

Do We Need a Powerful E-Government?

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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.

A trend towards reforming the public sector has emerged in many countries, primarily by the aspirations of citizens around the world, who are placing new demands on governments. The success of government leaders is increasingly being measured by the benefits they are creating for their constituents, namely, the private sector, citizens and communities. These 'clients' of government demand top performance and efficiency, proper accountability and public trust, and a renewed focus on delivering better service and results.

The essence of knowledge management in this context is to provide strategies to get the right knowledge to the right people at the right time and in the right format. One of the important message of this paper is that there are huge disparities in the access and use of information technologies, and that these disparities are not likely to be removed in the near future unless a concerted action is taken at the national, regional and the international levels.

In this context, the appropriate use of ICT plays a crucial role in advancing the goals of the public sector and in contributing towards an enabling environment for social and economic growth.

1. 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.

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.

Today people live in a fast changing world where the free flow of information, ideas and knowledge exchanged across the globe are having a profound impact on the way the world functions.

Technological and scientific advances have significantly changed the way that information is gathered, stored, processed and disseminated.

While no final conclusions can yet be drawn on the impact of ICT on good governance, it is clear that these technologies have been helping countries respond to international calls for higher standards of accountability, transparency, and participatory governance as critical elements of democracy and State legitimacy. Computer and communication technologies have empowered citizens, organizations representing civil society, and the media to expand their participation in public debate, while also helping increase the dialogue among State institutions and the society at large.

With integrated information systems, products and services worldwide are now increasingly becoming available to the smallest of enterprise and the remotest of regions. While it took 75 years for telephone to reach 50 million users when it was invented, it has taken the World Wide Web (WWW) only 4 years to reach the same number of users (UNDP, 1997). Information technology (IT) advances are changing the way the world interacts. Some have termed it the second industrial revolution (Warschauer, 2005).

Based on the results of the information and communications technologies, a new "digital" economy and society are arising. This new computer and communication networked environment needs new set of services and technologies besides new rules and values, which determine the behavior of its actors. According the Internet based technologies, it has been changed the way business was done the world over, and now changing the way government interacts with citizens and business sector.

The digital knowledge based economy has a strong impact on the life of all citizens at the global level. Under suitable terms, it can be a powerful engine for growth, competitiveness, and jobs, while at the same time it improves living standards.

The history of local e-government technology applications goes back to the 1990s, to the early days of the Internet. The initial concept of electronic government was for mostly as the "mirror image" of electronic commerce in the public sector (Chochliouros, Spiliopoulou, 2006). However, the e-government has now become an explicit component of public sector reform as a fundamental instrument to increase efficiency, strengthen competitiveness, and enhance modernization. A trend towards reforming the public sector has emerged in many countries in recent years spurred, primarily by the aspirations of citizens around the world, who are placing new demands on governments.

2. Challenges for E-Government?

In particular, e-government can now be estimated as: “the use of information and communication technologies in public administration combined with organizational change and new skills in order to improve public services and democratic processes and strengthen support to public policies” (European Commission, 2003). E-government may be also defined as: ‘the continuous innovation in the delivery of services, citizen participation, and governance through the transformation of external and internal relationships by the use of information technology, especially the Internet’. Building on this definition it is possible to point to four significant dimensions to public sector change in a digital era: service, security, transparency and trust.

Electronic Government has become a powerful administrative tool for governments around the world. Governments at all levels are attempting to improve services and increase their interactions with citizens using ICTs. The growth in e-government has been rapid. For example, in USA, the percentage of local governments with Web sites increased from 8,7% in 1995 to more than 80% in 2000.

There is a current debate about the concept and characteristics of electronic government. This debate can be interpreted through (Almazan, Gil-Garcia, 2006):

- Managerial perspective;
- Citizen Centered perspective;
- Evolutionary perspective.

According to the managerial perspective, E-Government must focus on managerial processes. This perspective establishes that the main objective of e-government is to improve managerial effectiveness and efficiency. According to Wescott, “e-government is the use of ICT to promote more efficient and cost effective government, facilitate more convenient government services, allow greater public access to information, and make government more accountable to citizens” (Wescott, 2002).

