



# E-JUSTICE AND GOVERNANCE

Collected Studies

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***e*-Justice and Governance:  
Collected Studies**

Curitiba, Brazil  
2015

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## **Graphic design and publishing:**

Artes e Textos Editora Ltda.

This book is fully and freely available at

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Publication financed with funds from the CNJ Academic Program,  
CAPES and CNJ - National Council of Justice of Brazil

E366

E-justice and governance: collected studies / editor: Cesar Antonio Serbena. – Curitiba : UFPR, 2015.

127 p.

Inclui Bibliografia

ISBN: 9788573353105

1. Law-Tecnology 2. Governance. 3. E-justice. 4. Internet in public administration I. Universidade Federal do Paraná. Programa de Pós-graduação em Direito. II. Cesar Antonio Serbena

CDU 34

**Sistema de Bibliotecas (SiBi). Universidade Federal do Paraná (UFPR)**  
**Librarian: Paula Carina de Araújo CRB 9/1562**

ISBN 978-85-7335-310-5



9 788573 353105

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## INTRODUCTION

During the XXVI World Congress of Philosophy of Law and Social Philosophy, held at the Federal University of Minas Gerais (UFMG), Brazil, from 21 to 26 July 2013, almost two dozen researchers gathered to discuss their papers in the Workshop “E-Justice and Governance”, coordinated by Prof. Dr. Cesar Serbena (Law School of the Federal University of Paraná, Brazil), Prof. Dr. Fernando Galindo (Law School of the University of Zaragoza, Spain) and Prof. Dr. Jose Renato Gaziero Cella (Pontifical Catholic University of Paraná and Meridional Faculty of Passo Fundo-IMED, Brazil).

This book is the result of the research presentations and of the debate occurred during the workshop. All submitted papers were peer-reviewed by the Coordinators and to be published here, they were reviewed by their own authors. In order to further disseminate the papers, this book has the electronic format and can be freely distributed under the Creative Commons license. The eight articles have a common discussion on recent advances and impacts that new technologies cause on Law and Social Governance.

Fernando Galindo proposes in his article “Juridical activities and governance: how to Overcome the boundaries” that legal education needs to change in order to face the issues of governance of the current knowledge society. For him, the traditional, dogmatic and theoretical legal education no longer provides the necessary tools for professional lawyers to act in the current democracies. His article presents the characteristics of governance during the eighteenth century and their increasing complexity from the early twentieth century. The article concludes reviewing the proposals for the reform of education at Law Schools, to teach legal professionals to overcome the difficulties of the current governance of society opposed to daily legal practice.

Cesar Antonio Serbena e Maurício Dalri Timm do Valle, in their article “An overview on the computerization and evaluation of the Brazilian Judicial System”, describe the recent Brazilian experience of judicial reform with the adoption of a strong policy of judicial computerization and creation of a system of judicial statistics and judicial evaluation. They analyze the actual state of art of E-Justice and Q-Justice in Brazil, and also describe the main data collection systems of the Brazilian Judiciary, indicating some methodological remarks on publishing the public data on the web and on statistical research with judicial data, and point out the future prospects of the Brazilian E-Justice and judicial metrics toward new computing technologies.

Rafael Augusto Ferreira Zanatta and Michel Roberto Oliveira de Souza, in their article “Courts in Social Networks: setting a research agenda for socio-legal studies”, provide a preliminary analysis of the social media policies created in the Brazilian Judiciary and the experience of two Brazilian Courts (STF - Constitutional Court and STJ - Supreme Court of Justice) in the use of social networks Twitter and Facebook, and describe the role of the National Council of Justice (CNJ) in regulating the subject. Their claim is that socio-legal scholars can engage in this research area and study the effectiveness of these policies, focusing on the potential for democratization of the Judiciary.

Egon Sewald Junior, Maurício Rotta, Aires Rover and Edson Rosa Gomes da Silva, in their article “Modeling System based on Knowledge in a Court of Justice using CommonKADS” present a theoretical review of the methodology CommonKADS and its application in the Court of the Brazilian State of Amazonas, in order to identify solutions for Knowledge Management. The conclusion of their article is that the methodology proved to be applicable in the government environment, and therefore, with the large scale use of digital processing by the Courts, the conduction of proceedings electronically gained speed, and so,



the magistrates and their advisors need computational resources to support them in decision-making activities.

In another article, “E-Government and Web 2.0 in promoting citizenship: the use of the application Flickr in the supervision of Public Works in Santa Catarina”, Egon Sewald Junior, Edson Rosa Gomes da Silva and Aires Rover examine the role of e-government and Web 2.0 as factors of promoting citizenship. They used the case study as a methodology, noting the use of the application flickr on building inspection in Santa Catarina, quantitatively evaluating the number of works and the number of users as well as the quality of effective citizenship. They conclude that even for a low use of the tool, but also for the possible effect of the citizenship, the main guideline of e-government is essential to improve and develop tools to promote integration with the citizens, and for the dissemination of their use.

Dennis José Almanza Torres, in the article “Globalization and the Digital Breach: society facing the new technologies”, analyzes the digital breach, or in other words, the distinction that exists among people, communities and countries that use New Information Technologies as part of their daily life from those that do not have access to them or do not know how to use them. The main conclusion of Dennis J. A. Torres highlights the need for digital inclusion public policies, understood in the broadest possible way, so that this inclusion does not refer to simply access the Internet or some ICT's, but, by incorporating digital inclusion with important cognitive factors, so that the user can understand and master the language and content accessed.

Christienne Krassuski Fortes and Edna Torres Felício Câmara, in the article “Legal Informatics and Linguistics: some considerations about language phenomena”, demonstrate that the analysis of linguistic phenomena is necessary to understand “human-computer” interaction and, consequently, considerations about language are important to reflect about the progress, the

difficulties and the potentiality of legal informatics. The authors conclude that the understanding of communication between men and machine demands the study of the language mechanisms, and we ought to reflect about the possibility of “teaching” the computer how to think. Another conclusion of the article is that inside the confluence between computational science, law and linguistics, there is a mutual lack of knowledge that must be overcome.

Ricardo Menna Barreto, in the article “E-Citizenship: observations from the theory of Communication of Lee Thayer”, starts from the Theory of Organizational Communication, seeking to understand the communication as a process that relies on four levels of analysis, as proposed by Lee O. Thayer. He concludes that the establishment of an understanding of the relationship between communicational e-citizens and e-administration allows discovering the challenges of an effective expansion of (virtual) democratic space.

From all the papers the reader can get an overview of the state of art about the studies on the relationship between new technologies, society and Law, as well as the challenges posed by the new society based on knowledge and technological development.

I would like to thank Professors Galindo and Cella, who coordinated the workshop with me, and all the authors who answered to our call for papers and submitted their papers to be published. I also thank the members of the research groups E-Justice – Federal University of Paraná-UFPR - and LEFIS - Zaragoza University -, the UFPR Post-Graduate Program in Law, as well as Capes and the National Council of Justice-CNJ, Brazilian governmental entities that funded the publication of this book.

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# JURIDICAL ACTIVITIES AND GOVERNANCE: HOW TO OVERCOME THE BOUNDARIES

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*Fernando Galindo<sup>1</sup>*

## ABSTRACT

The paper focuses on these objectives: 1) express the characteristics of governance as a way to solve judicial activity that has been widespread in our society since the eighties, 2) present the characteristics of legal practices that can perform their duties in accordance with the proposals set out by the Philosophy of Law, which attempted to demonstrate its complexity since the early twentieth century, and 3) establish some basic proposals for the reform of legal education to be implemented by law schools with the aim of overcoming the difficulties that governance poses for everyday legal practice.

**Keywords:** Juridical activities; Governance; Learning the Law; Communicative concept of Law.

## 1) Introduction

The paper<sup>2</sup> proposes to make some changes to the juridical discourse in order to make it consistent with the context in which the juridical activities of jurists have been taking place in re-

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2 The paper is based, partially, on the activities developed in the projects: Ciudad2020, INNPRONTA Project IPT-20111006, funded by the Spanish Centre for Industrial Technological Development, and Participation in the knowledge society through the activities of the e-Government Observatory. Political, economic and empirical aspects. Project HBP2011-0029, funded by the Spanish-Brazilian ministries of education interuniversity cooperation program. The paper is also part of the activities of the research group *Data protection and electronic signature* funded by the Government of Aragon and the European Social Fund.

cent years (FERRAZ, 2009). The changes are necessary because these activities are characterized by the growing importance of the application of the rules of governance in their usual practices (GALINDO, 2013). These rules affect the work habits of legal professionals with regard to the implementation of fundamental legal activities such as the interpretation and the application of the law and, consequently, to the Science of Law which is responsible for providing the training leading to this practice, thus requiring the establishment of knowledge approaches that may be able to study the most important consequences of the implementation of governance practices in the activity of jurists<sup>3</sup>. The paper focuses on these objectives: 1) express the characteristics of governance as a way to solve judicial and administrative activity that has been widespread in our society since the eighties, 2) present the characteristics of legal practices that can perform their duties in accordance with the proposals set out by the Philosophy of Law, which attempted to demonstrate its complexity since the early twentieth century, and 3) establish some basic proposals for the reform of legal education to be implemented by law schools with the aim of overcoming the difficulties that governance poses for everyday legal practice.

## **2) Governance in the practice of justice**

Changes in judicial practice whose significance and scope are expressed in data have been occurring for many years (the second half of the eighties in Spain). It is the use of the criteria of efficiency or governance as a means to guide the practice of the Administration of Justice. I mean the use of criteria to show the status and needs of the Administration of Justice, such as: how long it takes to resolve court cases, the percentage of cases

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<sup>3</sup> See an interesting approach, pluralistic, to the general theory of law and justice in Douglas-Scott, 2013.

that are resolved over a period of time by professional judges, the number of cases the Courts of different jurisdictions deal with every year...<sup>4</sup>

The last reference to the scope of this reform is the enactment of a statutory provision which has been progressively becoming a reality: the implementation of a new judicial office due to reasons of efficiency in which the judges and their assistants and support workers, the secretary and the assistants specializing in non-legal techniques have to work in coordination while playing different roles<sup>5</sup>.

At this point I would like to emphasize that the above assumes that justice is done in a work environment in which tools are used for which the jurists who are taking part in the Administration of Justice have not received or are not receiving, at least in the early stages, suitable professional training. This is because traditional training is limited to making them become accustomed to applying and interpreting the law, which is sorted in accordance with dogmatic principles and contained in texts, usually a code, through subsumption.

The performance of law is different right now, as I said above. This statement is based on the fact that the atmosphere of governance is present in the Administration of Justice in general, and it must also be noted that at present the information required to apply the Law is stored in other media, not even on paper, whose nature is different from that provided by literal texts, and that applies to virtually all aspects of their work.

