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*Social Science Computer Review* 2003 21: 6

DOI: 10.1177/0894439302238967

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# New Technologies and Institutional Change in Public Administration

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This article aims to study and analyze, from a multidisciplinary point of view, the organizational and institutional transformations that public administration is experiencing due to a country's transition to the information and knowledge society. Three specific goals are pursued: (a) studying the use of new technologies in the public administration, (b) studying the impact brought about by the use of new technologies by the public administration, and (c) studying the institutional changes caused by the use of these technologies. To achieve these goals, three guiding lines are considered: first, the term governance; that is, the collection of institutions and rules that set the limits and the incentives needed for the constitution and functioning of interdependent networks of actors (government, private sector and civil society actors); second, the new institutionalism perspective; and finally, the relationship between technology and organizational and institutional change.

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**Keywords:** ICTs, organizational change, institutional change, e-government

## INTRODUCTION

A new revolution, different from the precedent industrial one, is taking place in our societies. This transition process toward the digital era is characterized by the spread of new information and knowledge technologies, globalization, and networking activities. These elements become the source that allows for the expansion of the capacities of people because they encourage new and better social opportunities, economic facilities, and political freedoms. What, then, are their main implications?

In the first place, the new economy is one that is focused on information and knowledge. Specifically, the new context is based on the microelectronic information and communication technologies and has a predominant way of organization: the Internet. Information and knowledge become, therefore, the key factors for production, productivity, and competitiveness in companies but also in cities, regions, and countries. As a result, they set themselves up as the essential economic and social development tool of our world. This means that no agent will be able to take part of the new society without previously assimilating the technological system of the information society.<sup>1</sup>

The new economy is a global economy as well, that is an economy whose nuclear components have the institutional, organizational, and technological capacity to operate as a unit in real time and at a planetary level (Castells, 2000). A global economy does not need to be a strongly international or worldwide economy (Couriel, 1998). As a consequence, its main attribute has to do with the fact that many political decisions (including regulations) defi-

nitely affecting our lives will be made within a transnational space, one that will not be institutionally shaped as a space or as a political community.

For many authors, and generally speaking, three reasons have given rise to the new situation: (a) the increasing economic liberalization and the growth of the goods and services exchanges, (b) the capital markets liberalization that has led to the integration of the financial and stock markets worldwide, and (c) the technology, information, and communications revolution.

Finally, this informational and global economy is also a networked economy. Indeed, integration, interconnection, and network creation are the main characteristics of the technological explosion and the electronic digitalization. They give rise to the new morphology of our societies because they substantially modify the production, experience, power, and culture processes that become more geographically decentralized, more flexible, and more adaptable to the present economy changing conditions.

This new environment is giving rise to numerous transformations in different fields. The political systems are not an exception, and nowadays, they are the subject of multiple changes as a consequence of the transition of societies to the new economy. Therefore, the new technologies (ICTs) become important tools that must be used by the public administrations to improve their administrative efficiency, to deliver better services to citizens, and to make more suitable decisions. But simultaneously, ICTs modify the relationship between the government and the society, help build new spaces for citizenship participation, and give rise to more transparent and accountable governmental processes.

Although it is quite clear and has been widely accepted that ICTs applications may result in organizational changes (for example, efficiency and speed when it comes to delivering public services, proximity to the citizen, or simplification of formalities and requirements) that may improve public management values, it has not been proven yet that they necessarily give way to institutional transformations. In Nye's (2002) words,

Technology affects society and government, but the causal arrows work in both directions. Technological change creates new challenges and opportunities for social and political organizations, but the response to those challenges depends on history, culture, institutions, and paths already taken or forgone. (p. 2)

That is why the main goal of this article is to approach the public administration organizational and institutional transformations from an integrated and multidisciplinary perspective, trying to answer some questions such as the following: (a) Are ICTs changing the public administration culture, its status quo? Are transformations only limited to process computerization? (b) ICTs lead to institutional change, but do they define it as well? (c) Are ICTs being used considering the type of institution they are inserted into? (d) What are the incentive systems that make actors accept or reject the use of ICTs? (e) How does ICTs implementation in public administration affect the actors culture, history, and mental models?

