

TOWARDS KEY BUSINESS PROCESS FOR E-GOVERNMENT

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Abstract: Since 1994, when started the commercial use of the Internet, several manners of doing business emerged around the world. Following this trend, governments started using new tools from the Information and Communication Technologies (ICT), giving raise to the e-government area. In this paper, recent evaluation reports about government portals from all over the world are summarized. They show that there are still much work to be done to attain a high-level of integration and quality of services. Then, a new approach is proposed to e-government initiatives, introducing the concept of Governmental Key Business Processes (G-KBP) that is based on process modeling techniques and modern public administration concepts. This proposal may be used as a guideline to the construction and maintenance of highly integrated e-government environments.

Key words: e-government, business process, public services, process modeling

1. INTRODUCTION

The emergence of Internet enabled a low cost of information sharing and dissemination, independent of the existing distance between the producer and the consumer of the information. This new environment allowed access of a growing number of citizens and customers to new kinds of businesses that has been continuously revealed. This novelty is changing the environment where corporations, governments and communities interact. The changes are, especially, in the way information is received, processed, sent and stored. In this new environment, speed, flexibility and innovation are essential.

Since the middle of the 1990s, governments from all over the world have been adopting initiatives of using the Internet potential to improve public services. The Internet, as the personal computer, became an essential tool in the day-to-day of public administration.

The main objective of those initiatives is to take into account the public opinion trends, which are the reduction of public spending and the improvement of public services [14]. Citizens tend to behave the same way as private companies customers, that is, they are continuously requiring more for less. They can (and must) realize that the adoption of new technologies can increase productivity in the public sector, as can be observed in the private sector.

Therefore, the e-government is a vision of the future as much as a reality in our daily life. It can transform and improve the quality of the managerial actions and the political activities. E-government should be used as an instrument of public administration to better serve the citizens. Governments should consider the point of view of citizens and firms – as a commitment. Thus, the central point is: how to do it without simply transfer the governmental bureaucracy to the Internet?

Motivated by the importance of this issue, we found that despite of the significant work already done in this area, there is no structured methodology to the development of an e-government environment. Using a process approach, we introduce the Key Business Process (KBP) concept and its extension to the government environment, named Government Key Business Process (G-KBP). From these concepts, it is possible to build a framework to e-government initiatives, in a way that leads to a complete integration of the delivered services. That is the goal of this work.

The paper is organized as follows. Section 2 presents the evolution of the public administration as a foundation for e-government implementation. Section 3 shows evaluation initiatives of e-government environments around the world. Section 4 presents new approaches to government and e-government areas. Section 5 describes the Business Process Engineering and its analogy to the public sector. Section 6 presents the Governmental Business Process Engineering and the benefits of its approach. The last section concludes and suggests some future work.

2. FOUNDATIONS TO E-GOVERNMENT IMPLEMENTATION

During the 20th century, successive significant advancements have occurred in the Information and Communication Technology (ICT) area, as well as in the administration science. The governmental sector has been af-

fectured by these facts. The governmental bureaucratic model – also known as Weberian – has suffered theoretic and practical contestation. The public management model – also known as managerialism – has been proposed for governmental actions all around the world [1], [3].

2.1 The Evolution of Public Administration

The pre-capitalist and pre-democratic societies did not make clear distinction between public and private property. During the so-called “Patrimonialism” age, the government was unable or reluctant in distinguishing public from private property.

As capitalism emerged, came to light the need to differentiate these two kinds of properties, producing changes in the way nations were administered. Thus, the concept of an administration that protects public interests from the nepotism and corruption associated with patrimonialism appeared, laying down the foundation for the modern “Bureaucracy”. According to Bresser-Pereira [3], this type of public administration is based on “the principles of a professional civil service and of an impersonal, formal, and rational administrative system”. Max Weber was the most important theorist that showed the advantages of bureaucracy over patrimonialism in its classical book called “Economy and Society” edited in 1922 [3]. Some authors name these ideas about public administration as “Weberian”.