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4 They are the basic contents of the judicial statistics in Spain in the last annual report of the Spanish Judicial Power. See: CONSEJO GENERAL DEL PODER JUDICIAL, Memoria 2013, pp. 531-602, available at [http://www.poderjudicial.es/cgpj/es/Poder\\_Judicial/Consejo\\_General\\_del\\_Poder\\_Judicial/Actividad\\_del\\_CGPJ/Memorias/Memoria\\_Anual/Memoria\\_anual\\_2013](http://www.poderjudicial.es/cgpj/es/Poder_Judicial/Consejo_General_del_Poder_Judicial/Actividad_del_CGPJ/Memorias/Memoria_Anual/Memoria_anual_2013) [accessed on 25 November, 2013].

5 The Statute is: "Ley 13/2009, de 3 de noviembre, de reforma de la legislación procesal para la implantación de la nueva Oficina judicial". This Statute is available at: <http://www.boe.es/boe/dias/2009/11/04/pdfs/BOE-A-2009-17493.pdf> [Accessed on 25 November, 2013].

So if we look at legal documentation, it no longer exists on paper, it is used in digital format. That is, it is retrieved by using the general or systemic patterns by which they operate and are accessible. The same applies to collections of laws, court judgments, administrative orders or judgments of the Constitutional Court, for example. It must be remembered that this happens in the civilian regulation sphere; the trials are not included in a written summary or record but incorporated to the process as video recordings of the sessions<sup>6</sup>.

Another example is the computer systems regularly used by the Administration of Justice in Spain, by all participants therein:

- Legal documentation retrieval systems: Legislation and judgments of the Constitutional Court (BOE, the Official Gazette of Spain) and judgments (CGPJ, the general Council of the Judiciary). Private databases.
- Central Registry of Convicted Offenders and Defaulters
- Integrated Records System of the Administration of Justice
- Central Registry of Final Lesser Judgments
- Central Registry of Civil Defaulters
- Account for Deposits and Seizure by Court Order
- Seizure of Refunds from the National Tax Administration by electronic means
- Seizure of Call Accounts by electronic means
- Speedy Trial Agenda
- LEXNET – A platform for secure exchange of information between courts and other legal practitioners who need to exchange legal documents (notices, statements and claims) in their daily work.
- Trial Recording System: the Secretary does not attend any trials of a civil nature.

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6 Art. 147 of the Spanish Civil Procedural Law.

### **3) The just activity of jurists with regard to legal texts**

Within the scope mentioned, that of the activities exercised in the administration of justice, it should be noted that the principles and laws of the Rule of Law state that all procedural legal activities must be addressed to the satisfaction of the different senses, perceptions and ways of seeing justice which are present in one society.

This affects the several activities carried out by jurists, who have to cater to all types of minimally reasoned considerations about values, especially those concerning the value of justice, not only efficiency, while taking into account that consensus is a fundamental rule of Rule of Law in democratic societies.

All of the above means that natural law or positivist proposals will not work<sup>7</sup>. They do not say much as they do not pay attention to the complexity of the activities and basically take into account something related to the natural or legal foundation of legal norms, whether they are parliamentary or judicial, for example. Instead, continuing from proposals that go beyond the dichotomy, some time ago we proposed the use of a communicative concept of Law which says that Law is the same as the just activity of jurists with regard to legal texts (GALINDO, 1998).

This perspective is more satisfying/rewarding than that which looks only at the Law as the external imperative that protects and promotes the exercise of freedom to which Savigny (SAVIGNY, 1979) was referring in the late eighteenth century at a time when the Law and its application had to be consistent with the requirements of the early stages of industrial development and its achievement through the implementation of the principles of

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<sup>7</sup> A modern introductory handbook to the Philosophy of Law (MARMOR, 2012) does not use these categories as the basis on the Law today. The book speaks on these matters: nature of law, legal reasoning and interpretation, theories on particular areas of law, law as a coercive order, moral obligations to the law and rights and equality.

free market. And also with respect to more recent concepts of law such as those of Dreier (DREIER, 1980) and Alexy (ALEXY, 1992), which attempt to overcome the dichotomy between natural law and legal positivism, and which I will explain below.

The first one, formulated by Dreier in the early eighties, states that: “Law is the sum total of norms belonging to the main body of a system of norms either constituted by the state or international in character. This system should, however, in general have a social effect and a minimal ethical legitimacy, or at least be perceived as having the latter. Law is at the same time the totality of norms set forth by this constitution; but they should have a minimal social effect or the chance of having such, and also a minimal ethical legitimacy or the capacity to be perceived as having such.”

Alexy’s concept, proposed in 1992, states that: “The law is a system of norms that (1) lays a claim to correctness, (2) consists of the totality of norms that belong to a constitution by and large socially efficacious and that are not themselves unjust in the extreme, as well as the totality of norms that manifest a minimum social efficacy or prospect of social efficacy and that are not themselves unjust in the extreme, and, finally, (3) comprises the principles and other normative arguments on which the process or procedure of law application is and/or must be in order to satisfy the claim to correctness.”

The problem with these proposals is that, despite their desire to overcome the distinction between natural law and legal positivism, they are still partial regulatory proposals. Unlike the previous ones, which exclusively focus on norms in one way or another, the communicative concept pays attention to what is most important in the Law in today's complex society, its performance in specific activities, by legal practitioners respectful with the idea of justice, which is reflected especially in legal documents passed by those institutions which are responsible for pass-



ing them, as well as in other rules of practice or believes that, even though they have not been passed by Parliament, do not go against the legal texts.

This style of professional legal action or policy is consistent with the requirement that the Law must be exercised by the powers in a manner which is compatible with the implementation of the principles of the Rule of Law, which summarize the action of democracy governing the actions of public authorities by legal mandate, i.e. all matters over which they have jurisdiction as active agents in the social and political life of the knowledge society.

This is especially predicated of the application of the Law by jurists, as recognized in trials in a complex manner: by taking into account the weighting mechanism of governance, rather than the “automatic” application of subsumption from the liberal model. In addition, for the communicative concept the judicial application must be guided by the principle of consensus rather than that of weighting, understanding, however, that weighting is near consensus as it involves taking into account all the values at stake.

#### **4) Changes in teaching**

In accordance with what we have stated so far, all jurists must be trained not only in dogmatic principles but in other activities from the beginning of their university education, in a way which is consistent with what is expected for lawyers in Spain, an exemplary case for the rest of justice professionals.

In a new basic law teaching it must be taken into account, summarizing what is set forth in the Regulations<sup>8</sup> laying down

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<sup>8</sup> Ley 34/2006, de 30 de octubre, sobre el acceso a las profesiones de Abogado y Procurador de los Tribunales. Real Decreto 775/2011, de 3 de junio, por el que se aprueba el Reglamento de la Ley 34/2006, de 30 de octubre, sobre el acceso a las profesiones de Abogado y Procurador de los Tribunales.

the conditions for recognition as graduates, that the skills which they are required to have for their practice refer to the following typical activities of lawyers:

a) Legal activities per se:

- mastering abstract concepts, dogmatic principles or science of law, through which it is possible to learn about the legal system, the national and international legal framework and the various areas of professional practice,

- interpreting the Law in response to the regulation of judicial practice and the characterization of problems,

- applying the Law in a judicial and extrajudicial manner.

b) Professional management activities, complying with the ethical and administrative rules of the organization and operation of offices, businesses or companies.

c) Activities which involve exercising and using specific tools of the “knowledge society” in which we are living.

d) Communicative activities per se: aimed at the achievement and maintenance of dialogue and consensus, as well as implementing the advantages of working in interdisciplinary teams.

e) Activities aimed at implementing the principles of justice or protection of human rights in the Rule of Law as set forth in the following texts describing the powers to which reference is made in art. 10 of the Regulations which has been taken into consideration:

- “avoiding situations of damage, risk or conflict in relation to the interests entrusted or professional practice before courts or public authorities and when playing advisory roles”,

- “knowing the various techniques regarding the balance of interests...”,

- “understanding and knowing how to apply professional and ethical rights and duties...”,

- “understanding and evaluating the various responsibilities related to the exercise of the professional activity, including

the basic operation of free legal aid and the promotion of the social responsibility of lawyers”,

- “being able to identify conflicts of interest and knowing the techniques to resolve them, setting the scope of professional secrecy and confidentiality, and preserving independent judgment”,

- “developing skills and abilities in order to choose the right strategy to defend the rights of clients...”,

- “knowing how to develop skills that allow lawyers to improve the efficiency of their work and enhance the overall performance of the team or institution where it is carried out...”,

- “... using reasoned arguments to draw legal consequences, based on the context and to whom they are addressed, in accordance, when appropriate, with the scope of each procedure”, and

- “knowing how to develop interpersonal skills and abilities that facilitate the exercise of the legal profession in their relations with...”.

## 5) Conclusion

With a new, complex, basic legal training which is consistent with the core competencies required for the exercise of the legal profession, it is possible to provide jurists with adequate working tools. What exists today is no longer enough: dogmatic, theoretical, unrealistic training which is far from the practice of Law in the knowledge society. Tools which, however, will enable them to do justice by taking into account the principle of consensus, essential in a democratic society, as well as efficiency and those of governance.

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# AN OVERVIEW ON THE COMPUTERIZATION AND EVALUATION OF THE BRAZILIAN JUDICIAL SYSTEM

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*Cesar Antonio Serbena<sup>1</sup>*  
*Maurício Dalri Timm do Valle<sup>2</sup>*

## ABSTRACT

The Brazilian judicial system is actually going through a period of rapid transformation. The state courts and the superior and federal courts have computerized partially or fully their judicial procedures. It is known as the “Electronic Justice” or “E-Justice”. Concomitantly with the computerization process, it was established a data collection system and the judiciary statistical analysis, as well as an evaluation system of its performance through specific indices. This system is known as the “Quantitative Justice” or “Q-Justice”. In this study, we analyze the actual state of art of the “E-Justice” and “Q-Justice” in Brazil. I.e. describing the main systems of data collection of the Brazilian Judiciary; indicating a few methodological remarks publishing on web the public data and on statistical research with judicial data; and pointing out the future prospects of the E-Justice and judicial metrics toward new computing technologies. The main objective of this study is to describe, to an international audience, the recent Brazilian experience of judicial reform with the adoption of a strong judicial computerization policy and creation of a judicial statistics system and judicial evaluation.