To achieve this goal, the article adopts an analytical, not empirical, approach.<sup>2</sup> Thus, this framework will emphasize three issues: first, the governance concept, which, for the author, is related to the set of institutions and rules that set the limits and the incentives that result in the constitution and working of interdependent networks of actors (from the government, from the private sector, and from the civil society); second, the electronic government concept, defined as "the continuous optimisation of government service delivery, citizen participation and governance by transforming internal and external relationships through technology, the Internet and new media" (Gartner Group, 2000, p. 3); and finally, the relationship between technology, organization, and institutional change.

## TOWARD A VIRTUAL STATE

More and more government and public administrations are getting used to the new tools brought about by the new information society. As Fountain (2001) stated, the Internet and a growing array of information and communications technologies not only modify possibilities for organizing communication, work, and business but also government and the state.

Governments and the different public administration levels can simultaneously be subjects and objects of the new ICTs embeddedness. As subjects, the governments' role is key to influence the design of a telecommunications regulatory framework that promotes competition and facilitates citizen access, the formulation of measures that increase confidence in electronic transactions, and the establishment of minimum services to satisfy the demands of less favored groups.

As objects, governments and public administrations share the new opportunities offered by ICTs, adapting them and using them, either internally (within the administration or among administrations) or externally (affecting the citizen-government or citizen-administration relationships), to increase their efficiency, effectiveness, and political legitimacy. When this happens, one refers to electronic or digital government.

Although several authors have helped clarify the meaning of the electronic government concept, for the author, this term is related to all those activities based on the modern information and communication technologies (and particularly on the Internet) that the state carries out to increase public management efficiency, to improve citizen-oriented public services, and to provide a more transparent performance framework.

As a result, going digital does not mean buying some computers or designing a web site to display information. On the contrary, it has to do with transforming the fundamental relationship that exists between the government and the general public. Accepting this notion (and therefore that of the Gartner Group, 2000) implies admitting the existence of two components:

1. Electronic governance that emphasizes citizens, stakeholders, and elected representatives' unity in order to take part in the governance of communities with electronic equipment
2. Electronic service delivery that guarantees government services provision by means of the use of electronic tools

Several initiatives can therefore take place when considering electronic government actions. Indeed, generally speaking, one can distinguish two types: all programs related to the use of ICTs in internal processes and structures and all those that use ICTs when governments and administrations consider their relationships with other actors (citizens, civil organizations, and firms). The first group gathers initiatives under the name of electronic or digital public administration or back office adjustments, whereas the second one is known as electronic, digital, or online government or front office adjustments.

At the same time, when considering the relationships between the government and other parties, there are several types of programs that may be designed. For the purposes here, it is interesting to refer to the following:

1. *Citizen access to different types of information:* The government is the greatest gatherer, processor, and keeper of any kind of information. Beside using information for its own goals, it can share information with citizens and organizations that are also interested in it. Therefore, when talking about an information provision initiative, we must consider (a) information that the government wants to disseminate (news, regulations, policies, or laws), (b) information that the government gathers for its own use but that can be given to other users (geographical, economic, or demographic data), and (c) information that the government is required to provide as a result

- of citizen demands (for example, performance indicators, personal data, or management and budget reports).
2. *Online transactions:* When electronic transactions become a possibility, citizens and firms are able to fulfill requirements and formalities 24 hours a day, 7 days a week, 365 days a year, from any part of the country by the means of a computer at home, at school, or at a public telecenter.
  3. *Public services provision:* Offering public services through the Internet is one of the most interesting experiences when digitalizing the state. The so-called online services are better adjusted to the users and therefore satisfy their expectations because they get rid of distances, inequalities, and physical obstacles. Many of the most successful initiatives in this sense have to do with medicine or education.
  4. *Democratic process and citizen participation:* Undoubtedly, ICTs adoption gives rise to important changes between the citizen and the state that affect the democratic process and government structures. Particularly, the Internet potential rests on its nonhierarchical and cybernetic character that favors interactivity. In this sense, electronic government initiatives also include electronic democracy experiences, that is actions that require the use of information, knowledge, and communications technologies to promote democracy (Hacker & Van Dijk, 2000).