However, the significant development that has occurred during the 20th century has increased the responsibilities of states, even in capitalist societies, to face new challenges. In this new scenery, some advantages of the bureaucratic administration – such as the rigid hierarchy and the formalism in the procedures – became to be perceived as obstacles in achieving the agility and the effectiveness required by the governments.

In this context, the managerial public administration emerges in the second half of the 20th century, as an answer, amongst other things, to the fiscal crisis of the state, which therefore needed to administer its resources more efficiently in order to satisfy the expectations of its citizens in regards to the services provided, and to the technological development and the globalization of the world economy. According to this set of ideas, called managerialism [3], the state should be mainly oriented by efficiency and effectiveness values when offering public services, and therefore, it should adopt a (new) management culture.

Managerialism in public administration cannot be considered as a single way of thinking and acting. At theoretical as well as at practical level, it was composed (and still it is) by an aggregation of elements that can vary according to the author and the country where it was implemented. It is interesting to mention the attempt made by Abrucio [1] to categorize managerialism. He

has studied several state reforms tries made in the 20th century last decades. This author recognizes that it is impossible to classify every occurrence, and that the three types of managerialism that have been identified, still present an overlapping of features. However, it is worthwhile to detach the following general ideas employed by managerialism:

- Administrative decentralization;
- Privatization of some activities;
- Performance evaluation of public services expenditures;
- Looking for efficiency and productivity through cost reductions;
- Focus on effectiveness of governmental actions;
- Use of management contracts to achieve prefixed goals;
- Attempts to adopt some private administration ideas, like:
 - Consider users as clients and/or consumers;
 - Establish “competition” among public organizations,
 - Total Quality Management (TQM).

This list is not a structured framework, it is only a set of ideas that can inspire good practices, and it cannot be accepted as a theory or a technique of public administration. Nevertheless, many of these ideas were used in different reforms of public sectors in many countries.

In addition, we would like to emphasize two other factors that seem to be fundamental in this way of thinking. The first one is the big influence of private sector theories and techniques, probably due to the significant success achieved by the corporations that have adopted them. The second is the increasing use of ICT to enable many of the performed changes. In our opinion, the correct understanding of these two factors will enable relevant propositions towards public sector improvements. Consequently, e-government initiatives should benefit from these ideas.

However, before discussing and proposing some new approaches, some recent studies concerning governmental portals evaluations are presented in the following Section.

3. E-GOVERNMENT INITIATIVES EVALUATIONS

The e-government topic became part of governmental agendas with big visibility, because the societies have realized the importance of using ICT within public administration. In 2002, the United Nations (UN) made a study about the initiatives and the commitment of part of its 190 members in the e-government area [14]. At the same time, in Brazil, the Industries Federation of Rio de Janeiro State (FIRJAN) developed research projects with the purpose of measuring the achievements of Brazilian states and municipalities in

this area [6], [7]. The methodologies used and some conclusions reached by these works are briefly described in the next Sections.

3.1 The UN Evaluation [14]

The aim of this study was to discover the commitment level of UN members with the e-government area, and their ability to support on-line solutions. The final measures of this research, called E-government Index, were calculated using three indicators: Web Presence, ICT Infrastructure and Human Capital of the country.

The Web Presence Measure indicates the on-line development stage of each country. The stage of development was organized in 5 levels from the emerging (the basic level) till the seamless (the most advanced), according to Table 1. For this indicator, the target governmental sectors considered were: health, education, labor and employment, social welfare, and finance.

Table 1. Stages of E-government [14]

Stage of Development	Description
Emerging	An official government online presence is established.
Enhanced	Government sites increase; information becomes more dynamic.
Interactive	Users can download forms, e-mail officials and interact through the web.
Transactional	Users can actually pay for services and other transactions online.
Seamless	Full integration of e-services across administrative boundaries.