**Keywords:** electronic justice; judicial metrics; data mining.

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## 1. Introduction

Near the beginning of this century, Brazil had an impact on the judiciary by the technology, mainly by computation: we are at the beginning of a transformation from the physical analog into a digital electronic process, in which is being heavily operated through the Internet. At the forefront of this process in Brazil are higher courts, especially the Supreme Court and the Superior Court, which have converted their paper procedures into electronic format. Within the judiciary system and the CNJ - National Council of Justice, there has been an implementation of policies reform, amongst the state and federal courts, so that they can follow the example of the superior courts and promote measures to reform procedures into electronic process moving towards E-Justice or Electronic Justice.

In parallel of converting the judicial process into an electronic format, there is another major judicial system reform, which started operating in Brazil. It is the implementation of a system for collection and statistical analysis of the courts. Through various legal measures, there is a process of implementing a culture of open and transparent information, so that, through the knowledge of the judiciary data, in especial its analysis through certain indices, society as a whole and public entities that deal with strategic management of the judicial system, can identify their problems and quickly plan solutions. In addition to E-Justice, there is currently a system of judicial fairness or quantitative justice, also known as Q-Justice.

The analysis of the performance of courts and tribunals in Brazil has caused some surprise when not creating a rejection feeling. Many causes can be identified for this negative impact, however, we can point out two main reasons:

1 - Lack of access to the data regarding the judicial system: in the two decades following the Constitution of 1988, there was hardly a data collection system and information relating to

the judiciary system in Brazil as a whole. There was fragmented and isolated information, but without the preparation of indexes, it was not possible to make a radiograph of the judicial system in statistical terms. From the creation of the National Council of Justice and the implementation of its policies, gradually the data relating to the judiciary began to appear publicly, causing the most varied reactions. The most famous example was the impact provoked by a number of researches called “The top 100 litigants,” in which the federal government and banks emerged as the largest plaintiffs in Brazilian courts, and continue in the same position according to the latest 2011 data report.

2 - Lack of access to modern Western Democracies evaluations and control systems: following the previous process, National Council of Justice also has established itself as a body to implement strategic policies to modernize the judiciary. In this modernization process where created agencies and internal CNJ teams, with the aim of producing knowledge and specific techniques to ensure the means to implement a new control and management policies. Consequently, we sought in judicial systems of other countries, like the United States, Mexico and the European Union, for elements and experiences that could also be implemented in Brazil. In a sense, we did not have the culture of data collection, measurement, evaluation and control of the judicial system in Brazil.

The analysis of judicial systems and their workings are not something new outside of Brazil. The United States and European Union constantly produce statistical reports analyzing their systems, as well as for evaluation.<sup>3</sup>

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3 A reader interested in more details of the reports of the European Union and the United States can refer respectively to: European Judicial Systems Edition 2010 (2008 data): Efficiency and quality of justice - European Commission for the Efficiency of Justice - CEPEJ and the report of the NCSC - National Center for State Courts. Report of the European Commission for the Justice Efficiency, 2010 and 2008 data, is available on the European Council, NCSC report is available on the official web page ([www.ncsc.org](http://www.ncsc.org)).

In this study, we are showing some basic data about the Brazilian Judicial System, describing the main data collection systems for the Brazilian Judiciary, indicate some methodological observations on the availability of public data and statistical research with judicial data, and point out the future prospects of judicial fairness with respect to new computing technologies. The main objective of this study is to describe, to an international audience, the recent Brazilian experience of judicial reform with adoption of a strong judicial computerization policy and creation of judicial statistics and judicial evaluation system. The authors do not intend to propose or formulate new theoretical concepts or techniques of legal information technologies.

## **2. Brazil: some basic judicial data and expenditures of the Brazilian judiciary<sup>4</sup>**

In 2012, the annual GDP (Gross Domestic Product) growth was 4.2%. The GDP per capita was US\$ 12,670 and the population was 196.5 million<sup>5</sup>. 2012 GDP in total was US\$ 2.2 trillion (equivalent to R\$ 4.402.537,00). The average income in 2012 per capita was 934,5 U.S. dollars (R\$ 1.869,05) per month.

The inputs and endowments of Brazilian judiciary power were 20.5 billion U.S. Dollars during 2010, which was equivalent to 1.12% of the national GDP and 2% of the expenses of the Federal Union and the States and US\$ 106 dollar (R\$ 212,37) per year per inhabitant.

### ***Humans resources***

The workforce of the Judiciary system (Federal, State and Labor Courts) consisted, at the end of 2010, of approximately

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4 For more details see Judicial Research Department at <http://www.cnj.jus.br>

5 Source: Economist Intelligence Unit – The Economist Magazine.



339,000 employees, of which 16,804 are magistrates (judges) and 321,963 are civil servants. The total number of positions comprises of officially affiliated employees (exception made to employees directly allocated from other public institutions), employees requested from other institutions, outsourced workers, interns and employees commissioned without public service official affiliation.

### ***Magistrates and workforce per hundred thousand inhabitants***

Judiciary (in the three investigated branches) has an average of 9 judges per group of one hundred thousand inhabitants. The highest *ratio* is in State Courts (6 judges per 100,000 inhabitants), and the lowest one is in Federal Courts (1 magistrate per 100,000 inhabitants).

## ***Litigation***

### **2.1. General case flow data**

During 2010, 24.2 million lawsuits were filed in the three Judiciary branches (17.7 million in State Courts, 3.2 million in Federal Courts and 3.3 million in Labor Courts), and at the end of the year there were 59.2 million pending lawsuits. Thus, Brazilian Judiciary case flow in 2010 counted 83.4 million lawsuits. 22.2 million decisions were issued, divided as following: 15.8 million in State Courts (representing 71% of the total), 2.9 million in Federal Courts and 3.5 million in Labor Courts.

### **2.2. Incoming cases per one hundred thousand inhabitants**

At the end of 2010 there were 11.536 new cases for each group of one hundred thousand inhabitants, in the three Judiciary

branches. The most demanded branch was of State Courts, with 8.641 new cases for every group of 100,000 inhabitants.

### **2.3. 1st Instance Litigations and Small claims courts**

In 1st Instance Courts approximately 20.5 million lawsuits were filed in 2010, 73% of which (in average) corresponded to pre-trial lawsuits, and the other 27% were related to enforcement-stage lawsuits. There were 55.7 million cases pending resolution at the end of 2010, representing an increase of 2% over the previous year.

### **2.4. Incoming cases per magistrate and civil servants working in the judiciary area per magistrate in 1st Instance Courts and in Small Claims Courts**

Brazilian 1st instance courts (in its three branches) received, on average, approximately 1,290 new cases for every magistrate in 2010.

### **2.5. Caseload and backlog rates in First Instance and Small Claims Courts**

Caseload is the indicator commonly utilized to measure the amount of lawsuits magistrates have to rule on, on average, every year. Each 1st Instance magistrate in the Brazilian Judiciary had an average of 5,423 lawsuits that could be ruled in 2010.

## **3. Electronic lawsuit filing**

The Justice in Numbers reports also brought data on the rates of electronic lawsuit filing, with a view to investigating the

level of computer technology adherence of the Brazilian Judiciary and the adoption of new technologies into lawsuit processing methodologies. The indicator is obtained by dividing the number of new electronic lawsuits by the number of new lawsuits, in the analyzed instances of Justice (2nd Instance, 1st Instance, Appellate Courts and Small claims courts). It was verified that Federal Courts have continued to invest in implementation of virtual lawsuits in their courts, with lawsuit virtualization indices ranging from 43% (Federal Court of the 3rd Region) to 82% (Federal Court of the 5th Region). It must be emphasized in particular that the Regional Federal Court of the 1st Region reached 64% of virtualization rate for new lawsuits in the 1st instance courts. On the other hand, also worth mentioning the low response rate for this indicator in the Labor Courts, which may be a sign of difficulties being found in the adoption of electronic lawsuits in the Labor branch.

Expenditures on human resources represented 89.6% of the total budget for the three branches of the Judiciary (State, Federal and Labor), a percentage lower than the previous year, which was 90.8%. This decrease is particularly timely, given that since 2006 spending under this heading has always been found at levels above 90%, a fact in which undermines important investments for the modernization of the courts and the improvement of its working structure.

The computerization of the judiciary in Brazil is being done through the collaborative construction of a complete electronic system of judicial proceedings, the *Electronic Judicial Process* (PJe in Portuguese). This system was developed at a federal level and is being adopted by Federal and State Courts through agreements signing. In the next chapter we will describe the main characteristics of the PJe.

## **4. The PJe (Electronic Judicial Process) and the courts computerization in Brazil**

The main and most extensive project of the judicial courts computerization in Brazil is called PJe, Electronic Judicial Process. It is a system developed by CNJ - National Council of Justice, a body created in 2005 and it has, among other functions, to establish strategic, management and planning policies for the Brazilian judiciary as a whole.

The formulation of the PJe began in 2008 under Federal Courts, and has been taken over permanently by CNJ in 2010. The purpose of this system is to provide the Brazilian Judiciary System a full system of judicial proceedings, since the entry of a case into the judicial system up to its archive, ensuring its integration with the old proceeding system. PJe is quite comprehensive and involves civil and criminal cases from all specialties of the Brazilian judiciary, the Labor Courts, Federal, State or Military Courts. The system is also multi-user, intended to be accessible to all involved in judicial proceedings, i.e.: magistrates, judiciary employees, lawyers, prosecutors and parties.

In 2010, 54 courts and tribunals were already participating in the formulation and development of the PJe. Those same courts have engaged the PJe through the signature of agreements between the involved courts and CNJ.

Until the year 2013 three versions of the system have been developed, 1.0, 1.2 and 2.0.

The PJe has several interesting features that deserve to be mentioned:

Direct assistance to the judge/lawyer: The PJe allows documents, such as petitions, to be produced internally within the system and not externally to the system. It has a built-in text editor that enables this feature. Until now, there is no electronic database of jurisprudence incorporated into the system. Currently,

each court in the Brazilian system offers access to its jurisprudential bases on its website. The PJe allows uploading of files and electronic documents and communication between parts of the process through the internet.

Administration and management: PJe electronically manages cases procedure, unifying procedural tables, so that in a previous situation, even one procedural act might have different names in various courts, in the new system there is no denomination divergence for the same acts. Within this new system, there is also an automatic replication of information process management: reports sent to the CNJ from different courts, to make the annual report “Justice in Numbers”, not being needed to fill manually. With systems integration, data collection becomes automatic. Reports also can be automatically generated within the court, for better internal management of the judiciary body. Another feature of the PJe is its flexibility, allowing administrators to adapt system and users permissions, so the judicial proceedings may be more rigid or flexible, as the desired by the system administrator configuration. Thus, Courts’ IT team does not need to be contacted, in every system change.

