THE ROLE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY AND BUREAUCRACY IN PROVISION OF PUBLIC SERVICES OF BANKS

EL PAPEL DE LA TECNOLOGÍA DE LA INFORMACIÓN Y LAS COMUNICACIONES Y LA BUROCRACIA EN LA PRESTACIÓN DE SERVICIOS PÚBLICOS DE LOS BANCOS

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Abstract: *One of the most important challenges in the non-productive sector is extreme bureaucracy in banks which has confronted their provision of public services with several problems. The present paper challenges the public sector's perspective of information and communications technology as solutions that have generally been used for reduction of bureaucracy in state banks, in the way proposed by policies of banks' electronic public services which are resulted from the New Public Management ideology. In organizational structures, these alternate solutions are specified by the form of electronic bureaucracy. Electronic bureaucracies are organizations that adopt the pragmatic logic and procedures of a public bureaucracy with the aim of coordination of execution of organizational activities and resultantly, for the provision of services, but still, rely on information and communications technology for maintaining their pragmatic efficiency. These information and communications technologies are mostly used for facilitating and supporting basic coordinating organizational functions as well as surveillance of bureaucratic organizations in a way that this content shows that the process of alignment of shut-down processes and functional simplification with organizational needs and goals is an uncertain system in a way that there are no obligations for formation of what is expected from a technology or its consequences. However, the information and communications technology system lead to a redefinition of solidarity between banks' public services. It also amplifies the dependencies and functional relations among organizations and their employees.*
Keywords*: bureaucracy, electronic government, reformations on public sector through ICT, banks*

Abstracto: *Uno de los desafíos más importantes en el sector no productivo es la burocracia extrema en los bancos que ha enfrentado varios problemas a la provisión de servicios públicos. El presente documento desafía la perspectiva del sector público de la tecnología de la información y las comunicaciones como soluciones que generalmente se han utilizado para reducir la burocracia en los bancos estatales, en la forma propuesta por las políticas de los servicios públicos electrónicos de los bancos que resultan de la nueva ideología de la gestión pública. En las estructuras organizativas, estas soluciones alternativas se especifican mediante la forma de burocracia electrónica. Las burocracias electrónicas son organizaciones que adoptan la lógica y los procedimientos pragmáticos de una burocracia pública con el objetivo de coordinar la ejecución de actividades organizacionales y, en consecuencia, para la provisión de servicios, pero aún así, dependen de la tecnología de la información y las comunicaciones para mantener su eficiencia pragmática. Estas tecnologías de información y comunicación se utilizan principalmente para facilitar y respaldar funciones organizativas básicas de coordinación, así como la vigilancia de organizaciones burocráticas de tal forma que este contenido muestra que el proceso de alineación de procesos de cierre y simplificación funcional con las necesidades y objetivos organizacionales es una sistema incierto de una manera que no hay obligaciones para la formación de lo que se espera de una tecnología o sus consecuencias. Sin embargo, el sistema de tecnología de la información y las comunicaciones conduce a una redefinición de la solidaridad entre los servicios públicos de los bancos. También amplifica las dependencias y las relaciones funcionales entre las organizaciones y sus empleados.*
Palabras clave*: burocracia, gobierno electrónico, reforma del sector público a través de las TIC, bancos.*

Introduction

During the past two decades, the role of information and communications technology in banks and organizations has altered in many ways. Nowadays, the former ICT is no longer merely a tool or facilitator for other operations and processes of an organization, rather ICT has become the driving force for the entire sectors of an organization. In fact, it should be stated that nowadays, information technology is playing a twofold strategic and operational role in banks. This role adds to the responsibilities of managers and employees in these domains since not only in decision-making but also they will have a responsibility in execution and supporting of made decisions. As a linking agent, IT incorporates the entire sciences in order to be able to satisfy the information needs of experts, industries, organizations and every single person in different parts of society in shortest times and in best ways possible. Acceptance and adoption of ICT in organizations of the public sector such as banks and financial institutes is related to reformation programs aimed at reduction of inefficiencies resulted by overhead costs of bureaucracy. Not long ago, the imagination of working at home, or in any other place remote from the central organization with no physical presence at the organization   was only possible for highly advanced countries equipped with unique technologies. But nowadays, with respect to quick progression of technologies, especially regarding information and communications categories, and as a result of the spread of these technologies in other countries around the globe, other countries have also been provided with the possibility of employing these solutions. In fact, today's human has been forced to accept IT as an inseparable part of everyday life since the whole globe is moving towards globalization and physical boundaries between countries and people are disappearing and people are starting to live in a global village. Quick changes in the world of IT are obvious characteristics that have given a new form to the competition scene of the global economy. A specific section of IT which has been growing very fast during the recent years under the lights of information technologies, networks, and the internet is teleworking (Prize, 2002). On the other hand, occurrence of serious changes an almost every human structure including management, economy, earning extensive markets, virtual trainings, employment, shape of governments and growth of knowledge coefficient in every context compared to past century have resulted in great alterations in the types of communications of organizations, governments, nations and international societies (Alvani, 2014).   In general, electronic banking comprises different communication channels between the bank and its real and legal customers. Some of these services include the following:

1-Web and internet-based banking; 2- Mobile technology based banking; 3- telephone-based banking; 4- Kiosk banking; 5- Fax banking; 6- SMS; 7- ATM based banking ; 8- Smart card based banking and etc.

One of the main achievements of the internet and IT is electronic banking. Due to increasing economic interactions between different countries, the importance of e-banking is adding up. In addition, since humankind tends to adopt simpler solutions for undertaking financial and economic affairs, we require reviewing and innovating regarding facilitation of bureaucracy in banking systems (Bruno, 1997).

Challenges and barriers to the development of Iran's banking system are divided into two main categories: one category includes the elements that are located outside the banking system and are due to the non-productive structure of Iran's economy. In fact, due to high profitability of non-productive sectors, most of the capitals have been attracted to these sectors and therefore, the system of banking is faced with a challenge in this context. The other category includes the structural issues related to banks and their executive system and performance in different contexts. As it was mentioned previously, e-banking is highly beneficial for banks since not only it reduces the costs of banking operations, but also reduces the amount of human error in financial affairs. On the other hand, it eliminates the necessity for keeping and using cash in daily transactions. The former issue is important in some ways. First of all, using cash in daily transactions results in depreciation of money and ultimately, a huge cost is made for the government for printing new money. Nonetheless, keeping cash results in exiting of huge amounts of credits and money from the cycle of the economic system which in turn, results in inflation. On the other hand, when we

make use of electronic banking, banking affairs will be executed in a credit based manner and the money remains in the cycle of the economic system. An important outcome of e-banking is that during the next years to come, the combination of IT with commerce will comprehensively result in the formation of an era named as electronic commerce (Accounts, House of Commons Committee of Public, 2008; Clegg, 2007; Osborne & Plastrik, 1997).

One of the most important current challenges in the non-productive sector is the existence of extreme bureaucracy in banks that may   run their public service provision into various problems. The present paper challenges the public sector's perspective of information and communications technology as solutions that have generally been used for reduction of bureaucracy in state banks, in the way proposed by policies of banks' electronic public services which are resulted from the New Public Management ideology. In organizational structures, these alternate solutions are specified by the form of electronic bureaucracy (Bellamy & Taylor, 1998; Fountain, 2001; Gil-Garcia & Pardo, 2005; Gronlund & Horan, 2004; Lamarck, 2007). Electronic bureaucracies are organizations that adopt the pragmatic logic and procedures of a public bureaucracy with the aim of coordination of execution of organizational activities and resultantly, for the provision of services, but still, rely on information and communications technology for maintaining their pragmatic efficiency. This information and communications technologies are mostly used for facilitating and supporting basic coordinating organizational functions as well as surveillance of bureaucratic organizations   . These functions are defined in a legal-normative dynasty of rules that have been set for standardization of the executive procedures and provision of public services.

Method

The present article is aimed at investigation of the role of ICT and bureaucracy in the provision of public services of banks. In terms of objective, it is considered as a fundamental study and in terms of method, it is considered as a qualitative study. In this study, first, it has been tried to define bureaucracy characteristics and capabilities of ICT. Afterwards, the role of ICT in the reduction of bureaucracy in banks' provision of public services has been investigated with a focus on NPM (New Public Management).