The ICT Infrastructure Measure was calculated using six primary indicators, as for example: PCs per 100 individuals, percentage of a nation's population online and quantity of telephone lines per 100 individuals. The Human Capital has tried to measure, from the analysis of social indicators, the country's and its citizens' facilities and opportunities to use on-line government.

The result was that only 35 countries (25%) - among the 144 evaluated - presented an E-government Index above 2.00 points, which was considered a high capability in e-government area. On the other hand, 71 countries (49.3%) presented an E-government Index considered minimal or deficient. The e-government programs of these countries reflect their limited capability in infrastructure area and in human capital.

According to this evaluation, USA was considered the global leader in the e-government area, and the only country to reach an E-government Index above 3.00 points. The report concludes that this is due to several factors, such as: tradition and leadership in ICT area, high schooling level of the

population and the economic power. However, despite of these factors, it is pointed out that the USA e-government became successful only after the launching of www.firstgov.gov, the official portal of the federal government.

We can find a low quality grade in the majority of the e-government initiatives explored by the UN. It is interesting to mention that none of the initiatives described in this report has reached the highest stage of development: the seamless one. In this stage, it should occur a total integration of all the support functions for the available electronic services through the departmental and administrative boundaries.

In this UN report, Brazil was distinguished as the South America regional leader with an E-government Index of 2.24 points, thanks to the grade 4.0 acquired in the Web Presence Measure indicator. According to the report, various countries, including Brazil, are capable to overcome their infrastructure limitations to develop a complete e-government program.

3.2 FIRJAN Evaluations [6], [7]

This work addressed the e-government initiatives implemented by the Rio de Janeiro State's Municipalities and by the Brazilian States' administrations. It has considered three indicators: Website Development Stage, Extensiveness of Subjects and Technical Level.

The Website Development Stage corresponds to the quantity of on-line services available, classified by the evolution grade reached by its transactions. This evolutionary rating was classified in four levels, from the most basic – the informative level – till the most advanced – the integrative level – according to Table 2.

Table 2. Stages of E-government [6], [7]

Stage of Development	Description
Informative	Publishes information about diverse governmental departments.
Interactive	Includes information and data received from citizens.
Transactional	In addition to information exchange, values can be exchanged too.
Integrative	Convergence of all governmental services rendered in one unique portal.

The Extensiveness of Subjects was defined as the quantity of subjects found in each portal, which belong to a reference list of 25 subjects. Selecting all the relevant services that were present in at least one of the researched websites created this reference list. Finally, the Technical Level corresponds

to the usability and graphical design evaluations according to Nielsen and Tahir [10].

The outcome of this report is a consolidation of the indicators presented above. With respect to the Website Development Stage, none of the States or Municipalities was in the integrative development stage, considered the ideal in e-government applications. In the Extensiveness of Subjects criterion, where the grades were assigned regarding the set of subjects found in all sites, the evaluation was unfair by the absence of an external quality factor. The Technical Level rates stayed between 5.6 and 5.8 points with relation to 10 possible points. It can be considered a bad result taking into account that this area has been studied for a long time.

There is much work to be done to establish a solid e-government environment in Brazil. The development of an effective e-government environment seems to be complex and involves other questions that will be discussed forward in this article.

Nevertheless, how to reach this high level, named integrative or seamless for e-government applications? We believe the answer may be found using new approaches to this issue.

4. SOME NEW APPROACHES TO E-GOVERNMENT

This Section presents some new approaches to government administration, and particularly to e-government, which were considered interesting to induce new initiatives. They are: the USA Federal Government portal, Traunmüller's point of view, and the Bresser-Pereira proposal for a Brazilian State reform.

4.1 The USA Federal Government Portal

According to the UN evaluation introduced in Section 3.1, the best country's portal was the USA Federal Government. A plausible reason is that this country is the principal in generating new ideas and concepts for the business world. Something similar occurs in the e-government area.

Along with several published documents in the last years, the Osborne & Gaebler [12] book seems to be the most notable and the most popular in USA. As many other subsequent publications, this book claims for the necessity of innovation and entrepreneurship to revamp government. Moreover, Osborne & Gaebler propose that the government should work more as catalyst than operator within society.