## **E-GOVERNMENT PROJECTS AND THEIR ORGANIZATIONAL AND INSTITUTIONAL IMPACT**

Much has been written about the potential benefits of developing and implementing an e-government strategy.

In the first place, digitization has cut transaction costs all the way to zero in some cases. One of the more important examples lies in costs savings generated by online bill payment and documents download. Fountain (2001) stated that “movement from paper-based to web-based processing of documents and payments typically generates administrative costs savings of roughly 50 per cent” (p. 5). Not only do governments benefit from use of the Internet in this sense but also intermediate institutions (such as banks) and users.

The possibility of lowering costs gives rise to efficiency gains because now governments have the chance to achieve their objectives using fewer resources such as time, money, and physical inputs. “Public organizations are rapidly becoming networked, and they are using these networks to produce and deliver services. This will ultimately lead to efficiency improvements, much as has happened with the private sector,” stated Mechling (2002, p. 155).

Finally, from a strategic point of view, the new information and communication technologies, and specifically the Internet, may change the way governments pursue their goals. On one hand, new opportunities arise when governments use networks. Electronic procurement, for instance, permits the creation of “wider, deeper, and more transparent markets that allow government agencies to reduce administrative costs and to obtain lower prices in markets” (Fountain & Osorio-Urzua, 2001, p. 239). On the other hand, at the organizational level, important transformations occur because information technologies affect the chief characteristics of the Weberian bureaucracy, and therefore, they reshape the production, coordination, control, and direction processes that take place within the public sector (Fountain, 2002).

Because of all these major changes, e-government, in sum, may lead to a more citizen-oriented government that offers an improved range of services. This, in return, increases the level of satisfaction among the population as well as the acceptance of the public sector (Bertelsmann Foundation, 2002).

If one understands organizational change as the design and implementation, in a deliberate way, of a structure innovation, a policy, a new goal, or an operational transformation (Thomas & Bennis, 1972), there is no doubt about the implications of the electronic government initiatives in terms of organizational change.

What is not clear, though, is that ICTs applications within the public sector result in institutional alterations (formal or informal); or as the economist Douglass North (1990) said, in game rules reforms; or strictly speaking, in constraints that men impose on the economic, political, or social interaction.

It is then the intention here to analyze the impacts, if any, of ICTs on the institutional contexts where technological changes take place. In short, the article tries to determine if those transformations lead to what has been called institutional change.

One must then begin with a definition of this last concept. Prats (2000) stated that institutional change means to be able to intentionally or voluntarily insert innovation in a current system through a sufficiently assumed transformation of its rules and internal games. Alterations of relative prices, such as information costs or technology changes, become the most important source of institutional change. But, in fact, institutional change does not automatically come from those adjustments. Indeed, changes of relative prices are motivated by the perception transformations about those changes the actors involved experience as well as by their behavior alterations those perceptions give rise to, that is by the construction of new mental models that result from the acquisition of learning and skills that help interpret the new context.<sup>3</sup>

Thus, institutional change occurs whenever an alteration of relative prices is perceived by one of the parties taking part from a transaction as a win-win situation for that party or for all the participants involved. Therefore, institutional change depends on the actors' perceptions with respect to the gains (the payoffs, indeed) to be obtained.

On the other hand, institutions determine the payoffs.

Institutions are the structure that humans impose on human interaction and therefore define the incentives that together with the other constraints (budget, technology, etc.) determine the choices that individuals make that shape the performance of societies and economies over time. (North, 1994b, p. 1)<sup>4</sup>

Given the explanation of these concepts, does technology implementation lead to institutional change? Does it alter the actors' perceptions and therefore their mental models? If so, how?

The article develops these and other issues through several statements (see Table 1).

In the first place, the author believes, as Fountain (2002) did, that the potential benefits of implementing an electronic government strategy will be strongly influenced by the current institutions of government because the parties involved determine the choices they make depending on the incentives systems within those structural arrangements. Therefore, ICTs in the public sector are designed, developed, and used according to the preferences of government actors that, in turn, have been shaped taking into consideration the formal and informal rules and constraints as well as the enforcement characteristics of both. Obviously, this previous consideration leads us to declare that ICTs applications are being used considering the type of institution they are inserted into. "The choices we face in the present regarding the use of digital tools and the institutional arrangements in which they are embedded will influence the way governments work around the globe during the next century and beyond" (Fountain, 2001, p. 3).