Findings

Bureaucracy

Historically, bureaucracies have been understood as structures aimed at increasing efficiency in organizational practices and procedures. According to the theory of Webber, bureaucracy results in organizational efficiency through a set of coordination procedures and mechanisms including effective systems for rationalization of executive/bureaucratic efficiency. Webber has also proposed a series of characteristics and features that bureaucratic organizations need to have in order to realize its goals. These characteristics include a clear, official and authentic hierarchical structure; rational labor division, a hierarchy of official, clear, general and sustainable rules that make decisions and result in predetermined and or foreseeable consequences and; separation of functions in the organization. These organizational basics that have been proposed by Webber are considered as tools for maximization of organizational efficiency as well as mediation of the relationship between citizens and state and providing special democratic values including quality and justice (Cordele, 2012; Gay, Wilcox and Du, 1994). For a very long time, bureaucracies have successfully realized the organization of performance of executive state devices mostly through conflicting goals while simultaneously guaranteeing the higher objectives of capital owners and neutrality in the provision of public services without any defects (Clegg, 207). However, due to increase in the intervention of public sector that is the result of the spread of state of welfare, the need for integration inside the organizations of the public sector is felt more than ever before. Higher integrity requires production and exchange of information among citizens, between citizens and public organizations and, between different branches of public organizations. This information related extra burden on bureaucratic organizations, now even requires further processing in order to provide the services that need to be incorporated by the state of welfare. Increasing complexities of executive processes have significantly decreased the efficiency of bureaucracy that was earlier able to respond to

unpredictable challenges resulting from environmental uncertainties. These failures resulted in strict criticisms on bureaucracies of the public sector and their ability in the realization of their commitment on the provision of effective and efficient services (Peters, 2001). Although that these criticisms exist along with failures of bureaucracies in terms of provision of public services, there is no need for adoption a solution that is based on the removal of bureaucracies for neither of state and citizens. In fact, bureaucratic organizations execute organizational basics and fundamentals which in turn provides two sets of positive values. On the one hand, bureaucracies justify executive procedures aimed at more efficient (providing homogeneous results) and effective (results that are determined by the structure of process) provision of services. On the other hand, the legal behavior bureaucratic principle that uniformly determine the results of executive procedures and guarantee their predictability according to the impersonal principle of bureaucracy , execute neutral democratic values, justice, and equality in the provision of public services (Heeks, 2002).

Information Technologies

In public sector, instead of asking whether information and communications technology can improve the ability of public firms in terms of provision of more efficient and effective services through the leverage of influence of bureaucracies in realization of higher goals of equality and justice along with effective and efficient organizational arrangements or not, acceptance of information technologies is usually provoked by some people with limited vision who support non-bureaucratic organizational arrangements. Cordele proposes reviewing the role of ICT as a tool for supporting bureaucratic organizations instead of removing them (Kallinikos, 2004; Perrow, 1986). He further recommends that execution and incorporation of ICT for automation of existing executive procedures can improve the efficiency of executive systems without inflicting any changes on their basic logic. Although the potential of ICT for supporting and creating public bureaucracies is not something new, but it has long been effective in the history of acceptance of ICT in public sector. From 1980s on, different information and communications technologies have been designed and implemented with the aim of provision of efficient and sufficient tools for supporting bureaucratic organizations (Nohira and Berkley, 1994). Some instances of solutions incorporating technology include automation software, database management systems, work flow management systems, automatic decision support systems; web based services, electronic services and shared cloud systems. These systems have been designed for improvement of efficiency of bureaucratic organizations. Having a clear, efficient and more effective surveillance and, controlling the mechanisms that make use of information and communications technologies can provide invaluable solutions for designing and executing functional bureaucratic organizations, as well as improvement of homogeneity and predictability of executive procedures. In this regard, information and communications technologies can strengthen the functions that require a bureaucratic organization for realization of real-world tasks and resultantly, improve the organizations' flexibility and agility in responding to environmental changes (Cordele, 2007). Nonetheless, these organizations should overcome those data processing challenges that are related to spread of internal intervention scope. Increased complexity and uncertainty of this scope are reasons why public sector bureaucracies are in need of processing and exchanging more data. In fact, when no efficient decisions are made, they lose their influences and their efficiency is deteriorated as well. There are organizations that are able to make use of information and communications technology for supporting bureaucratic processes and overcoming challenges. On this basis, as the policy of electronic government, the shape of electronic bureaucracy helps with the efficiency and effectiveness of public devices and is recommended as long as it elaborates on amplification of bureaucratic values including equality and justice in providing citizens with state services (Kallinikos, 2005; & Luhmann, 2005).