Because of Osborne & Gaebler and many other authors’ ideas, and some local government reports, we met in [11] the implementation strategy of the USA e-government environment, consisting of three basic principles:

- Citizen-centered, not bureaucracy-centered;
- Results-oriented; and
- Market-based, actively promoting innovation.

This document identifies four user / services groups (Table 3) that should be focused when delivering governmental on-line services.

Table 3. USA Federal E-government Services [11]

E-government Service	Description
Individuals/Citizens: Government-to-Citizens (G2C)	Build one-stop points-of-service that make it easy for citizens to access high-quality government services.
Businesses: Government-to-Business (G2B)	Reduce government’s burden on businesses by eliminating redundant collection of data and better leveraging E-business technologies for communication.
Intergovernmental: Government-to-Government (G2G)	Make it easier for states and localities to meet reporting requirements and participate as full partners with the federal government in citizen services, while enabling better performance measurement, especially for grants.
Intra-governmental: Internal Efficiency and Effectiveness (IEE)	Make better use of modern technology to reduce costs and improve quality of federal government agency administration. Agencies will be able to improve effectiveness and efficiency, eliminating delays in processing and improving employee satisfaction and retention.

Table 3 presents the four high-level options at USA Federal Government portal. The services are organized in line with the user (client) type. We believe the fact that the two first types of users (individuals and firms) can be considered as “clients” of the services, it is not a coincidence, since they are taxpayers. It probably reflects the priority assigned to satisfy the client’s needs.

The other two types of users described in Table 3 may be considered “internals” for the government. The first one is oriented to other government instances, like states and municipalities, while the last one is clearly aimed to federal government employees.

4.2 Traumüller's Point of View

In Europe, it also happened a proliferation of ideas concerning government reforms and e-government. The European Community (EC) has succeeded, thanks to a considerable number of published ideas about countries integrations. The same occurred in ICT area to support this integration.

There are also many reports about local administrations accomplishments. However, the integration level reached by USA has not yet been achieved, due to administrative, cultural and financial issues. Despite of this, there are proposals to establish a general framework to arrange new initiatives. One of these suggestions is Traumüller's [13] point of view, where four perspectives are stated concerning e-government:

1. The Citizen Perspective – to offer public services to citizens, which are the taxpayers. In this perspective, the portals could be tools for delivering services. The services should take into account the citizens' and suppliers' points-of-view. The absence of the citizens' viewpoint when developing the solutions has been the biggest cause of failure. Users cannot cope with the logic of administrative thinking and they cannot be forced to understand administrative jargons.
2. The Process Perspective – to reconsider the government productive processes at all levels. This means that the external structures of the services should be adequately mapped to the internal processes. Hence, the customer perspectives have to be complemented by a restructuring of the business processes. Process reorganization in the public sector may often result in the rethinking the institutional structures of government.
3. The Cooperation Perspective – to integrate the distinct governmental institutions, and these with private and non-governmental organizations. Thus, the decision process could be accelerated without losing quality as preventing fragmentations and redundancies that may exist in these relationships between several actors.
4. The Knowledge Management Perspective – to allow the government to create, to manage and to make available in appropriate repositories, the knowledge generated and accumulated by several government institutions.

This proposal emphasizes, in the first and in the second items (and probably the most significant), an interesting progress when compared to the USA portal. Although the item 1 mentions only the citizens, when it refers to the taxpayer role, we can also include companies. However, the most interesting thing is stressing the need of processes identification - made in the second item of the proposal - clarifying the interdependence between the productive processes and the delivery of services to the citizens. This idea

seems to be very powerful in the direction of improving the performance of the governmental processes.

The last two items call attention to “internal” aspects of the administration. The Cooperation Perspective does it explicitly, while the Knowledge Management Perspective should be understood as “internal operations oriented”, since only the needful knowledge must be managed.