This first statement makes clear that, in any government reform, institutions matter. However, it does not lead one necessarily to state that technology transformations alter the status quo of the public organizations. Indeed, Fountain (2001, 2002) explained that, so far, although decision makers have used information and communication technologies in different ways, they have done so in suboptimal conditions, and they have improved efficiency and

**TABLE 1**  
**Five Propositions About Information Technologies and Institutional Change**

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1. New technologies applications are being used considering the type of institution they are inserted into.
  2. Technology transformations do not necessarily alter the status quo of public organizations.
  3. Information and communication technologies will give way to institutional change if the new skills and learning that governmental actors acquire motivate a different perception about the potential gains that result from the new situation.
  4. Institutional change within the public sector will depend on aligned technological, managerial, and political variables.
  5. It is not easy to predict which direction institutional change brought about new technologies will take in the public sector.
- 

transparency but have not changed the current cultural practices for governmental routines, which are based on a strong bureaucracy model and are highly resistant to change.<sup>5</sup> Fountain (2001) added the following:

The process of enacting technology refers to the tendency of some organizational actors to implement new IT [information technology] in ways that reproduce, indeed strengthen, institutionalised sociostructural mechanisms . . . . Organizational actors tend to enact technology to preserve ongoing social, or network, relationships and to maintain performance programs. (p. 90)

To be able to accept that institutional change may occur as a result of the implementation of electronic government projects, one must go back to the previous definitions of this and other related concepts. Therefore, from a conceptual point of view, information and communication technologies will give way to institutional change if the new skills and learning that governmental actors acquire motivate a different perception about the potential gains that result from the new situation, for the design and use of the Internet within the public administration is a source of negotiation and political contest, the results of which have implications for authority, power, and resource distribution (Fountain, 2001). In turn, the degree to which those perceptions may be altered depends on how much the workplace of that actor is affected by the new structures that result from ICTs applications. According to this, because information technology projects within the public sector result in new organizational forms that exploit new knowledge that give rise to work alterations,<sup>6</sup> there is obviously a chance for institutional change to take place.

What will then definitely motivate that change?

Fountain and Osorio-Urzua (2001) classified in three groups the institutional variables that together will influence whether a project will be undertaken at all or, what is more important, whether it will be assumed at all by the parties involved, therefore giving rise to their perception alterations. Thus, they write about the following:

1. *Technological variables:* Access to and quality of the population's Internet use, availability of an internal technological infrastructure, or provision of technical skills to the government workforce. In this sense, they argued that "the quality of an agency's information and communication technology infrastructure and overall skill level are critical inputs to make-or-buy decisions" (p. 264).
2. *Managerial variables:* Efficiency and effectiveness of the supply chain, characteristics of the agency's culture, or capacity it has to adapt to and manage change. Again, the authors stated that "an agency that is well managed is likely to have a higher probability of success implementing either internal or outsourced e-government solutions" (p. 264).

3. *Political variables:* Perceptions of public servants about the potential labor cuts, administrative turnover, or changes in executive direction generated by e-government development, the desire of political actors to be associated to e-government projects, budgetary resources, and directions or orientation to long-term results.

Only when all these variables and their interrelationships take place will both organizational and institutional change occur.

But which direction does institutional change take? The author has already argued that technological applications are designed, understood, and used depending on the mental models of the actors, which, in turn, result from the incentives structure within the public sector. Thus, the decisions those actors make are influenced by those designs, understandings, and uses. But not only that, as a result, the new information and communication technologies that give rise to electronic government projects, themselves, are transformed in the process of being designed and used. North (1994b) referred to this with the term *path dependence*. For him, the direction of change is determined by the first decisions the actors make that strongly constrain subsequent choices.

