction more efficient and effective.

The most effective solution for categorizing information on government, E-government should develop a database-driven system, where all information is automatically listed in databases as it is placed online. Implementing this type of system would allow more accurate and

efficient searches. There are a number of other applications that could be developed that would make government more customer centered. Government should develop “information on request” systems to provide people with government information. In addition, government should expand and standardize the number of applications for online forms. All government forms should be publicly available and searchable on a central federal Web site.

To exhibit virtual organization, the National Partnership for Reinventing Government proposed the creation of the International Trade Data System (ITDS). ITDS was intended to be a partnership of the Customs Service and a number of other regulatory agencies, including the Food and

Drug Administration, the Environmental Protection Agency, and the Department of Agriculture, to accomplish a variety of trade-oriented tasks without the traditional hindrances of agency boundaries. The proposed system would allow importers and exporters to essentially fill out one master form that would combine all of the information all of the various agencies may need. This process would lead to cheaper, more accurate, and more timely exchange and recording of information, and expedite the physical movement of trade by reducing the time goods are kept at the border for inspection. (Rob Atkinson, 2001)

Another example is also from the TexasOnline Internet Portal, showed as follows:

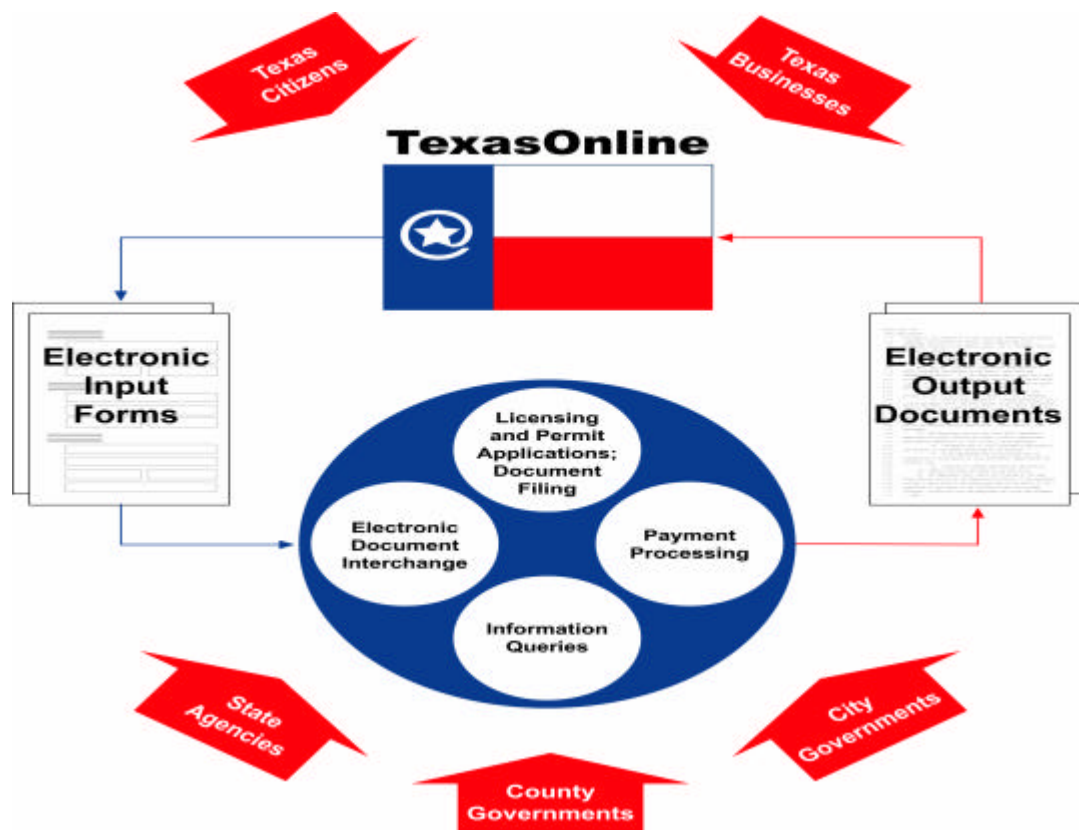


Figure 4.2 Virtual Government-The TexasOnline Internet Portal  
Source: TexasOnline Task Force, “A Feasibility Report on Electronic Government”  
November 1, 2000

#### **4.4 Redesigning Administrative Organizations**

Given the extraordinary pace of changes in the IT industry, the term E-Government itself is somewhat new and essentially implies upgradation of the efficiency and effectiveness of the administrative machinery through the combination of information technology and sophisticated multimedia to deliver better, cost effective and speedy services to the citizens. Public Administration is, in fact, in the midst of one of the most rapidly changing periods in history.