Administration between the court and the parties: PJe has a feature that, in addition to allowing procedural authors to write a petition into the system, also allows the models to be archived into pre-formatted documents, so that, once variables are inputted in fields, document is automatically generated.

In a broad sense, PJe intends to integrate all authors of the process: judges, judicial employees, parties, lawyers, prosecutors, administrative and supervisory body.

Together with courts computerization, CNJ have made in recent years other major reform in the judiciary, through implementation of the judicial statistics system and a performance evaluation of judicial system in the various aspects. In the next chapter we will describe the Brazilian judicial statistics system and point out some methods that should be adopted.

## 5. Actual situation of Q-Justice in Brazil

Within scope of the CNJ and the Supreme Court, main data collection systems of the Judiciary in operation are:<sup>6</sup>

- Justice in Numbers
- The Supreme Court in Numbers.

### *CNJ's Justice in Numbers system:*

The CNJ system provided statistical information on the judiciary system for the first time in 2003 and 2004, and it was initially developed from a previous system, the National Judiciary Data Bank (BNDPJ). In 2005, Statistical Judiciary System was created (SIESPJ), through Resolution n° 4, on August 16, 2005, from the office of the president of the CNJ. Resolution n° 15 of April 20, 2006 regulated and set contents and formulas of the system. Resolution n° 15 was repealed and the normative basis of the system has been established by Resolution n° 76 of May 12, 2009.

Basically, SIESPJ has the basic statistical indicators divided into the following categories:

I - Inputs, allocations and utilization levels:

- a) Revenue and expenses;
- b) Structure.

II - Litigation:

- a) Workload;
- b) Congestion rate;
- c) Possibility to appeal and retire decisions.

III – Justice Access;

IV – Demands Profile.

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6 To present the item 1 of this article, we have based the research on the CNJ study: *Studies on data collection systems*.

### *Supreme Court in Numbers project*

Getulio Vargas Foundation, through the School of Law of Rio de Janeiro and with the support of the School of Applied Mathematics, has launched recently the *Supreme Court in Numbers* project. The goal of the this project is to perform quantitative analysis on the role of the Supreme Court, based on quantitative and statistical discussions about the nature, function and impact of the actions of the Supreme Court in Brazilian society.

The project aims to work using the database of the Supreme Court, it is composed of more than 1.2 million cases - 1,132,850 in which have been already judged and 89,252 still active, almost 14 million ongoing, 240,000 lawyers, and 1 million plaintiffs and defendants and more than 370,000 decisions from 1988 to the present day.

First project report has been released, and it was made available to the public.<sup>7</sup>

The methodology of the project is composed of a more widespread qualitative analysis, conducting a quantitative analysis and performing statistics on the nature, role and impact of the actions of the Supreme Court in Brazilian democracy. Since the Brazilian High Courts judge hundreds of thousands of cases per year, an amount much higher than the courts of any other major Western democracy, the object of the project study will be the vast databases of the Brazilian courts. As these databases are not available or are often incomplete and have much redundant, incomplete or inconsistent information, the project aims to develop and deploy new computational techniques to better allow analyses.

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<sup>7</sup> The report in The High Numbers is available at <http://www.supremoemnumeros.com.br/i-relatorio-abril2011-o-multiplo-supremo/>

## 6. Some methodological bases for Q-Justice in Brazil

Through a brief examination of the status of the Q-Justice in Brazil, it is possible to conclude that statistical system of the Brazilian judiciary is in its initial steps, almost completing a decade of existence. For a Q-Justice to be effectively transparent, it is necessary that databases of the judiciary be widely publicized in order to allow researchers from various fields, such as lawyers, sociologists and political scientists, to submit mass data comparative analysis and where conclusions can be freely established.

Both, the site of CNJ and the STF – Supreme Federal Court are currently providing data in reports format, where information has been analyzed and filtered by internal team of the organ. To have a Q-Justice effectively open and democratic, some recommendations on methodology issues can be highlighted:

*a. There is a need to have transparency and free availability of data cultures.*

In recent Brazilian Law of Access to Information (Law N° 12,527 of November 18, 2011), in force since May 2012, it is being already representing a significant breakthrough in this regard. Judicial system cannot be a closed system, it should be an opened system to society, in especial for public consulting and scientific research. Indirectly, the major impediment to the realization of transparency is the technical interface. The major question, in current terms, may be well placed: how civil society can have access to the judicial system using the modern information technologies? On the other hand, how the Courts may make use of information technologies to provide civil society with their relevant information? In this sense, the next item is of high importance.



*b. Data provided by the judicial system should be standardized in an usual format database.*

Courts should disclose their information in open formats, accessible and readable by computer systems. Unfortunately, vast majority of reports are published in PDF format, which is usually a closed document and of difficult editing, as it needs to be converted to another format. It would be recommended that the report format be available in usual database extensions, such as XML, JSON or CSV. Lots of the time of the social scientists, who are focused on Courts data, is spent on manual collections of information in spreadsheets to make the research, where it should be automatically operated by a computer program.

*c. It would be advisable to standardize the format of the data supply for the entire judiciary.*

For the information to be analyzed by a computer program, any character is significantly different. In a report of a numbers format, for example, the use of comma can be quite different from the use of point. In certain cases, a report uses the same number but in different formats, such as 3,99 and 3.99. Without a human intervention, the computer has no possibility to interpret both formats as equal. The same observation for spaces and the use of uppercase and lowercase letters.

Once the mass of data is available, the advantage is to use computer programs to analyze data, allowing creation of applications to view data. It does not mean that analysis is automatic: it must takes the researcher time to select which is the relevant data for a particular analysis. Currently, Computer Science has developed automated techniques of data analysis, like Data Mining and linked Data<sup>8</sup>.

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<sup>8</sup> Between the time of writing and completing this article, the CNJ provided through Ordinance n° 216 of December 19, 2012, the entire database that underlies the report “Justice in Numbers” of the year 2009, for free consultation on the website.

## **7. Conclusion: remarks about E-Justice and Q-Justice in Brazil**

Once the data mass of the judicial system is available, it must be possible to extract qualitative information of the data, especially if you can get knowledge from correlations between them. Usually the mechanisms of data analysis used in empirical research on law in Brazil, are intuitive and based on experience and sensitivity of the researcher. However, as it is widely known, as the increase in number of disputes tends to grow exponentially in the coming years by various factors, such as increased population income and rights list expansion. Therefore, we have an increasingly number of legal cases and, at the same time, an increase of complexity of the court system. Certainly, experience and sensitivity of the researcher in legal matters is empirical and does not cease to be important, however, for the development of a more refined analysis and dealing with a massive amount of data, manual research has some limitations, and the researcher will need to use advanced computational techniques to analyze the data. In this context, Data Mining can be used in empirical legal research.

Currently, with increasing data traffic from computers to mobile phones and devices such as tablets, Data Mining is increasingly employed as a technique for automatic analysis of information and knowledge generation, as the term denotes, it is to mine the data.

CNJ in recent reports, mentioned earlier in this article, has produced knowledge generated from the judicial statistics. An important finding was the identification of the unit cost of the process in each state justice systems of the Brazilian federation. Besides these, many other data can be extracted through various techniques of data mining.

With these techniques, a new field of analysis is opened for the empirical research in the legal field. A recent example of

applications of data mining techniques can be found in the project *The Supreme Court in Numbers*.<sup>9</sup> CNJ, in the National Management Committee of the Judicial Information Technology, has an internal Business Intelligence, which uses techniques similar to Data Mining.

Another recent breakthrough in computing is the cloud computing. Electronic Judicial Process can also be developed through its adoption. Many tech analysts predict that the next generation of computers and the internet is based on the “cloud”. The term ‘cloud computing’ refers to the centralization of certain functions such as storage, memory, processing and software on central servers, which communicate with the user via the internet.

One of the major obstacles in the implementation of an Electronic Process throughout the judicial system in Brazil is the problem of interoperability. In recent years, virtually every branch of the judiciary created and deployed its own electronic process system, and great difficulty for the end users and attorneys are having to deal with numerous systems, each one with its own peculiarities, do not communicating with each other.

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9 Researchers Codeço Flavio Coelho, Renato Souza Rocha and Pablo Camargo Cerdeira developed two applications on the STF’s processes database.

In the first application, the work Talk Information Mining and Visualization of a Large Volume of Legal Texts (<http://www.euroscipy.org/talk/4182>), they have developed an animation that “shows the first test plot of the law according to the Brazilian Supreme. It lists the laws cited in more than 1.2 million decisions. When two laws are mentioned together in the same decision they form a link between them, and when each new decision in which they appear together is found this link is strengthened. With this, we can see how the Supreme Court ministers associated depicts in this space. “Graph Relationship between laws and Flavio Coelho Pablo Cerdeira, description and video available at <http://www.youtube.com/watch?v=zbHXj3ANbqE> & feature = player embedded.

The second application used a clustering technique based on several variables: “main branches are the states of the federation, first branches are the types of decisions (monocratic, presidency, full etc.), The second branches represent procedural classes (aggravations instrument, ADIs etc..) and (the circles at the end) represents the amount of decisions. Thus, it becomes possible to see which states are growing fastest in each period, and identify each type of decision in each class proceedings. This large amount of information is almost impossible to be perceived in traditional views of graphs. “Description Pablo Cerdeira at <http://www.supremoemnumeros.com.br>. The view held by Flavio C. Coelho, is available at [http://www.youtube.com/watch?v=IHnJyfNoEgg&feature=player\\_embedded](http://www.youtube.com/watch?v=IHnJyfNoEgg&feature=player_embedded).

Cloud computing may be a solution for the problem of interoperability of computerized procedures. With its adoption, there would be no incompatibility issues, for example, between different courts. Software and hardware of the personal user computer have practically become secondary; its only function becomes providing access to the Internet and the system itself. Another advantage is the software update, which can be done automatic and without any user intervention. There is also a cost reduction, as personal computers do not require individual software maintenance, the user does not necessarily need to pay a license to use the operating system.

From the point of view of the Q-Justice, advantages are numerous. A Court may be fully connected, and the data collection system may become automatic, because there will not have division among computerized procedural systems. Some researchers of the U.S. judicial system coined the term *Smart Courts* to the Courts that are using the techniques of cloud computing.<sup>10</sup> In addition to data collection being automatic, the courts may rely on applications that can provide charts and pivot tables, updated in real time, for the diagnosis and measurement of its functioning.<sup>11</sup>

Throughout this panorama, the question necessarily arises from the control of information. Today, large companies like Google and Facebook are facing proceedings in regards to the use of the personal data of its users. There is no denying that relations of power and hierarchy permeate decisions on the adoption of these new technologies and systems and how a system of an organ should (or should not) be linked to another.