The citizen centered approach to electronic government emphasizes the predominant role of citizens as drivers of e-government. This perspective focuses on people’s needs and takes into consideration important transformation in government procedures to make services and information more accessible to citizens. Naief Yehya mentions: “this technology can make life simpler for people and their real objective is to promote, protect and make strong the democratic values”.

Finally, the third perspective maintains the assumption that electronic government is evolutionary. Some authors contend that each one of the stages is already electronic government. Others delimit from witch of the phases a government can be considered electronic.

Several countries around the world are attempting to revitalize their public administration and make it more proactive, efficient, transparent and especially more service oriented. To accomplish this transformation, governments are introducing innovations in their organizational structure, practices, capacities, and in the ways they mobilize, deploy and utilize the human capital and information, technological and financial resources for service delivery to citizens.

The United Nations e-Government Survey 2008 presents an assessment of the new role of the government in enhancing public service delivery, while improving the efficiency and productivity of government processes and systems. The results of the Survey indicate that governments are moving forward in e-government development around the world. However, given the high demands placed by e-government on a multitude of foundational pillars which include prerequisites of infrastructure, appropriate policies, capacity development, ICT applications and relevant content that need to be in place to fully implement e-government services, progress is slow. Only a few governments have made the necessary investment to move from e-government applications per se to a more integrated connected governance stage.

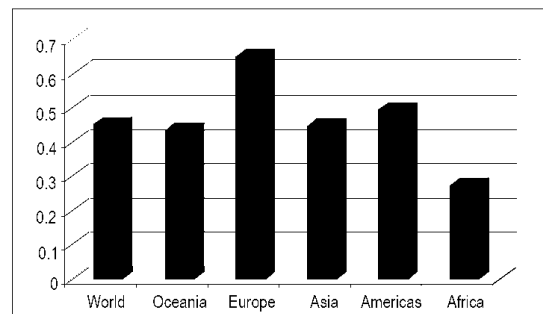


Figure 1. Regional Average of e-Government Readiness (Source: United Nations, 2008:37)

Figure 1 clearly shows the difference between the five regions, with Europe (0.6490) having a clear lead over the other regions, followed by the Americas (0.4936), Asia (0.4470), Oceania (0.4338) and Africa (0.2739). Asia and Oceania are slightly below the world average (0.4514), while Africa lags far behind.

It’s important to say that, there are no countries in the top 10 from the African, Caribbean, Central American, Central Asian, South American and Southern Asian regions (in fact no such countries in the top 35). The high cost of deploying a robust infrastructure capable of handling e-government applications is one reason for this discrepancy. In addition, many developing countries have been unable to fully implement their e-government policies, mainly due to other competing pressing social issues that need to be dealt with in the

context of tight budget constraints, such as: health, education and employment, to name a few.

Table 2. Disparity in Internet usage

Region	As percent of		% of national population as Internet users
	World population	World users	
Africa	14,0	1,7	1,8
Asia	56,4	34,5	8,9
Europe	11,4	28,7	36,8
Middle East	4,1	2,3	8,3
North America	5,1	23,8	68,0
Latin America/Caribbean	8,5	7,3	12,5
Oceania	0,5	1,8	49,2

(Source: Internet World Stats, 2005:1)

However, today there are still some barriers preventing the full exploitation of public sector information. These may originate from diversities either in language or in pricing issues, or in administrative rules and/or practices, such as differences in replying time, the refusal to transmit the information in digital format, the need to prove than the information is not limited by data protection rules and exclusive deals that already exist between public and private firms. There are also technical problems: poor telecommunications service, limited penetration and/or high cost of Internet connections, lack of suitable regulatory environment, inadequate payment systems and low credit card usage. In fact, world's public sector is today at a crossroads, in front of numerous global challenging conditions, institutional change, and the profound impact of new technologies in a background which evolves very rapidly (Cap Gemini Ernst & Young, 2004).