There has been a shift in importance from the traditional inputs of a production process to the processes involved in the creation, storage, dissemination and use of information. The new technology has already had a profound impact in the manner in which large organizations function. Many of these organizations have had to restructure themselves to create a flatter - less hierarchical - structure. At the same time one of the principal efforts of all organizations have been devoted to creation and sustenance of an environment of learning in view of the quantum increases in knowledge and changes in technology.

E-Organizations or E-Agencies became a key part of government organization. E-organizations like the E-Government professional department, which is a part of government networking operation entity, is in the process of conducting several e-government research projects at the state, national, and international levels to address many e-government issues, but more work is needed. The E-Government organization is currently working to build knowledge about e-government and e-governance, improve the productivity of public agencies and to give managers in public organizations the skills needed to maximize their performance in an

information age.

However, more baseline data needs to be collected to determine the longitudinal effects of e-government on public agencies. There is also an ongoing academic debate regarding the structural effects of information technology on public and private organizations. Researchers have debated for long times about whether technological innovations cause centralization or decentralization in organizations. Rethinking the entire organizational structure of public sector bodies, allowing the citizens and representatives to consider and approve a new form of organization (through a popular referendum, convention, or other means), and then designing a digital or virtual network to implement these new forms is also a opportunity to resharp public administration.

#### **4.5 Administrative, Political and Ethic Issues in E-Government**

Some administrative, political and ethic issues derived from E-Government should be addressed here, such as security, privacy and digital divide.

E-government implementations must consider security and privacy to ensure information systems and holdings are appropriately protected and individual rights are respected. Security generally refers to protection of the information systems assets and controlling access to the information itself. Application of security is specific to the situation and sensitivity of the information. For example security protection for public information, such as the minutes of council meeting on the web, is not stringent as would information specific to an individual's information. Privacy generally refers to respecting the right to have information attributed to an individual

(often called nominal information) be treated with an appropriate level of protection. Information privacy protection laws are often put in place to regulate this.

Another issue is Digital Divide. At the same time, concerns have already been expressed about the gap between the technology haves and have-nots, and more popularly known as "the digital divide." In order to ensure that countries avoid creating a digital divide and create conditions to ensure that growth of the knowledge economy contributes to carrying out a democratic process of efficient, equitable and sustainable development, expanded dialogue and new patterns of cooperation among public, private and civil society organizations are needed.

#### 4.6 A Holistic View to Administrative Issues in E-Government

In conclusion, addressing these administrative issues related to E-government

may be complicated but can be managed so long as the issues are treated in a fair and realistic way to be key issues in E-government. A holistic view on administration's processes, communication and information resources may think like this way:

- electronically mediated communication
- improving communication with the citizen
- merging external and internal processes
- improving co-operation between agencies
- supporting administration and governance processes on different levels and in different stages
- Innovative organisational design
- cooperation over distances, across organisational boundaries, across hierarchical echelons (Maria A. Wimmer, 2001)

Maria A. Wimmer's SHEL Model for administrative processes may be a good point for understanding and further studies on these issues (See Figure 4.3).

Administrative Processes in the View of the SHEL Model

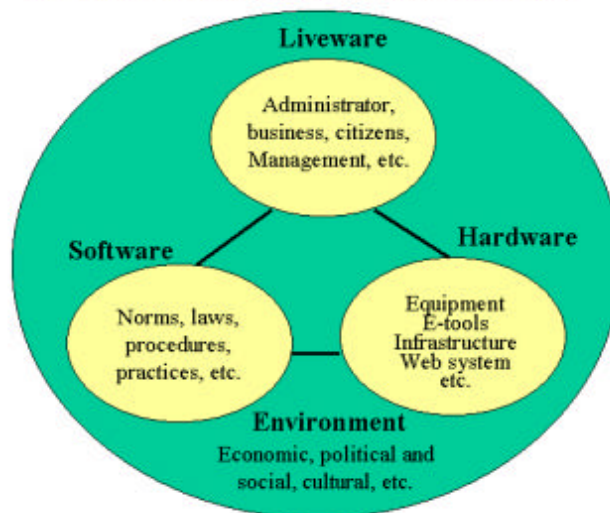


Figure 4.3 Administrative Processes in the View of the SHEL Model

Source: Revised from Maria A. Wimmer, Knowledge Management in e-Government, 2001. <http://falcon.ifs.uni-linz.ac.at/>

## 5. Conclusion

The movement to e-government, at its heart, is changing the way people and businesses interact with government. E-Government offers a huge potential in seeking innovative way to reach the ideal of government of people, by people and for people.