The purpose of this study was, first, to expose to an international audience of researchers, from the fields of Law or Social Sciences in general, the current system of data collection and

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10 Cf. Ingo Keilitz, *Smart Courts: Performance Dashboards and Business Intelligence*.

11 An example of dynamic graphs is the system used by the state courts of Utah, the Utah Courts Performance Measures, which can be accessed at <http://www.utcourts.gov/courttools/>.

preparation of indexes of the judicial system in Brazil. Gradually, with the current system and the establishment of a historical series increasing thematic and annual reports, legal databases tend to grow and allow a more refined analysis of the functioning of the judicial system in Brazil. The current system is also in a permanent process of modernization, toward an automatic collection of data and standardization of information on procedures. In the near future, we will have legal databases with more consistent information. And finally, Data Mining and Cloud Computing may or may not be adopted in the Electronic Judicial system in Brazil, a new perspective on Q-Justice may be offered, with massive production of data, which however must always be subjected to a rigorous judgment on the feasibility of its disclosure, and consequently, on what use the actors involved in the Brazilian judicial system will do with it.

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# COURTS IN SOCIAL NETWORKS: SETTING A RESEARCH AGENDA FOR SOCIO-LEGAL STUDIES

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## ABSTRACT

This paper provides a preliminary analysis of the social media policies created in the Brazilian Judiciary and the experience of two Brazilian Courts (STF and STJ) in the use of social networks. We explain two different cases (STF on Twitter and STJ on Facebook) and describe the role of the National Council of Justice (CNJ) in regulating the subject. Our claim is that socio-legal scholars can engage in this research area and study the effectiveness of these policies, focusing on the potential to the democratization of the Judiciary.

**Keywords:** Network society, Social networks, Courts, Facebook and Twitter.

## 1. Introduction

Social networks like Facebook and Twitter are expanding in Brazil. Recently, Facebook has declared to the U.S. Securities and Exchange Commission that there are 73 million monthly active Facebook users in Brazil.<sup>3</sup> This expansion is also related

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3 The data is from March 2013. Accessed on October 27, 2013. <http://www.sec.gov/Archives/edgar/data/1326801/000132680113000011/fb-3312013x10q.htm>.

to the population's access to computers, mobile phones and the internet. According to the Brazilian Internet Steering Committee, 24.3 million households had internet access in 2012. Over the last eight years, there has been a constant growth in the proportion of Brazilian households with computers: "21 percentage points between 2008 and 2012" (CGI, 2013, p. 369). This may impact the daily lives of Brazilians in aspects such as access to information and culture, the citizenship engagement and the relationship with the government and public institutions.

The literature on "e-government" has been discussing such themes for more than a decade (HOWARD, 2001; LAYNE; LEE, 2001). They envision new forms of citizenship and governance through technology.<sup>4</sup> In Brazil, some political scientists and management scholars are engaged in such field (FERRER; FLORÊNCIA, 2004; DINIZ *et al.*, 2009). Some of them are interested in the impacts on the Judiciary and the organizational structure of the Courts (ANDRADE, 2009; ANDRADE; JOIA, 2012).

We do not intent to review all the literature about the impact of technology on society. We focus on the Judiciary to advance the argument that the Brazilian "High Courts"<sup>5</sup> took the lead in the use of social networks in order to improve the ability to interact with the public and stimulate new forms of communication with the Judiciary. The presence of the Brazilian judiciary in social networks is an unprecedented phenomenon. A lot of Brazilian courts have Facebook, Twitter and YouTube accounts. Events like the "National Judiciary Communication Meeting" (February 2013, Brasília) show that the National Council of Justice (CNJ) wants to harmonize and improve the use of social networks.

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4 Government can use social networks to achieve its goals, promoting government information and other services that bring people together around agency work and information. "Social networks expand the government's outreach capabilities and improve our ability to interact with and serve the public" (U.S. GOVERNMENT, 2013).

5 Brazilian "High Courts" are the *Superior Tribunal de Justiça* (Court of Appeals, inspired by the European model) and the *Supremo Tribunal Federal* (Constitutional Court, inspired by the American model).



This study provides a preliminary analysis of the use of social networks by two Brazilian Courts (STJ and STF).<sup>6</sup> We adopt an interdisciplinary perspective examining particularly two points: (i) the regulatory arrangements related to internal use of social media as vehicles of communication from the “courts press offices” and (ii) the potential of deepening the democratic experience from the virtual approach between courts and citizens through social networks like Twitter and Facebook.

As doing so, our goal is to initiate a discussion about the following questions: Can the use of social networks by the Judiciary strengthen citizenship in Brazil? Can we use such social networks to “share knowledge” about rights and legal institutions?

## **2. Communications challenges and innovations in the Judiciary**

### ***2.1. Social networks and institutions***

Structurally, social network sites can be defined as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” (BOYD; ELLISON, 2007). Functionally, they allow new forms of interaction between individuals and organizations.

Over the past decade, social media platforms have penetrated deeply into the mechanics of everyday life, affecting people's informal interactions, as well as institutional structures and professional routines. We could look at them as the latest inno-

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<sup>6</sup> For a theoretical review, see Vasconcelos & Brandão (2013).

vation in computer-mediated communication that poses serious challenges to existing institutions, such as mass media and government authorities. Indeed, the fast growth of online platforms forces everyone to adapt to a new reality, where the mass distribution of information, news, and entertainment seems no longer the privilege of the few. Fast-growing networks like Facebook and Twitter<sup>7</sup> with millions of active users are rapidly penetrating public communication, affecting the operational and institutional power balance of media systems (CASTELLS, 2007).

The new technologies of communication and information, such as the social networks, have a large potential to transform the judicial system. This transformation can be analyzed in some areas, for instance on the justice administration and management, the revolution of legal profession and democratization of access to justice (SANTOS, 2005). This may be an emerging topic for socio-legal studies. Roberto Fragale Filho (2010) wrote about the “TV Justiça” and the YouTube channel of the Brazilian Supreme Court (STF).<sup>8</sup> There is little doubt that the Judiciary will be modified in order to adapt to this new scenario of a “network society”. But what about the Courts in social networks? Is it something new? Should legal scholars pay attention to it?

## ***2.2. Innovations around the world: a global debate about Courts and social networks***

There are many Supreme Courts around the world that are in social networks. We can see information about some of the top courts that have joined Twitter in the table below:

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<sup>7</sup> On the debate about social capital on Twitter, see Recuero & Zago (2012). For a discussion about “social movements” and “social networks”, see Harlow (2012).

<sup>8</sup> Some legal scholars in Brazil do not think that “TV Justiça” has benefits only. They also see negative sides. See Silva & Hübner Mendes (2009).

Country	Court	@ccount	Followers	Tweets	Verified account
Brazil	<i>Supremo Tribunal Federal</i>	<a href="#">@STF_oficial</a>	405,021	7,682	Yes
Brazil	<i>Superior Tribunal de Justiça</i>	<a href="#">@STJnoticias</a>	151,267	18,237	Yes
Colombia	Constitutional Court of Colombia	<a href="#">@CConstitucional</a>	113,046	3,415	No (but it is an official account)
Ecuador	<i>Corte Nacional de Justicia</i>	<a href="#">@CorteNacional</a>	15,723	1,426	No (but it is an official account)
Europe	European Court of Human Rights	<a href="#">@ECHR_Press</a>	3,019	540	No (but it is an official account)
France	<i>Conseil Constitutionnel</i>	<a href="#">@conseil_constit</a>	20,541	1,050	No (but it is an official account)
Indonesia	Supreme Court ( <i>Mahkamah Agung</i> )	<a href="#">@MahkamahAgung</a>	5,607	76	No (but it is an official account)
Mexico	Supreme Court of Mexico	<a href="#">@SCJN</a>	138,428	4,583	Yes
Peru	Constitutional Court of Peru	<a href="#">@TC_Peru</a>	13,723	497	No (but it is an official account)
República Dominicana	<i>Suprema Corte de Justicia</i>	<a href="#">@poderjudicialrd</a>	10,283	2,149	No (but it is an official account)
United Kingdom	UK Supreme Court	<a href="#">@UKSupremeCourt</a>	62,185	492	Yes
US	Supreme Court	<a href="#">@USSupremeCourt</a>	57,452	1,740	No
Venezuela	<i>Tribunal Supremo de Justicia de Venezuela</i>	<a href="#">@noticiastsj</a>	40,423	2,408	No (but it is an official account)

**Table 1:** Twitters accounts 10/28/2013

In the same way, the [Brazilian Superior Court of Justice](#), the [Constitutional Court of Argentina](#)<sup>9</sup>, the [Constitutional Court of Colombia](#) and the [Constitutional Court of Peru](#) have Facebook accounts. Also the Supreme People's Court of the Republic of China has an official Weibo account, a social network similar to Twitter and very accessed in China.

These examples may show that the top Courts developed a kind of “social media policy”<sup>10</sup>. The use of “social networks”

9 The Facebook account is a part of a project named “open government”. See more at <http://www.cij.gov.ar/gobiernoabierto/>.

10 “Developing a social media policy can be an important first step for those government agencies considering using social media and can ultimately serve as a key enabler for responsibly and effectively leveraging social media tools. Yet, many governments are struggling with what such a policy should encompass and convey” (HRDINOVA *et al.*, 2010, p. 2).

by public institutions is progressively becoming a global trend. Based on this information, it is possible to argue that the problems and the innovations of a Court in social networks are faced by a growing number of countries. In other words, there should be a global debate about “Courts and social networks”. The question that merges is: how should these Courts deal with social networks? Is it necessary to have any type of regulation about what and how the Court has to communicate in these kinds of networks? Is this debate occurring in Brazil?

An example of “social network regulation” in the Judiciary can be found in the Twitter policy for The UK Supreme Court<sup>11</sup>, edited in February 2012. In this document the UK Supreme Court regulates this “social media policy”, including issues about the content, “replies” (what should the conditions for replies be?) and “direct messages” (should the Court send direct messages to citizens?), “following” (“who” should the Court “follow”?) and “availability”. The “twitter policy” affirms that the content of the twitter account is managed by the Court’s communication team and that are expected 2-3 tweets per week covering case judgments and corporate announcements of the Supreme Court. It is expressly said that the “Court’s communications team is bound by the Civil Service Code, and cannot engage on issues of party politics”.<sup>12</sup>

Finally, the question that merges is how the Courts can “deepen” the access to justice, by the democratization of their interpretation of the law, transparency and how they can facilitate the access of the citizen to the information about the law.

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<sup>11</sup> Available at <http://www.supremecourt.gov.uk/twitter-policy.html>. Accessed on October 28, 2013.