4.3 Bresser-Pereira Proposal for a Brazilian State Reform

The so-called “emergent” countries suffered intensely the 70’s and 80’s crisis in the 20th century. In addition to proposals made by international organisms to deal with the problems, it also came out local suggestions in many countries. Brazil was one of these countries, where Bresser-Pereira, an Economy and Administration professor, was in charge of the Ministry of the Administration and Reform of the Brazilian State.

The Bresser-Pereira’s proposals were summarized in [3]. In this report we can find out the interesting point of view that the crisis of the countries were a governance crisis, as occurred in many big private corporations at the same time. Therefore, there was a necessity to reform the state in order to “come again to be effective” and to face its (new) responsibilities.

Bresser-Pereira, a follower of the managerialism mentioned in Section 2, has formulated and has partly performed a reform of the Brazilian State, based on the next concepts concerning the major functions that should be performed by a modern state [3]:

1. Strategic core – “is where law and policies are defined and their enforcement is in the last instance assured”;
2. Exclusive activities – “are the ones that involve state power. They are the activities that directly guarantee that laws and public policies are followed and financed. The armed forces, the police, the tax collection agency - the traditional functions of the state - and also the regulatory agencies, the agencies that finance, foment and control social services and social security are part of this sector”;
3. Non-exclusive services – “are the services that the state provides, but, as they do not involve the use of the extroverse power of the state, the private and the public non-state (“non-governmental”) sectors may also provide. This sector comprises the educational, health, culture and scientific research services”; and
4. Production of goods and services sector – “is formed by the state-owned enterprises”.

One interesting aspect must be emphasized in this proposal. In spite of having a clear functional inspiration, it was built from a high level of gener-

ality regarding the state functions. So, one can deduce the “products” that should be delivered by each sector of the state to its “customers”. The existence of this proposal means a hope that the state services can be characterized, providing more objectivity in the discussions about how to increase government effectiveness and efficiency in delivering its “products”.

4.4 A Short Discussion

With the presentation of these new approaches in e-government we point out some different ways to answer one of the most significant challenges of the modern society. In our opinion, the use of ICT is mandatory when planning solutions to this question. On the other hand, the appropriate use of ICT requires a correct identification of opportunities. As they are support tools to human activities, we should understand the true nature of the government functions, in order to decide where and how to plan the use of these technologies.

An organization is characterized by the objectives and goals that were assigned to it at the moment of its creation. Therefore, the ideas about evaluation and reform of the state are so important. New objectives and goals may arise too. These are the signs we want to study in order to make new propositions.

We believe the new approaches presented have some general attributes that are shared with many existing proposals in private business, which are:

- To understand and satisfy the customer;
- To understand and characterize the deliverables (products or services);
- From the knowledge of the preceding items, create the organization structures and procedures.

An example of a new possible approach to e-government that goes after these requirements is what we call Business Process Engineering, which is outlined in the following.

5. BUSINESS PROCESS ENGINEERING

First, it is necessary to state a concept of process. Davenport in [5] defined a process as a “structured, measured set of activities designed to produce a specific output for a particular customer or market. It implies a strong emphasis on how work is done within an organization, in contrast to a product focus’s emphasis on what. A process is thus a specific ordering of work activities across time and place, with a beginning, an end, and clearly identified inputs and outputs: a structure for action”. Further, he complements: “Taking a process approach implies adopting the customer’s point of view.

Processes are the structure by which an organization does what is necessary to produce value to its customer. Consequently, an important measure of a process is customer satisfaction with the output of the process”.

This concept of process is central for the Business Process Engineering, which has originated from Business Process Reengineering (BPR) studies made by Davenport [5], Jacobson [8] and others. Nowadays, many authors and organizations work with the expression BPM – Business Process Management [2], which seems to be the successor of BPR. In our research work [9], we prefer to use the expression Business Process Engineering, which was introduced by Jacobson in his seminal book [8].