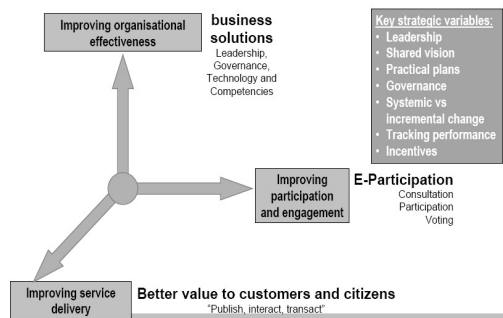


Figure 2. From Online Automation of Traditional Services to a Connected World

3 From traditional government to e-government

The Economist magazine estimates that the potential savings of implementing e-government could be as much as 110 billion \$ and 144 billion \$ in the USA and Europe, respectively (Symonds, 2000). Unlike the traditional bureaucratic model where information flows only vertically and rarely between departments, e-government links new technology with legacy systems internally and in turn links government information infrastructures externally with everything digital.

E-Government does not mean:

- to equal digitalisation with modernisation;
- to replace analogous bureaucracy by digital bureaucracy.

Table 3. Main differences between traditional and e-government organizations

Traditional Government	E-Government
Bureaucratic controls, clear authority hierarchy	Client service and community empowerment, leveled/blurred hierarchy
Process centricity	Customer centricity
Isolated administrative functions and data collections	Integrated resource service and knowledge focus
Functional specialization of units or geographic bias	Breakdown of unit barrier, government integration
Decision based on uniform rules and awkward reporting approvals	Decision based on negotiation and implicit controls and approvals
Isolated administrative functions	Integrated resource services
Disjointed information technologies	Integrated network solutions
Time consuming process	Rapid streamlined responses

(Source: Huang, Chen, Wang, 2006:359)

Effective E-Government enables decision-making as well as decision follow-through across three primary components:

- **Leadership:** The roles and responsibilities of the organization's appointed officials and senior executive management that shape the organization's strategic vision, culture, decision-making processes, and plan for action;
- **Organizational Structure:** The structure and form of organizational relationships that support decision-making, foster appropriate culture, and build essential skills in order to marshal resources to make things happen;
- **Process Management:** The management of how organizations serve their customers and measure success or failure, including leadership and decision-making processes, as well as changes to operational processes

required to support new E-Government capabilities.

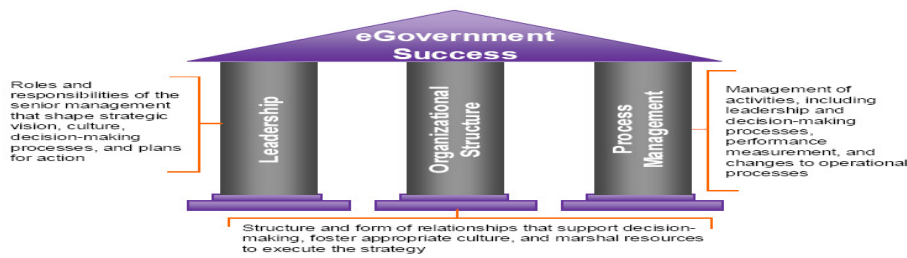


Figure 3 The “Three Pillars” of eGovernment (Source: US Interior Department, 2003:37)

Although e-government technologies have a potential to improve the lives of the 80% of the world’s population that lives in developing countries. More than 75% of Australians file income taxes online, while the mayor of Minnesota receives about 13000 emails from the public each year (Palmer, 2002). It’s also clear that there is a

gap between developed and developing countries. Besides the lack of sufficient capital to build up expensive national information infrastructures on which e-government is based, developing countries also lack sufficient knowledge and skills to develop suitable and effective strategies for establishing and promoting e-government.