<sup>12</sup> For the UK debate about “limits of expression” on Twitter and Facebook, see McGoldrick (2013).

### **3. Social Media and Judiciary: The role of the National Council of Justice in courts communication regulation**

The National Council of Justice (CNJ) was created in 2004 by the constitutional amendment number 45. CNJ is the entity that watches and supervises the Brazilian judiciary, responsible for the creation of public policies to be enforced by courts across the country.<sup>13</sup>

In 2009 CNJ established the objectives and strategies for the communication of the Brazilian Judiciary (Resolution 85, 2009 - Chief Justice Gilmar Mendes). This Resolution sets the following goals: (i) to provide vast knowledge to society about the public policies and the programs of the Judiciary; (ii) to inform, systematically and through clear language, the rights of the citizens and the services provided by the Judiciary in all its instances; (iii) to spread correct information about the issues that may concern different parts of the society and that involve the actions of the Judiciary. In this sense, it is important to recognize that there is already a “communication policy” for the Brazilian Judiciary. We should worry about the effectiveness of this policy.

The CNJ also uses the social networks. The Facebook profile was created in November 2010, while the Twitter profile was created in April 2012. Just like in the case of the UK, the Brazilian Courts also have specialized “communication teams”<sup>14</sup>. Considering the role of the CNJ as a “policy maker” of the whole Judiciary, the institution has recently published an “official guide” for social networks, called “Manual to Social Networks – Twitter

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<sup>13</sup> On the role of the National Council of Justice and the development of an “alternative dispute resolution policy”, see Souza & Zanatta (2012).

<sup>14</sup> The National Council of Justice provides a list of “communication teams” of all major Courts. Accessed on November 3, 2013. <http://www.cnj.jus.br/assessorias-de-comunicacao-do-judiciario>.

and Facebook”<sup>15</sup>. In this publication CNJ presents the importance of these social medias, as well as their historical development and the general rules that the courts must follow in social networks.

Besides that, the “guide” presents some “tips” on how to publish on social networks, such as the engagement required by the Courts, the volume of information and the ideal regularity to publish. It also has information on “the best time to publish” and how to schedule a publication on a social network.

Both the Resolution 85, 2009 and the “Manual to Social Networks” show that the entity responsible for developing public policies to the Brazilian judiciary recommends and encourages the use of social media by the courts.

This may be an interesting research topic for socio-legal studies. The Brazilian scholarship on sociology of law has a long tradition in the analysis of the “effectiveness of norms” and the “law in action” (CAMPILONGO; FARIA, 1984). Considering that the norm exists (Resolution 85/2009), socio-legal scholars could study its impact on society and how the norm modifies behaviors and institutions. The cases below provide a preliminary analysis of the impact of this legal policy in Brazil.

## **4. Courts in Social Networks: two Brazilian cases**

### ***4.1. Supreme Federal Court on Twitter***

The STF Twitter account was created in 2009 and it is administrated by the “Social Communication Office”. It has a clear and easy to understand language. Its design is in accordance with the institution’s visual identity.

The main feature of the STF account is its real-time coverage of the Court plenary sessions. Just as an example, according

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<sup>15</sup> The whole manual is entirely available on internet for citizens and public servants. Accessed on October 21, 2013. [http://www.cnj.jus.br/images/eventos/encontro\\_nacional\\_de\\_comunicacao\\_do\\_poder\\_judiciario/apresentacoes/MANUAL.pdf](http://www.cnj.jus.br/images/eventos/encontro_nacional_de_comunicacao_do_poder_judiciario/apresentacoes/MANUAL.pdf).

to the STF news, a study made by the Center for Technology and Society at FGV Rio Law (CTS/FGV DIREITO RIO) has shown that STF has the most active account in Twitter compared with other constitutional courts (BELCHIOR COSTA, 2013).<sup>16</sup>

As an example, just on the first judgment day of the appeal from the “Mensalão Case” (Criminal Prosecution 470), the number of followers and discussions about it increased in Twitter. @STF\_oficial (the official profile of the Brazilian Supreme Court) was mentioned 1,541 times and gained 305 new followers. On the second judgment day, there were 1,369 entries and 377 new followers (*Idem, ibidem*). Despite of not representing faithfully the impact of publications from the STF’s press office in civil society, Twitter can serve as a “thermometer” for controversial issues.

Besides this real-time activity, the STF account has no interaction with the citizen. It means that the STF account does not respond, re-tweet or dialogue with other Twitter user. Its content is purely informative.

Another case that was relevant was the “Sarney Case”, involving the President of the Senate and former President of the Republic, José Sarney. In February 2011, the following “joke” was posted in the STF account: “I have heard: now that Ronaldo has retired, when will Sarney decide to retire?”. This caused a small institutional crisis and the Supreme Court officially apologized for the case. The STF stated that the comment was posted by an outsourced employee. As response, Sarney published a video in his blog, thanking for the comparison to the extraordinary soccer player<sup>17</sup>. This is a case that shows how the lack of regulation matters.

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<sup>16</sup> Available also at <http://stf.jus.br/portal/cms/verNoticiaDetalhe.asp?idConteudo=247706>. Accessed on 31 October, 2013.

<sup>17</sup> Available at <http://www.youtube.com/watch?v=7PtXCgCiCwg>. Accessed on 31 October, 2013.

#### 4.2. “Legal memes” on Facebook: STJ’s major innovation

The second relevant case in Brazil involving social networks is the case of the *Superior Tribunal de Justiça* (STJ) and the creation of a new form of communication about the Court’s decisions. In December 2012, the newspaper *Folha de São Paulo* published an article about the “legal memes” developed by the STJ Communication Sector<sup>18</sup>. According to the newspaper, the legal memes are a mixture of humorous images with short texts about the Court’s decisions. These memes are “liked” (Facebook users can click the “like” button when visualizing the meme) and shared by the STJ’s followers in the social network.<sup>19</sup>

The newspaper report shows that there were two different reactions to “legal memes”. Some people were against humor and the way the Court communicates, indicating that STJ does not need a joke to communicate its decisions. On the other hand, there were people who celebrated the use of social networks and the use of legal memes. It seems that there is clash between a “conservative” and an “open” posture concerning the legal memes.

We believe that legal memes can be seen as a new form of communication between the Court and the citizens. It is designed to draw the attention of the reader. Sometimes, the legal memes mix pop culture with dense legal themes. Sometimes, the legal memes simply present the decision of the Court in a more friendly way.

The legal memes can be seen as an “institutional experimentalism” that is connected to a national public policy (Resolution 85, 2009, CNJ). It is “experimentalist” in the sense that it is a policy that has never been used before by any other country. It is “institutional” in the sense that it is developed by the STJ in the institutional framework created by the CNJ.

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<sup>18</sup> Available at <http://www1.folha.uol.com.br/poder/1205901-stj-usa-chaves-e-smurfs-para-divulgar-decisoes-na-internet.shtml>. Accessed on 27 October, 2013.

<sup>19</sup> Recuero (2007) wrote about the impacts of “memes” on the internet in Brazil and developed a “taxonomy” for it.



It is possible to describe some main features of this institutional experimentalism. According to the professionals responsible for the communication sector of the Court, the legal meme must have: (i) a short description of the Court's decision, (ii) the reference to the decision, (iii) a related picture with authorized usage (usually from Flickr<sup>20</sup>), and (iv) the logo of the “STJnoticias”, as we can see in the examples below:



Figure 1: STJ's “memes”

In a preliminary view, we can understand that STJ's decisions, usually read only by small legal elite, are widely spread through the social network (the Facebook page is linked to 240,000 citizens in Brazil)<sup>21</sup>. This configures a certain type of democratization of knowledge. Many people get to know STJ for the first time through the legal memes. For example, if a Facebook friend of the STJ clicks on the “like” button, then the legal meme will appear on the “wall” (main page) of the friends of the “courts’ friend” (the content is spread in a network effect).

20 <http://www.flickr.com/>

21 This data is valid for November 2013.

### ***4.3. Preliminary remarks and the research agenda***

Courts are seen as formal institutions. With this assumption and this new scenario of technology and communication, we can formulate the following hypothesis that needs to be tested: the legal memes defines a new language (more accessible, sometimes based on humor)<sup>22</sup> and may gradually modify the Brazilians' perception about the Judiciary. These innovations can deepen the "democratization of justice" (LIMA LOPES; FARIA, 1987), because people can have access to the Courts decisions in a friendly and easier way to understand.

This is something new that the literature about the "sociology of the courts" and "judiciary policies" (SANTOS, 2005) has pointed as a necessity, that the Courts have to develop their own ways to communicate with people, exploring the social network democratic potential. Indeed, we need to develop tools to empirically observe the impacts of this "social media policy". It is too early to talk about "real democratization" based on these small efforts and the evidences we have seen. But this may lead to an interdisciplinary research agenda about the effectiveness of this policy and its potential to transform the Brazilian democracy. It is also a good opportunity for a global debate, comparing different experiences and research methods.

## **5. Conclusion**

We can summarize our findings in five statements. 1. Brazil is following a global tendency to create "social media policies"; 2. CNJ developed a communication policy (Resolution 85/2009) and is trying to regulate the use of social networks by the courts through guides and forums; 3. STJ did something new and created "legal memes" to inform the population about its decisions and

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<sup>22</sup> "Humour is the language par excellence of the internet" (Lemos, 2011).

has gained popularity; 4. All these innovations may strengthen citizenship in Brazil, but can also pose many questions about its limits and regulation; 5. This may be an emerging research field for socio-legal studies in Brazil and throughout the world.

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# MODELING SYSTEM BASED ON KNOWLEDGE IN A COURT OF JUSTICE USING *CommonKADS*

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## ABSTRACT

The task of maintaining the rule of law exercised by the judiciary, guarding the constitution and its laws, judging conflicts of interest and maintaining the social order must be provided to meet the citizens and businesses properly. One of the main points to be considered is the fight against the slowness of the judiciary, in other words, that the processes have reasonable speed. In turn, the Knowledge Engineering emerged from the Artificial Intelligence, in order to contextualize their applications and facilitate reuse. The *CommonKADS* methodology is presented to model tooling in a structured knowledge of the organization, in order to provide, through their models, conceptualize the organization, assess the needs, define possible solutions, structuring knowledge and define their viability. This article presents a theoretical review of the methodology *CommonKADS* and its application in the Court of the State of Amazonas, in order to identify solutions for Knowledge Management. From the application of the methodology, difficulties

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were encountered in retrieving documents for the decision process in decision making or delivery of acts such as sentencing, as well as the justification of decisions, knowledge intensive task. The methodology proved to be applicable in the government environment.