The process perspective implies a horizontal view of the business that may involve many parts of the organization. Consequently, it demands that the interfaces between functional units be either improved or eliminated, which means to de-emphasize the functional structure of the business. Thus, the process approach generates, necessarily, a conflict with the (functional units oriented) hierarchical structure of the organization. For this reason, it is even now very difficult to find a completely process-oriented organization, which is the ultimate aspiration of the Business Process Engineering.

The core tool for Business Process Engineering is business process modeling, which aims to represent the processes in a simple and formal manner at different levels of abstraction. The availability of complete process models allows a critical analysis of the existing activities to make improvements in the processes, and to decide the more adequate use of ICT in each activity.

Many organizations have revised their business processes, using modeling techniques, before developing information systems. The main results reported are an increase of the quality of products and services and in customers’ satisfaction [4].

However, business process modeling is not a completely established field. Large theoretical and practical difficulties have to be overcome. The first one: there are a huge number of available approaches and techniques. Another important one is how to choose the most suitable abstraction level of the business.

Since the early reengineering works, it is known that extraordinary and innovative benefits can only be achieved when processes are broadly identified [5], thus requiring a high level view of the business. Narrow processes, when reformed, may cause just few improvements that usually have limited impacts on the organization. In the latter case, where the abstraction level is low, we have the so-called “continuous improvement” or “total quality” approaches, leading to significant advantages in long time only.

In order to obtain a considerable amount of innovation, Davenport pointed out that leading companies have identified a few number of major (and broad) processes, which he has named “key business processes”. In-

spired by this idea, we have called the same way, the broad and complete processes that are responsible for the construction of the product or service that is delivered to the customer of an organization.

In a more precise way, we define the concept Key Business Process (KBP) of a company, as the complete set of activities that are executed to: receive the customer order, build the product and/or service, deliver the product and/or service, and receive the payment corresponding to this business [9]. That way, it is possible to ally a high abstraction level of the most important processes with a clear characterization of these processes' boundaries.

As an example of the KBP concept, let us consider a household appliance store selling a refrigerator. This KBP should comprise the entire possible steps such as: receiving customer order, product delivery, installation service, product warranty, credit line offer, and customer payment. Each instance of the KBP is an execution of a set of steps chosen by a specific customer.

We added to this KBP concept, the Jacobson's proposal that considers the information systems as a part of the business system [8]. Jacobson has proposed the extension of the "Use Case" concept to business processes. It allowed the following adaptation of the existing graphical representation of "Use Cases": the actor that previously represented the role performed by a user of the information system, in this new context represents the role of a business process customer. The role of the business process is to accomplish the result demanded by the customer. The next diagram illustrates a generic KBP [9].

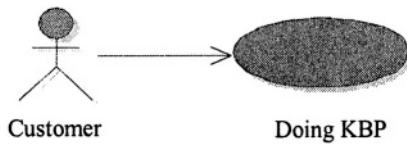


Figure 1. A Generic KBP

Obviously, even with this extensive definition, the KBPs are not the unique processes that can be identified in a firm. However, we are convinced that they are the first and foremost processes to be identified when pursuing the full advantages of any process approach.

If this idea is relevant to the private sector, how could it be used in the public sector? Which would be the possible adaptations to be done?

5.1 A Brief Discussion about the Public Sector

Government operates in a large variety of sectors. Some of its activities are similar to those of the private sector, while others are completely different. Some singular properties of public services should be emphasized when thinking about e-government:

- The government is a bigger and more complex organization than any private firm;
- Legal standards must be used in communications with society and with other governmental entities;
- It is necessary to ensure equity of access to public services.

A main difference between governmental and private businesses is that governments only deliver services. Even when delivering some product to the “customer”, it is made within some service of wider scope. An example is the provision of a medicament during the execution of a medical assistance service.

Another important difference is related to the payment of the governmental services. This payment is done by taxation and, in general, it is not the counterpart of a specific service. Therefore, the governmental services may be considered “paid in advance”, within an existing “contract” between the citizen and the state. This “contract” may be represented by the set of laws and regulations of an independent state.