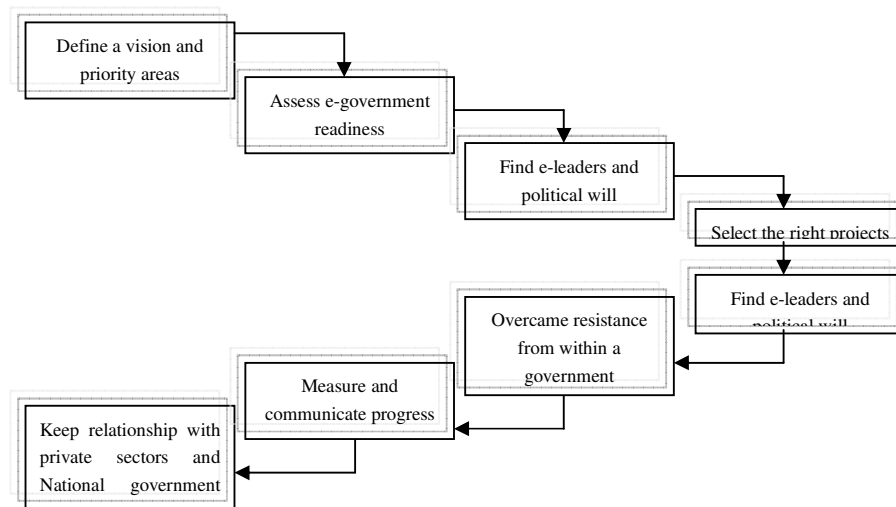


Figure 4. The roadmap for e-government implementation

The various stages of e-government development reflect the degree of technical sophistication and interaction with users. Hiller and Belanger appreciate that there are five stages of e-government implementation.

Table 4. The stages of e-government implementation

Stage 1	The most basic form of e-government; uses IT for disseminating information by posting data on Web sites that are viewable
Stage 2	Two way communication between government and constituents; e-mail

	systems are incorporated as well as data transfer technologies
Stage 3	Web based self services where online service and financial transactions are available
Stage 4	Various government services are connected internally and externally for enhanced efficiency, user friendliness, and effectiveness
Stage 5	The promotion of web based political participation, including online voting; highlights Web based political activities by citizens

(Source: Hiller, Belanger, 2001:64)

4. The Best practices in e-government

As local e-government practices are becoming more wide spread, governments have realized the significance of developing standards and benchmarking local e-government. The benchmarking efforts and developed standards are working as a visionary guide for federal, state, and local government authorities to adopt ICTs for their e-governance practice. There are several examples of best practices in e-governance such as Taiwan, Singapore, USA or German example.

Taiwan it's possible to receive the highest marks in the evolution of e-government in the last two three years. Taiwan's government websites were all very user-friendly and easy to navigate. Taiwanese citizens who have difficulty accessing information can view a site map on most sites. The websites of the various governmental agencies Almost all of its sites had a link to a fully-featured English version. Most sites featured links to a privacy policy. Many sites allow users to sign up for updates or newsletters via email. Some sites also offer PDA access. Taiwan also has a website called MyEGov which centralizes access to all government websites. Taiwan's websites could also received high marks for disability access. Taiwan's websites seem to have been designed with its users in mind, and this is reflected in the ease of use and usefulness of their websites.

Singapore also has a highly sophisticated e-government system. Singapore has an outstanding portal called eCitizen, which serves as a gateway to all government services available online. The site is easy to navigate and aesthetically pleasing. It also features links to information customized for businesspeople or non residents. The sites of the various government agencies are content-rich; many include publications, press releases, video clips and databases. Almost all websites included contact information and online services, and all featured privacy statements. The Ministry of Education website has links so that students, parents, teachers, and partners can view information tailored to their needs; this kind of personalization mirrors the efforts of many private-sector websites and is an easy way to direct citizens to the information they are seeking.

The United States portal FirstGov provides citizens with a convenient collection of information and services, such as finding the cheapest gas prices in your region. The site is easy to navigate and the websites of the various government agencies are user-friendly as well. Most feature an ample amount of information available in the forms of publications and databases, and have audio/video clips, webcasts, interactive maps, and user surveys. Almost all websites included contact information, updates, online services, and all featured privacy and security statements. Accessibility is a highlight of the vast majority of the United States sites as well. The portal's many services are highlighted in

a list found front and center on the homepage. The portal can be translated into over 30 languages.