**Keywords:** Knowledge Engineering; *CommonKADS*; Electronic-Government; Sentencing; Decision making.

## 1. Introduction

The government administrates, currently looking for the competitive environment, and can observe tools used by companies to increase agility, and thus better serve their customers. An example is the management of knowledge, which has also been applied in the government environment.

Knowledge management, in turn, within the context of the government in any of the powers, artifacts may need to explain and maintain this product - knowledge - within the company alive and open to new uses. Such artifacts and tools are developed by the Knowledge Engineering.

The Knowledge Engineering was born from artificial intelligence, with the objective of developing systems to perform tasks with intensive use of knowledge, applied in the context of the organization. The methodology for developing intelligent systems was showing problems with respect to reusing and especially with respect to the context, creating robust applications and expensive to solve minor problems.

In order to solve – perhaps not yet – the problem of reusing and contextual insertion, the methodology *CommonKADS* provides a conceptual representation of structured knowledge.

This work aims at presenting a case study of application of the methodology *CommonKADS* to model a system of knowledge, in this context the Court of Justice of the state of Amazonas (CJ-AM), to identify problems and knowledge management tools that can solve the main identified problems.



## 2. The Knowledge and Judiciary Power

The current Constitution, promulgated on October 5, 1988, says in its art. 2 that "the Legislative, the Executive and the Judiciary are Powers of the Union, independent and harmonious among themselves." In Title IV, which deals with the organization of powers, designing a chapter to each Power, chapter III refers to the Judiciary Power.

Brazil is a federative republic. It constitutes a democratic state and is founded on the sovereignty, citizenship, dignity of human beings, the social values of labor and free initiative, and political pluralism. All power emanates from the people, who exercise it through elected representatives or directly under the Constitution (art. 1 and sole paragraph)

According to Ribeiro (2000, p.293), constitute the fundamental objectives of the Federative Republic of Brazil: build a free, just and solidary society; ensure national development, eradicate poverty and marginalization, reduce social and regional inequalities, and promote good for all without distinction as to origin, race, sex, color, age and any form of discrimination. The Judiciary has therefore key role in ensuring these goals.

Also according to Ribeiro (2000, p.294), in relation to the positioning of the judiciary as a political power of the state, which is expected in Brazil, is the maintenance of the same rules and principles that exist today, that equal or even surpass in achievements those already obtained by other important democratic laws. The problem lies in putting these principles into practice in order to make the exercise of judicial functions more efficient and less time consuming, taking into account that the judiciary serves high public importance, namely, that of distributing justice.

The effectiveness, understood as a principle to be followed by the judiciary, translates as the impact brought by the result obtained by its decisions. Differs effectiveness, as this only indicates whether the goal was reached, as one cares to point out

if there was an improvement in service delivery, being translated by the impact of the action taken. Effectiveness is the sum of the efficiency and effectiveness over time (ARAÚJO, 2004, p.1, *apud* SILVA, 2005).

In this context, for maintaining the rule of law, it is important to increase the speed of the procedure and the proper adjudication.

In this context, the speed increase of the process is observed as important for maintaining the rule of law. The crashes of decisions within the judicial can be considered "bottlenecks" to growth. The methodology *CommonKADS* therefore, aims to identify in the context of the organization (CJ/AM), knowledge assets, the actors involved and how this knowledge is applied and the communication happens.

### **3. *CommonKADS* methodology**

*CommonKADS* is a methodology that provides a conceptual representation and the construction of a structured modeling of knowledge inherent in a scenario in which particular agents are identified and tasks are performed by them, and especially those that are knowledge-intensive, and a whole organizational context in which justifies the proposal of a structured modeling and use of this knowledge. Although we experience an era that emphasizes the use of information and communication technologies, knowledge is not always available in media or computerized processes explicit in a form, but the form of experiences, there tacitly in the agents who benefit this knowledge to perform tasks, analytical and often complex.

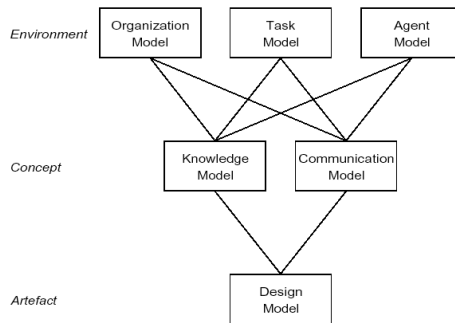
According Schreiber et al (2002), the construction of models depends on the key answer to three questions, as follows:

- "Why?" Why is a knowledge system a solution? To solve which problem? What are the benefits, costs and organizational impacts?

- "What?" What is the nature and structure of knowledge involved? What is the nature and structure of the relevant communication?

- "How?" How to be developed in a computer system? How to describe the structure of the system?

Answering these questions, the method defines a framework of models to represent the context, the knowledge modeling and jointly describe specific aspects of each model. Figure 1 shows models of CommonKADS.



**Figure 1:** Models of CommonKADS Methodology

SOURCE: adapted from Schreiber et al., 2002

## 4. Case Study - Application of CommonKADS Methodology

The CommonKADS methodology was therefore applied at the Court of Justice of Amazonas, below.

### 4.1. Organizational Model

Schreiber *et al.* (2002) describes the Model of Organization as the model that supports the analysis of the major characteristics of the organization, identifying problems and opportuni-

ties for knowledge systems and establishing their viability and impact on the organization.

Table 1 (worksheet OM-1), presents the mission, vision, values and external factors of the organization.

**Table 1:** OM-1 Source: Collection of the author

Organization Model - OM - 1
Problems and Opportunities
<p><b>Problems</b></p> <ol style="list-style-type: none"> <li>1. Inexistence of strategic planning or strategic planning is not performed in the years after its preparation;</li> <li>2. Increase in the search for adjudication, by the population;</li> <li>3. Judicial amount of increase, whereas the number of prosecutions is considerably larger than the judged;</li> <li>4. Judiciary without rigging sufficient to meet the current and future demand (personnel structure and insufficient physical structure);</li> <li>5. Poor or no integration between the systems of the judiciary and other institutions operating in the scenario of Justice - Prosecutor, Public Defender, Law Offices, Courts, Post Offices, among others;</li> <li>6. Processing of paper-based processes very time consuming;</li> <li>7. Sentencing process uses tacit and explicit unstructured information (law, jurisprudence, doctrines), which are not stored in a structured way, preventing reuse;</li> <li>8. Large number of physical processes;</li> <li>9. Demands in pleadings are based on explicit information, but are not structured;</li> <li>10. Large number of statutes, which greatly increases the complexity of cases to be processed;</li> <li>11. Archaic organizational model to meet the new demands of society;</li> <li>12. Alternation of magistrates and clerks of justice in the same court process, resulting in rework by the operators of the law;</li> <li>13. Judges, lawyers, prosecutors, public defenders and prosecutors have the provision of insufficient search engines to filter the result of research in large databases of documents;</li> <li>14. Decisions made by the judges are not always available in computerized systems or structured way. Their access may be manual or textual;</li> </ol> <p><b>Opportunities</b></p> <ol style="list-style-type: none"> <li>15. Technological development and availability of algorithms for semantic search;</li> <li>16. New generation of court over the use of sensitized systems, computers and new technologies;</li> <li>17. Possibility of structuring textual information relating to decisions, orders, rulings and judgments;</li> <li>18. Possibility to extend the corporate management of courts, providing computing resources to support the decision of the judges within the judiciary;</li> <li>19. Electronic process eliminates the dead time of the process (physical assembly process, page numbering, physical procedures between geographical points etc.), but does not change the time of the act of uttering sentences by the magistrate;</li> <li>20. Electronic processes present less cycle average time than physical processes;</li> </ol>
Organizational Context
<p><b>Business:</b> Court of Justice of Amazonas At this point, it was observed that there is a strategic planning document, the Court of Justice of the State of Amazonas, whose goal is to uphold the rule of law.</p> <p><b>Mission:</b> Perform Justice</p> <p><b>Future Vision Until 2014:</b> To be recognized by society as an effective instrument of Justice, Equality and Social Peace</p> <p><b>Values:</b></p> <ul style="list-style-type: none"> <li>• Celerity</li> <li>• Modernity</li> <li>• Accessibility</li> <li>• Transparency</li> <li>• Social and Environmental Responsibility</li> <li>• Impartiality</li> <li>• Ethics</li> <li>• Probity</li> </ul> <p><b>External Factors:</b> Indicators of performance, reliability and customer satisfaction in the Judiciary Power established by the National Council of Justice.</p>

Solutions
<ul style="list-style-type: none"> <li>• Electronic Procedural motion</li> <li>• System to support the decision (recommend) sentencing and assist in the search of the grounds</li> <li>• Interoperability between systems of the judiciary and other justice operators</li> <li>• Consolidation of strategic planning, aligned with the determinations of NCJ</li> <li>• System of indicators for measuring the achievement of goals</li> </ul>

Table 2 (worksheet OM-2) describes the features affected in the implementation.

**Table 2:** OM-2 Source: Authors' Collection

Organization Model	Worksheet of Variant Aspects OM - 2
Structure	<p>The Governing Bodies of the Court of Justice of the State of Amazonas are:</p> <ul style="list-style-type: none"> <li>• PRESIDENCY <ul style="list-style-type: none"> <li>◦ Appeals Judge ARI JORGE MOUTINHO COAST (President)</li> </ul> </li> <li>• AUXILIARY JUDGES <ul style="list-style-type: none"> <li>◦ Judge of Law - Dr. Divaldo Martins da Costa</li> <li>◦ Judge of Law - Dr. Adalberto Carim Antonio</li> <li>◦ Judge of Law - Dr. Nelia walks Jorge</li> </ul> </li> <li>• VICE-PRESIDENCY <ul style="list-style-type: none"> <li>◦ Appeals Judge WILSON LUIZ BARROSO (Vice-President)</li> </ul> </li> <li>• AUXILIARY JUDGES <ul style="list-style-type: none"> <li>◦ Judge of Law – Dr. Mirza Telma de Oliveira Cunha</li> <li>◦ Judge of Law – Dr. Ida Maria Costa de Andrade</li> </ul> </li> <li>• CORREGEDORIA GERAL DE JUSTIÇA <ul style="list-style-type: none"> <li>◦ Appeals Judge YEDO SIMÕES DE OLIVEIRA (General Corregidor of Justice)</li> </ul> </li> <li>• JUÍZES CORREGEDORES AUXILIARES <ul style="list-style-type: none"> <li>◦ Judge of Law - Dr. Ernesto Anselmo Queiroz Chixaro</li> <li>◦ Judge of Law - Dr. Luiza Cristina Nascimento da Costa Marques</li> <li>◦ Judge of Law - Dr. Roberto Hermidas de Aragão Filho</li> </ul> </li> </ul> <p>The Judgmental Bodies are:</p> <ul style="list-style-type: none"> <li>• Full Court</li> <li>• Chambers gathered</li> <li>• Isolated Civil Chambers</li> <li>• Isolated Criminal Chambers</li> <li>• Judicial Council</li> </ul>
Process	<p>In the search for jurisdictional provision, the law operators should head to the buildings of the Judiciary Power - or the institution service portal, available on the Internet - to make the filing of their orders (which can be of various kinds), make consultations, have access to the case file, make the payment of fees, request documents, and their responsible sectors should give the referral. Once filed, the process would be driven by its component parts, until the end of the litigation (lawsuit). During the life cycle of the process, the magistrate should issue orders and decisions - terminative done or not - which would be completed using registries that support the work of the magistrate.</p>
People	<ul style="list-style-type: none"> <li>• Magistrates</li> <li>• Cartorary</li> <li>• Operators of law (lawyers, prosecutors, defenders and promoters)</li> <li>• Citizens</li> <li>• Servers</li> <li>• Assessors</li> </ul>
Resource	<ul style="list-style-type: none"> <li>• Infrastructure: electric grid and logic, equipment data and application servers, • scanners, desktop computers, printers and digital certificates;</li> <li>• Files for storage of physical processes;</li> <li>• Information Systems developed by Softplan (SAJ)</li> </ul>