It is worthwhile to stress the distinction between the penalty payments made in some governmental sub-processes and the payment for the governmental service execution, which is made by taxation. Penalties should not be considered as payment for a delivered service, but a punishment regarding a fault. In this case, the real customer of this process is not the penalty payer but the society.

Then, keeping these ideas in mind when modeling a governmental environment may ensure the design of e-government applications that are aligned with customers’ necessities, where all the services would be well characterized. The desired integrative or seamless levels, described in Sections 3.1 and 3.2 would be reached, with this approach, in a planned, gradual and objective way. The mistake of simply transposing the governmental bureaucracy to the Internet, mentioned in Section 1, would be minimized.

However, to make these ideas come true, the basis for Governmental Business Process Engineering is suggested in the following.

6. GOVERNMENTAL BUSINESS PROCESS ENGINEERING

Here the fundamental concept is the Governmental Key Business Process (G-KBP). It can be represented by the complete set of activities that government executes to: receive the customer demand, realize the service and deliver the complete service to the customer. This concept has two “simplifications” when compared to private organizations’ KBP: it does not include the payment, and the result delivered to the customer is always a service.

In governmental environment, the service represented by the G-KBP is always very large and it is realized in many stages. One can identify inside G-KBP processes, as in some private sector processes, several partial deliveries and several partial requests. Generally, a partial request corresponds to one or more partial deliveries, and conversely, one partial delivery may correspond to several partial requests. It is worthwhile to state that even the private sector has enormous difficulties to achieve good performance with such complex services.

Therefore, the critical issue on G-KBP is the appropriate description of the complete service to be delivered. It is also hard to identify the “customer” of a G-KBP. Frequently, the one who does the request of a governmental service is not the same person who receives the service. Hence, it is advisable to discriminate the two roles. We call Applicant the first, and User the latter. Therefore, the following diagram can graphically represent a generic G-KBP.

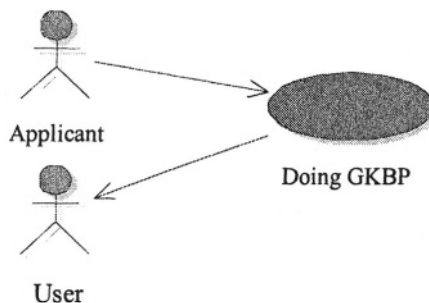


Figure 2. A Generic G-KBP

6.1 Identifying Governmental Key Business Processes

The big challenge of this approach is to identify the existing G-KBPs. In our opinion, the innovative ideas presented in Section 4 point towards enabling this approach.

We suppose that the USA leadership in the UN report presented in Section 3.1 is a consequence of its portal structure shown in Table 3. This structure seems to approximate to the G-KBP concept in practice. The Traummüller [13] proposal discussed in Section 4.2 also tends to come near to the G-KBP concept when recommending the adoption of the “Citizen Perspective” and the “Process Perspective” for e-government initiatives. Nevertheless, we believe that the Bresser-Pereira [3] proposal, presented in Section 4.3, is the most promising to truthfully concretize the G-KBP idea.

When classifying the state functions in: Strategic Core (to make laws and regulations), Exclusive Activities and Non-exclusive Services, Bresser-Pereira shows a plausible manner of organizing, from the highest level of abstraction, “all” services delivered by the states. For example, one can visualize a law as a neat outcome (product) from a G-KBP of the Strategic Core. The main client of this kind of service is the citizen. Thus, the “Making Laws” G-KBP could be graphically represented by the diagram bellow.

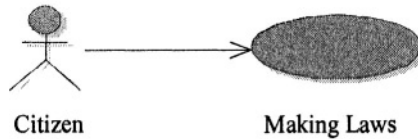


Figure 3. “Making Laws” G-KBP

Other actors could be added as clients of this G-KBP, such as syndicates, associations, and so on. We presume it is possible to do similar reasoning to identify specific G-KBPs from the Exclusive Activities and Non-exclusive Services, completing the identification of the essential services the state should offer.