The best practices are cyclic in nature because e-government is not a discrete, one time initiative. In syntheses, the best practices for successful local e-government are (OLA, 2002):

1. Assess whether to offer e-government
 - Think strategically about e-government;
 - Determine which services are suitable for online delivery;
 - Assess the government's readiness for e-government;
 - Involve top officials and all participating departments;
 - Engage the public and determine whether public access to Internet is adequate.
2. Assess opportunities for collaboration
 - In planning evaluate other's Web sites;
 - Participate in intergovernmental networks of e-government professionals;
 - Explore partnerships on e-government with other public and private agencies.
3. Prepare to execute and fund e-government
 - Prepare plans to implement e-government;
 - Identify the needed funds, people, and technology and analyze their full costs;
 - Develop funding strategy;
4. Provide security
 - Install current security software and monitor the site;
 - Develop incident response and disaster recovery procedures;
 - Actively manage employee access to data and Web site;
5. Set a policy framework to guide e-government
 - State the purpose of a Web site for providing local government services;
 - Establish policies on public access to online records and on data archiving;
 - Establish privacy policy;
 - Determine marketing strategy;
 - Review and update e-government policies.
6. Make the Web site function optimally
 - Design the Web site to fulfill user needs and meet e-government objectives;
 - Follow industry guidelines for site presentation and content;
 - Test the site before public release;
 - Plan for ongoing site maintenance.
7. Evaluate e-government
 - Evaluate how the Web site is meeting e-government goals;
 - Revise Web site based on evaluation results and other feedback.

Almazan and Gil-Garcia after reviewing different ways to present the stages of e-government, propose the following model:

Table 5. Evolutionary approaches to e-government assessment: an overview

E-Government Stage	Additional Technological and Organizational Sophistication
Presence	Limited government information; Few Web pages developed by single agencies; Static information about government structure and services
Information	More dynamic information (frequent updates); Greater number of web pages; Statewide portal as the entry point with links to most of the state pages;
Interaction	Forms that can be downloaded; Two way communication through electronic mail; Use of search engines; Use of chats, forums and other forms of interactive communication (service related); Some customization (citizen's profiles, use of passwords)
Transaction	Online web services (secure and completely online), including accepting electronic payments; More customization (use of passwords, citizen's profiles); Portal organized according to people's needs instead of government structures
Integration	Service portal with a single checkout point Multiple agencies, same function, different levels of government; Multiple agencies, different functions, same level of government; Multiple agencies,

	different functions, different levels of government.
Political Participation	Political participation; Online public forums; Opinion surveys; Online voting.

(Source: Almazan, Gil-Garcia, 2006:368)

The concept of connected government is derived from the whole-of-government approach which is increasingly looking towards technology as a strategic tool and as an enabler for public service innovation and productivity growth. Connected or networked governance revolves around governmental collective action to advance the public good by engaging the creative efforts of all segments of society. It is about influencing the strategic actions of other stakeholders (Atkinson, 2003).

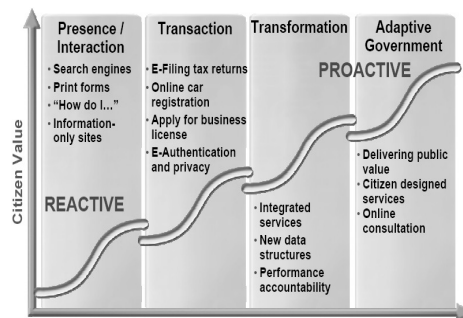


Figure 5. Public services in Connected Governance (Source:Badger, 2007:18)

ICT-based connected governance efforts are aimed at improved cooperation between government agencies, allowing for an enhanced, active and effective consultation and engagement with citizens, and a greater involvement with multi-stakeholders regionally and internationally.

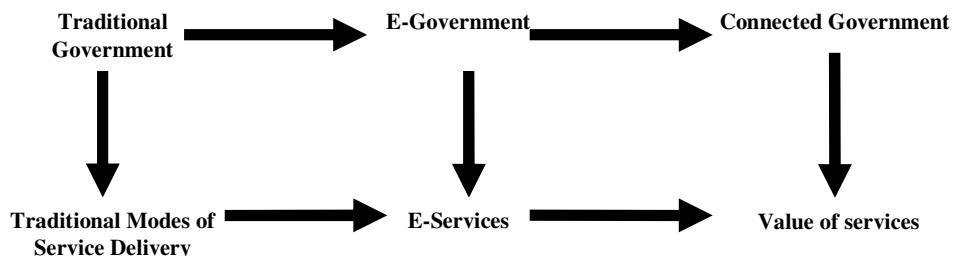


Figure 6. Evolving approach to Public Service Delivery
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Figure 6 indicates the approach to public sector service delivery has evolved over time from the traditional model of government dispensing services via traditional modes to an emphasis on e-government and eservices per se, to an integrated approach for enhancing the value of services to the citizen.