Information technology and bureaucracy

Mintzberg (1983) states that the theory of electronic bureaucracy does not various types of effects that ICT can impose on bureaucratic organizations that differ in terms of executive tasks, level of uncertainty and internal coordinating mechanisms. In order to fill this gap, we use the the Mintzberg's taxonomy of bureaucratic organizations that differentiates between organizational bureaucracy and expert bureaucracy based on standardized mechanisms for standardization

rationalization and coordination of working procedures and related activities. Organizational bureaucracies are organizations that are effective in terms of execution of simple tasks and with respect to their type and nature can be fully determining in terms of progression of their execution. In addition these organizations are able to easily predict solutions and employ them automatically. On the other hand, expert bureaucracies deal with complicated tasks. These tasks include uncertainty and ambiguity and can only be realized through semi-standardized methods and through employing general and specific principles. Solutions here cannot be automatic; rather they are only described through application of human's analytic skills. As we can determine through driving this taxonomy, information and communications technologies can be considered as powerful allies since they try to simplify and make things automated, and analyze the functions of organizational bureaucracy in order to put a re-emphasis on organizational resources in realization of expert bureaucratic tasks that require human judgment. In order to determine how ICT can satisfy bureaucratic rationality as well as realization of values and related principles, we try to depict IT as functional simplification through a theoretic framework (Kallinikos, 2005).

Since the literature of electronic government is generally engaged with artifacts of ICT as a linear catalyzer for organizations and structures of public sector, it seems that there are more precise accounts of characteristics of technological artifacts that can help with a better theorization of ICT in reformations of electronic government or state. ICT are not merely simple tools that thoroughly result in improved organizational efficiency. In fact, ICT includes characteristics that make it ready for adjustment of objective practical relations or the organization as well as events and processes that it mediates. Information and communications technologies do not simply provide a neutral support for better execution of organizational activities. As a result, ICT creates a new set of structured and correlated phases that regulate a method for organizational procedures and processes (Kallinikos, 2005; Luhmann, 2005). On this basis ICT is followed by regulatory features that have shaped a social structure and organizational system that provide standardized and sustainable tools. Work flow and phases are described as technological functions that result in reduction of complexity of instrumental or objective relationships that are considered as an essential feature for standardized ICT. The design of the system includes relational objectivities in the same way they are included in technology scripts, and in the same way, also include the possible objectivities that do not include relational correlations. Kallinikos states that this is the fundamental characteristic of information and communications technology that is the result of combined effects of shut-down and functional simplification. These two concepts are robust analytic instruments that provide a proper understanding of what is named as the essence of information technology. Shutting-down and functional simplification are processes that form the automation of a function in the underlying technological material. Since technology is necessarily designed execution of specific functions. On the other hand, these concepts of shutting-down and simplification endeavor to describe the executive logic that is combined integrated with technology and the manner through which standardization and tasks functions allow technology to help with performance of functions. ICT relate to organizational and operational facts and disambiguate tasks through substitution in an artificial effect. Shutting-down and functional simplification are important characteristics of technology (Luhmann, 2005).

And yet, this capacity makes room for shutting-down and functional simplification that are in shapes of special information technologies and develop a new challenge for definition of information technologies that are continuously in relation with shutting-down and functional simplification logics. The concept of functional simplification is utilized simultaneous with identification and selection of a set of functions that result in specific outcomes. Functional simplification imagines operational logic. On the other hand, functional simplification is a process that analyses a task or a problem with a set of functions in need of solvation through information technology. Functional simplification is defined as a technology for description of different sections of an operation which is standardized and executed by IT. While It simplifies operation phases, it also tries to disambiguate operations in local territories and to minimize its unwanted effects (Bovens & Zouridis, 2002; Kallinikons, 2005). It selects and extracts those operations that are used for obtaining special results in social world. It also tries to reduce the complexity of this world through adoption of objective and essential chains that are needed for production of specified outcomes. Functional shutting-down seems necessary