We cannot minimize the immense theoretical and practical challenges that have to be surpassed to reach a G-KBP. It requires much work in multiple human knowledge areas, such as Political Science, Public Administration, Philosophy and many others. The theory and practice of Business Process Modeling also need great development to deal with the size of this area. Despite the obstacles, the introduced approach copes with the e-government matter in a very clear and objective way.

In the following are delineated some gains that can be obtained with this approach.

6.2 Some Benefits of the G-KBP Approach

6.2.1 Identification of a G-KBP and characterization of its “product”

An obvious advantage of the characterization of a G-KBP is an increase of governance, once the public administration would be able to measure the process performance and its “product” in order to improve both. The quality of the public administration will increase as long as the number of G-KBPs identified and managed increases too.

If the G-KBPs and their products are well characterized, this information may be publicized, and they can reach the potential customers of these processes. It can generate the following good consequences:

- Each “customer” could promptly identify the services that are applicable to him;
- “Customers” could struggle to improve the processes and their “products”;
- The “complete” services delivered by the G-KBPs will be much more effective than the current fragmented ones.

6.2.2 Characterization of the “customer” of a G-KBP

The immediate consequence of a right characterization of the customer of a business process is the appropriate representation of such a customer in the organization internal files. In case of a government, these files are the basic tools for the G-KBP execution, and to ensure equity in accessing its services.

After every one of potential G-KBP’s “customers” have been filed, it arises the following benefits:

- Reduction of the “customer” effort in applying to the service;
- Quality improvement in the great number of required interactions between the “customer” and the process;
- Increasing universalization of services;
- Enabling public agents to attract the “customers” of the G-KBP, which is especially important in social services;

6.2.3 Specification of the interactions between the “customer” and the G-KBP

This critical question is rarely taken into account in the business process area. It is not sufficient to identify the process, its “product”, and its “customer” to succeed using a processes approach. It is necessary to complement

this knowledge with the specification of the flow of interactions between the “customer” and the process. In the case of a G-KBP, the “customer” frequently does several requests and several partial deliveries are made until the service is completed.

These interactions involve much information, not only due to the quantity of G-KBP stages, but also due to the large amount of information exchanged. Let us take as example a simple health service fulfilled in some stages. Each step needs at least the following interactions between the “customer” and the process:

- The “customer” performs the request and sends some specific information;
- The process interacts with the “customer” to schedule the execution of the step, which in general involves the “customer” attendance and the allocation of several other process’ resources;
- The process sends the result of the step to the “customer”, and occasionally communicates the need for scheduling the next step.

As can be observed, these interactions are substantially informational. Then, there is an opportunity of intense utilization of ICT, in order to improve the processes and to reduce interactions costs. However, the appropriate use of ICT will only be achieved if all factors mentioned in this Section are considered.

7. CONCLUSIONS

We believe there is a long road to reach the G-KBPs, but we also believe it is worthwhile to try because the return can largely pay the investments.

First, we should not lose track of establishing the G-KBPs in a top-down way. As far as we can see, the Bresser-Pereira’s work [3] has shown a possible starting point. Much work and reflection from many other human knowledge areas are needed to achieve such result.

However, we do not need to wait the conclusion of these works. If we take into consideration the concepts and recommendations presented in Sections 5 and 6 concerning processes, we can begin identifying small governmental processes that deliver partial and/or fragmented services. Then, using a bottom-up approach, it will be possible to continuously aggregate these small processes, creating repeatedly other bigger processes without losing the goal of attaining the G-KBP level.

This working method may be used as a fundamental guideline to the construction and maintenance of e-government portals. It seems to be a way to reach the highest levels of governmental portals presented in Sections 3.1 and 3.2 – the integrative and the seamless - respectively.

Finally, we state that the adequate use of ICT in addition to the G-KBP - Government Key Business Process concept may be important enablers of enhancing e-government environments.

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