4. Conclusions

The technological developments in terms of hardware, software, and network will likely be making development and utilization of local e-government services cheaper and easier. Especially the increasing availability of viable Open Source Software for e-government can expand the choices available to public sector organizations.

Many governments initiatives are driven by open source technology. Governments in countries like United Kingdom, Brazil or India have recognized the importance of open source applications in creating online spaces where people can interact with their government. Increasingly, open source content management systems (CMSs) have emerged to address the issue of skill as a determinant for the running and maintenance of e-government portals. They are easy to install and relatively inexpensive compared to their proprietary alternatives. They offer also a great opportunity for governments that want to encourage citizen participation in government's affairs, but do not possess technology expertise in online publishing.

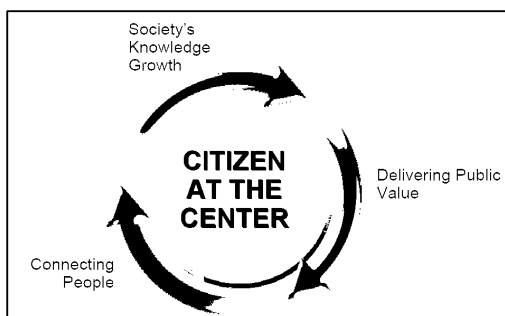


Figure 7. Guiding Government Values

Maybe the key of the process is to put citizen's needs the overriding design principle in all government initiatives:

- Act as a single enterprise, rather than many disconnected agencies and bureaus;
- Organize government around citizens' needs rather than convenience or historical precedence;
- Develop the flexibility to respond effectively and appropriately as citizens' needs change;
- Creating richer citizen-representative dialogue;
- Enabling citizens to participate in new ways;
- Empowering citizens;

- Building wide-ranging, real-time feedback mechanisms;
- Increasing citizen choice;
- Doing less and enabling more

Australia's federal government uses an infrastructure to transform delivery of social services and welfare programs. Networked Virtual Organization consolidates services of 22 government agencies and departments into one point of entry. ROI: US\$ 700M in efficiencies over past 5 years; another US\$ 210M expected over next 6 years. In this conditions customer satisfaction increased from 67% to 85%.

Now, all the governments must understand that is absolutely necessary to change the perception of e-government concept from a reactive perception (search engines, print forms, information only sites, e-filing tax returns, online car registration, apply for business registration, e-authentication and privacy) to a proactive perception (integrated services, new data structures, performance accountability, delivering public value, citizen designed services, online consultation).

The United Nations agencies actively seek to promote access and reduce digital divide by fostering greater awareness of the potential of new technologies. The UN Department of Economic and Social Affairs (UNDESA) takes the lead in information dissemination about policy advice and capacity building to assist Member States in reducing digital disparities and promoting e-government for development through the United Nations Online Network in Public Administration and Finance (UNPAN).

The UN Global E-government Survey 2008 stated that the potential of e government, as a tool for development, hinges upon a minimum threshold level of technological infrastructure, human capital, and e-connectivity for all. E government strategies and programs will be able to be effective and 'include all' peoples only if, at the very minimum, all have functional literacy and education, which includes knowledge of computer and internet use; all are connected to a computer; and if all have access to the internet. The benefits - and reach - of e-government programs was crucially dependant on real access of ICT to all. It was this opportunity of the 'inclusion of all' that was the vision of the United Nations.

E-government as a transformational project should be framed first and foremost as a conversation, one that should ideally resonate across the widest possible set of individuals and organizational actors within any given jurisdiction. The likeminded global challenge for the world as a whole is to extend this conversation to a transnational plain in a manner that enables a greater exchange of knowledge and resources globally, and a more informed and well-devised set of e-government strategies nationally and locally.

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