Nevertheless, it would not be wise to assume that although actors may perceive gains, they subsequently make correct choices. Fountain (2001) said with regard to this issue that “actors may learn the ‘wrong’ lessons and act for several years on those lessons” (p. 85). She continued,

As North argues, path dependence exerts a potent influence on behavior. . . . It is easy to make poor choices because of uncertainty about how to use new technologies, and further, it is unclear that government. . . . has corrective mechanisms in place that would illuminate them. (p. 85)

To avoid those potential errors, Prats (2000) explained that institutional change must be incremental. He argued that this does not mean it has to be continuous and constant. Rather, institutional change implies the restructuring of a framework within formal and informal constraints that take place. Therefore, when referring to transformations brought about by information and communication technologies, one must expect a long process characterized by several years of knowledge, effective executive leadership, and investments in human resources.

However, Fountain (2001) kept arguing that although incrementalism might offer a nice explanation to avoid error when making technology-driven decisions, it does not prevent government actors from moving incrementally in the wrong direction. In sum, one can only conclude that it is not easy to predict which direction institutional change brought about by ICTs will take in the public sector.

## CONCLUSIONS

Societies have witnessed multiple changes during the past decades due to the so-called information revolution, which, in turn, has resulted in a globalization process and in important network effects. The private sector has rapidly adapted to this new situation. Governments are now being requested to enter the digital age, and they are doing so by implementing what are known as electronic government initiatives.

The use of ICTs within the public sector context has given rise to numerous alterations in the ways of working, which have resulted in organizational changes. But have they provoked institutional transformation as well?

It has been the intention in this article to show, from a theoretical point of view, that institutional change does not automatically occur whenever a technology implementation takes

place. To achieve this objective, the author adopted the new institutionalism framework, specially promoted by Nobel Prize winner North's contributions. That is, the author has applied the institutional analysis methodology to the study of the impacts of information and communication technologies in public administration.

In doing so, the following have been the main conclusions:

1. Electronic government projects are being implemented considering the type of institution they are inserted into, that is the current formal and informal rules and incentives systems embedded in the governmental structures.
2. Electronic government projects do not necessarily alter that type of institution for greater efficiency and transparency or lead to culture and actors' mental models transformations.
3. Electronic government projects will cause institutional change when they give rise to the adjustment of the whole set of technological, managerial, and political variables affected by ICTs implementation.
4. Electronic government projects do not determine whether institutional change, when occurring, takes a positive or negative direction, for the incrementalism theory explanations do not totally avoid error in decision-making processes.

The author is aware that she has not given answers to all those questions related to ICTs and institutional change in public administrations. Particularly, two important issues need further development. The first has to do with the specific institutional constraints government agencies have to face when implementing electronic government initiatives. Fountain (2001) noted that they take the form of oversight relationships, the budget process, or a long tradition of adversarial bureaucratic politics, for "agencies are embedded in an institutional environment that discourages horizontal cross-agency initiatives and that encourages competition among autonomous agencies for resources" (p. 101). But are those imposed limits the same everywhere in the world? How are they affected by the state reform processes carried out by many countries for the past 30 years?

Second, nothing has been said about the needed strategies that facilitate a positive institutional change that results in a sustainable, successful electronic-government-project implementation. A more in-depth analysis about this question is therefore required.

Building a virtual state is more than building a web site, more than improving public management. It is about the process of state reform. Therefore, it is more than studying organizational change and government modernization. It is about analyzing institutional transformations.

## NOTES

1. This does not necessarily lead to the local production of technological hardware, but it requires the ability to use advanced information and communication technologies as well as the capacity to reorganize society.
2. This article is, in fact, one of the products of current research, carried out by the E-Governance Project of the International Institute on Governance (Barcelona, Spain), about new technologies and institutional change in the Spanish public administration. Because the project itself began in June 2002, it is still too soon to show determining conclusions. That is why I have preferred to adopt a conceptual perspective that will help establish the theoretical and methodological research framework and will give rise to comments and questions from other colleagues as well.
3. In fact, perceptions and institutions are tightly bound. Perceptions are the result of the actors' mental models. These are the internalized representations that individual cognitive systems create to interpret the environment. Institutions are external mind mechanisms that individuals create to structure and to put the environment in order (North, 1994a).
4. North (1994b) was very illustrative:

If the highest rates of return in a society are to be made from piracy, the organizations will invest in knowledge and skills that will make them better pirates; if organizations realize the highest payoffs by increasing productivity then they will invest in skills and knowledge to achieve that objective. (p. 3).