This paper just provides a basic view for guidelines and frameworks that address e-government's definition, characteristics and types. It also gives impetus for resources that enable e-government's planning, design, and implementation through reviewing E-government initiatives worldwide. By analyzing concepts and theoretical framework in these issues may give the broader context of structural initiatives for E-government development and the recommendations for further studies of E-government in public administration. The issues of public administration riised by E-government such as Administrative interface, Digital Administration, and Virtual Organization, need to be analyzed systematically and further studied especially in the digital era of 2000s. Public Administration in 21st century will be a electronic, digital and virtual world for the scholars and practitioners in this field.

## Reference

1. Blake Harris, E-governance, 2000 (<http://www.iadb.org>)
2. Brendan Boyle, Electronic Government for New Zealand: Managing the Transition., May 8, 2000. Thesis of MBA.
3. David C. Wyld, "The Auction Model: How the Public Sector Can Leverage the Power of E-Commerce Through Dynamic Pricing". The PricewaterhouseCoopers Grand Paper. October 2000.
4. Electronic Government Task Force of State of Texas, TexasOnline: A Feasibility Report on Electronic Government, 2001. (<http://www.dir.state.tx.us/egov/>)
5. Jeffrey Roy, E-Government: Enabling & Empowering Tomorrow's Public Service, January 31, 2000. ([www.governance.uottawa.ca](http://www.governance.uottawa.ca)).
6. Jim Melitski, The World of E-government and E-governance, 2001. <http://www.aspanet.org/solutions/TheWorldofE-governmentandE-governance.htm>.
7. Mark Cleverley, *e-Government Symposium a Great Success*, May 10, 2001, NYSFIRM.
7. Maria A. Wimmer, Knowledge Management in e-Government, 2001. <http://falcon.ifs.uni-linz.ac.at/>
9. Rob Atkinson, "Creating a Digital Federal Government", *Information Impact*, October, 2000, [http://www.cisp.org/imp/october\\_2000/Creating\\_a\\_Digital\\_Federal\\_Government.htm](http://www.cisp.org/imp/october_2000/Creating_a_Digital_Federal_Government.htm).

10. Rob Atkinson, Digital Government: The Next Step to Reengineering the Federal Government. PPI .2000.  
<http://www.netcaucus.org/books/egov2001/pdf/digov.pdf>
11. Robert D. Atkinson, Digital Government: The Next Step to Reengineering the Federal Government, 2000.  
(<http://www.ppionline.org>)
12. Rogers W' O Okot-Uma, Electronic Governance: Re-inventing Good Governance, 2000.
13. Sharon S. Dawes, Peter A. Bloniarz, Kristine L. Kelly and Patricia D. Fletcher, Some Assembly Required: Building a Digital Government for the 21st Century, Report of a Multidisciplinary Workshop Held in October 1998.
14. Software Foundations for e-Government, e-Government: Making Sense Revolution of a Revolution, Government Technology, Aug.2000.  
<http://www.ezgov.com>.
15. Software Foundations for e-Government, Realizing E-Government, Government Technology, 2000. <http://www.ezgov.com>.
16. Software Foundations for e-Government, e-Government: Privacy, Security and Accessibility, Government Technology, 2000. <http://www.ezgov.com>.
17. State of Texas, Department of Information Resources Electronic Government Strategic Plan, January 2001.
18. TexasOnline Task Force, "A Feasibility Report on Electronic Government", November 1, 2000.
19. Theresa A. Pardo "Realizing the Promise of Digital Government: It's More than Building a Web Site", *Information Impact*, October, 2000.
20. The Council for Government Excellence, E-Government: The Next American Revolution, 2000.  
(<http://www.excelgov.org>)
21. United Nations Division for Public Economics & Public Administration American Society for Public Global Survey of E-Government, 2000,  
(<http://www.unpan.org/egov/egovbrochure.pdf>)