for functional simplification. The process of creation of technology necessarily includes isolation of repetitive operations which are guaranteed to be run. Functional shutting-down is comprised of creating a safeguarding cocoon around the place or around the selected objective processes in order to prevent unwanted interventions and assuring the repeatable performance. An information technology acts the way standardized operations execute in automated shapes (Kallinikos, 2006). Automation of operations executed by It states that these operations keep an unfamiliar characteristics. Information technologies are usually responsive towards interacting with users but only in specific phases of the flow of tasks including input of data, confirmation of command and etc. this is while operations that take place between one level of interaction and other levels, are described as creators of a simple and yet effective and robust world free from ambiguities. The nature of It in not described using one of the shutting-down and or functional simplification concepts; rather it is described through both of these concepts together. In fact, it is only through considering both of these concepts that one can define information technology (Kallinikos, 2006). Advantages of e-banking could be recognized from two pointy of views including customers and financial institutes. From the point of view of customers it can be referred to saving in costs, saving in time and access to various channels for execution of banking operations. However, the former advantages are also describable from the short-term, mid-term and long term perspectives as well. Equal competition, maintaining and attracting customers are among the advantages of e-banking in short term. In terms of mid-term advantages it can be referred to integration of various channels, information management, expansion of customers, orienting customers towards proper channels with desirable characteristics and reduction of costs. Among the long term advantages also it can be referred to: Reduction of costs of data processing, providing services for customers in target markets and creating income.

The process of production of technology through functional shutting-down and simplification have wide spread consequences for organizational launches. In fact functional shutting-down and simplification result in operational separation of technical system from organizational and social acts and processing and practices that have been run through a similar system. When organizational procedures and protocols are altered into technological automation, the abstract that creates functional simplification includes procedures and protocols that have sourced from an organizational environment. In addition, technological layer is open for execution of procedures and protocols for administration of skill related characteristics and necessities and shaping role that are heavily adjusted. This includes solidification and interaction of social structures. This is while a technology can imagine functional shutting-down and simplification which have been more or less adjusted with organizational needs. These concepts are not negligible measures because every technology manifests a different configuration of functional shutting-down and simplification. Functional shutting-down and simplification are not directly relative to quantification (Kallinikos, 2009). Still, different configurations can be evaluated in the framework of their effects. This is because different configurations act with organizational needs through methods that have been more or less adjusted. In this regard, we assume that the forces that align ICT should be in the center of analyses in order to be able to have a better understanding of the concept of ICT in electronic bureaucratic strategies. Case study may be more suitable approach for investigation of a phenomenon in its natural and immediate environment. As a result, it is also a suitable and ideal instrument for having a deep understanding of political, social and technical factors that shape the progression and advances of an electronic government.

Conclusion

The present study's purpose was to make a theoretical effort regarding investigation of public services of banks. This article emphasizes on a suitable alternative solution for major approaches that elaborate on investigation of functions of ICT in the frame of economic outcomes. The concepts of functional shutting-down and simplification in relation to electronic bureaucracy represent a tool that is effective for determination and analysis of manners of provision of public services in banks. The concepts we presented in this article provide a history and or background for studying the manner of supporting bureaucratic practices by ICT towards reformation of provision of services. The effects of e-banking on organizational structure are inevitable and forces vice managers to

synchronize themselves with the dynamic changes outside the boundaries of their organization through altering their organizational structure by the use of re-engineering process. Therefore making use of information and communications technology may result in reduction of bureaucracy in public banks. This content shows that the process of alignment of functional shutting-down and simplification logics with organizational needs and systematic goals is accompanied by uncertainty in a way that it is not obliged for any effort towards shaping what is expected from a technology and or its consequences. Still, ICT system results in an open definition of correlation between public services of banks. It also amplifies and strengthens dependencies and functional relations among organizations and their employees. These new bureaucratic arrangements are supported by efficiency of ICT system. Based on the definitions provided in normal inter-organizational agreements, this system is suitable for amplification and realization of new rules since it is designed in shape of a single reference point in which customers can interact with electronic banks. This configuration is the organizational agreement on the process of organizational change towards bureaucratic form of electronic organizations.

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