5. The Working Group on E-Government in the Developing World (2002) explained some of the main reasons that make public officials resist. They include fear that technology will make them obsolete, fear that they will lose power and legitimacy, unfamiliarity with technology and fear of not using it correctly, fear that technology will mean more work for them, belief that they have nothing to gain professionally if they adapt to new technologies or nothing to lose if they refuse to do so, and concern that new and automated processes will mean fewer career opportunities.

6. "Rather than reinforcing centralization and bureaucracy, the new information technologies have tended to foster network organizations, new types of community, and demands for different roles for government" (Nye, 2002, p. 9). "From a functional perspective, vertical compression in management brought about by the implementation of information technology has changed the shape of bureaucracy from a pyramid to an hourglass" (Fountain, 2001, p. 58).

## REFERENCES

- Bertelsmann Foundation. (2002). *Balanced e-government. Connecting efficient administration and responsive democracy*. Retrieved from <http://www.begix.de/en/>
- Castells, M. (2000). *La era de la información. Volumen 1: La sociedad en red* [The information age. Volume 1: The networked society.] (2nd ed.). Madrid, Spain: Alianza Editorial.
- Couriel, A. (1998). Globalización y democracia en América Latina [Globalization and democracy in Latin America]. *Revista de la CEPAL*. Retrieved from <http://www.eclac.cl/publicaciones/SecretariaEjecutiva/7/lcg2037/couril.htm>
- Fountain, J. E. (2001). *Building the virtual state. Information technology and institutional change*. Washington, DC: Brookings Institution.
- Fountain, J. E. (2002). A theory of federal bureaucracy. In J. Nye & E. Kamarck (Eds.), *Governance.com. Democracy in the information age* (pp. 117-140). Washington, DC: Brookings Institution.
- Fountain, J. E., & Osorio-Urzua, C. A. (2001). Public sector: Early stage of a deep transformation. In R. Litan & A. Rivlin (Eds.), *The economic payoff from the Internet revolution* (pp. 235-268). Washington, DC: Brookings Institution and Internet Policy Institute.
- Gartner Group. (2000). *Singapore's e-government initiative*. Stamford, CT: Gartner First Take.
- Hacker, K., & Van Dijk, J. (2000). *Digital democracy: Issues of theory and practice*. London: Sage.
- Mechling, J. (2002). Information age governance. In J. Nye & E. Kamarck (Eds.), *Governance.com. Democracy in the information age* (pp. 141-160). Washington, DC: Brookings Institution.
- North, D. (1990). *Institutions, institutional change and economic performance*. Cambridge, UK: Cambridge University Press.
- North, D. (1994a). Economic performance through time. *Economic American Review*, 84(3), 359-368.
- North, D. (1994b). Institutional change: A framework of analysis. *Working Papers in Economics*. Retrieved from [http://netec.mcc.ac.uk/adnetec-cgi-bin/get\\_doc.pl?urn=RePEC:wpa:wuwpeh:9412001&url=http%3A%2F%2Fconwpa.wustl.edu%3A8089%2Feps%2Feh%2Fpapers%2F9412%2F9412001.pdf](http://netec.mcc.ac.uk/adnetec-cgi-bin/get_doc.pl?urn=RePEC:wpa:wuwpeh:9412001&url=http%3A%2F%2Fconwpa.wustl.edu%3A8089%2Feps%2Feh%2Fpapers%2F9412%2F9412001.pdf)
- Nye, J. (2002). Information technology and democratic governance. In J. Nye & E. Kamarck (Eds.), *Governance.com. Democracy in the information age* (pp. 1-16). Washington, DC: Brookings Institution.
- Prats, J. (2000). La dimensión institucional del desarrollo humano (The institutional dimension of human development). *Colección de Documentos*, 21. Retrieved from the International Institute on Governance, Barcelona, Spain, web site: <http://www.iigov.org/documentos/tema4/docu0021.htm>
- Thomas, J. M., & Bennis, W. G. (Eds.). (1972). *The management of change and conflict*. Baltimore, MD: Penguin.
- Working Group on E-Government in the Developing World. (2002). *Roadmap for e-government in the developing world*. Retrieved from the Pacific Council on International Policy web site <http://www.pacificcouncil.org/pdfs/e-gov.paper.f.pdf>

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