Knowledge	<ul style="list-style-type: none"> <li>The knowledge involved in the lawsuit relates to decision-making procedures (terminative done or not) and search for documents that substantiate the decisions;</li> <li>For judicial administration knowledge related to strategic planning is applied, as well as their control and enforcement.</li> </ul>
Culture and Power	<ul style="list-style-type: none"> <li>Hierarchical Organization.</li> <li>Indications for the promotion to the Court are political, and career longevity, and productivity;</li> <li>The Courts of Justice, as the other organs of government are subject to the rules of the Public Procurement Law (8666), which regulates how the public agency must celebrate their contracts;</li> <li>The Courts of Justice should also note the budget constraints determined by legislation, which inform expenditure and investment allowed by their managers;</li> </ul>

In Table 3 (OM-3), the process is described in detail by identifying the tasks. Tasks are identified and checked to see if knowledge is used in an intensive way or not.

**Table 3:** OM-3 Source: Authors' Collection

Organization model			Decomposition Process - OM-3			
Nº.	Task Name	Performed by	Where	Knowledge Input	Intensive Knowledge	Significance
1	Preparation of decisions (judgment and interlocutory decisions)	Magistrate and advisors	Court / Forum	Selecting documents (law, laws, doctrines and articles) data and parts of the process and the experience of the object decision	Yes	10
2	Structuring of justifications for decisions	Magistrate and advisors	Court / Forum	Selecting documents (law, laws, doctrines and articles) data and parts of the process and the experience of the object decision	Yes	10
3	Defines ordinatory acts	Magistrate and advisors	Court / Forum	Based on the orders of the petitions, define actions in the process	Yes	5
4	Forwarding decision	Notary	Notary	Order of the sentence or judgment	No	3
5	Receipt of action and assembly process	Distribution servers	Distribution servers	Mount the folder of the process and number the pages.	No	1
6	Distribution	Distribution servers	Distribution servers	Distributes the processes stick competent / drawn	No	1
7	Public movement	Notary	Notary	Publishes drives defined by the magistrate	No	3
8	Administrative management of the resources of the Court	Magistrate and advisors	Court of justice	Specific legislation, budget reports and controllership	Yes	3

In Table 4 (OM-4), knowledge is detailed and related to its actors.

**Table 4:** OM-4 Source: Authors' Collection

Organization model			Knowledge Inputs - OM-4			
Knowledge	Possessed by	used in	Right form?	Right place?	Right time?	Quality correct?
Knowledge related laws, interpretation and application in concrete case	Magistrate and Advisors	Preparation of decisions (judgment and interlocutory decisions)	No: No definition of sharing and storage knowledge	Yes	Yes	Yes
Knowledge to perform searching, selecting and storing documents for justification of the decision	Magistrate and Advisors	Preparation of decisions (judgment and interlocutory decisions)	No: there is no reuse, storage or sharing systematic manner within the institution	Yes	Yes	No
Definition of procedures in accordance with the present in order petitions	Magistrate and Advisors	Definition of ordinary acts	No: there is no reuse, storage or sharing systematic manner within the institution	Yes	Yes	No
Specific legislation, budget reports and controllership	Magistrate and Advisors	Administrative management of the resources of the Court	No: in most cases, the Courts do not have on their staff officers with adequate training for management. Furthermore, there is no reuse, storage or sharing a systematic way within the institution	No	Yes	No

Table 5 (OM-5) presents spreadsheet to study the viability of the business, and technical feasibility of the project through a checklist based on the previous worksheets.

**Table 5: OM-5 Source: Authors' Collection**

Organizational Model	Checklist for decision on viability - OM-5
Viability of the Business	<ol style="list-style-type: none"> <li>1. The considerable decrease of process time with the advent of the electronic process, reducing the "dead time" in transactions that do not involve decision-making;</li> <li>2. The decision process - making the terminative done or not - is not supported by tools, and seeking legal reasoning can be difficult in the face of the amount of existing documents;</li> <li>3. The knowledge-based system (KBS) will provide strategic and structural conditions necessary for the alignment between the demands of the NCJ and the planning of the Court, through the application of specialized technological resources;</li> <li>4. The KBS will provide better conditions for cooperative work between the Magistrates, supporting group work using tools to support communication and productivity and reducing costs;</li> <li>5. The KBS will provide specific tooling directed to the automation of search, selection, storage and reuse of knowledge and information, for use in the offices of magistrates;</li> <li>6. The KBS will preserve the history of information and knowledge in order to allow reuse of decisions and their explanations;</li> <li>7. The KBS will provide the information through the Intranet and Internet, facilitating access of judges and advisors, respecting access criteria laid down;</li> <li>8. The KBS will foster cultural change, with the adoption of working methods with the use and reuse of information and knowledge, with an emphasis on productivity, effectiveness and safety;</li> <li>9. The KBS will provide resources to enable the acquisition, use and reuse of information and knowledge;</li> <li>10. Streamline service of process, with the adoption of technological resources for greater speed in the processes of search, selection and storage decisions, articles, case law and doctrine;</li> <li>11. Democratizing access to justice through better computer resources to facilitate the care of a greater number of jurisdictions, with excellence, quality and speed;</li> <li>12. Reduce the costs of time, financing, and paper handling, resulting in increased productivity and flexibility in preparing ordinary acts, interlocutory judgments and sentences;</li> </ol> <p>The gain in time and quality of the decision would be great, not raising the costs of deployment, but with the social relevance and economic gain to the country with this decrease in time, imagining that a solution to this problem had cost-effective material.</p>
Technical Viability	This project requires knowledge related to document annotation
Project Viability	<p>The need for KBS to support tasks related to decisions - terminative or not - was noted, as well as its rationale and tasks related to judicial administration, because they are task-intensive knowledge, without due storage use and reuse.</p> <p>In turn, it was found that the significance is greater with respect to the decision-making tasks.</p> <p>In this context, it is noted that the investment (time and technological and financial resources) to develop a system to support the decision based on the information contained in an unstructured process is high when compared with tasks related to document retrieval for legal grounds, in view of the complexity of these tasks.</p>
Proposed Actions	<p>Deployment Process in Electronic Counties which have not yet been implemented;</p> <p>Create culture electronic petition to representatives (Lawyers, Attorneys, Public Defenders) in the counties where this is already deployed, leaving the physical model;</p> <p>Structuring the cause of order and counterarguments (legal reasoning) in order to present a summary to the magistrate at the time of the decision;</p> <p>Development of Knowledge-Based System for sanitation action, generating a summary from the pleadings, and, from this summary indicating possible decisions;</p> <p>Development of Knowledge-Based System to support the legal reasoning, through the search of documents that are relevant to the topics of interest or need of Judges and Advisors;</p> <p>Development of Knowledge System to support the Judicial Administration, in order to improve the use of its technological resources, physical and personal, ensuring their implementation in order to achieve higher performance and speedy trial.</p>



From the survey of the organizational context and observing the raised issues and opportunities, there are actions that can meet the demands, even if these actions do not become a Knowledge-Based System. It is observed, for example, that an action for training and dissemination of the culture of electronic petition between legal representatives - Lawyers, Attorneys and Public Defenders - would bring significant impacts on the application of the electronic process and hence rapidly bring back to the judiciary.

Likewise, KBS solutions are shown, which should be criticized to ensure that they respond properly, performing knowledge-intensive tasks. Prioritization and this criticism are made in the models.

#### 4.2. Task Model

According to Schreiber et al. (2002) the Model of Task analyzes the global knowledge-intensive task and subtasks involved.

Table 6 (TM-1) provides the tasks and their description.

**Table 6:** TM-1 Source: Collection of the authors

Task Model	Task Analysis - TM-1
Task	Court decisions, proceedings and claims arising from the CJ-AM
Organization	Activity required to give progress or completion of the judicial process.
Objective or Earned Value	<u>Objective:</u> Assist the judge and counsel in the preparation of decisions and their justifications. <u>Earned Value:</u> Decrease sentencing time significantly, giving flexibility to the process to better serve the citizen. Increase the decision quality.
Dependencies and Flow	<u>Input:</u> Petitions, evidence, expert. <u>Output:</u> Judgment and reasoning in the same.
Handled objects	Process documents Laws Decisions in previous cases, court decisions, rulings Doctrines Articles
Time and controls	After the application, and the receipt of the action by the judiciary, the process is distributed and is starting its proceeding. There is no minimum or maximum term for the process to be complete, but there are deadlines for some formalities. The NCJ establishes statistical controls and productivity goals to be achieved.

Agents	Magistrates and Advisors
Knowledge and competence	Criteria for judgment, law enforcement, doctrines and jurisprudence; Search for documents relevant to the basement of justification.
Resources	Laws Jurisprudence Doctrines Petitions Internet
Quality and Performance	The decision process should result in a sentence with fewer resources and a reduction of time sufficient to ensure that the processes are quicker.

In Table 7 (TM-2) the task analysis are given in detail. They are related to the nature of knowledge, its form, and availability.

**Table 7:** TM-2 Source: Authors' Collection

Task Model	Items of Knowledge - TM-2	
Name	Judicial decisions	
Belongs to	Magistrates and advisers	
Used in	Decision-making and justifications	
Domain	Laws, jurisprudence, doctrines and articles	
	Nature of Knowledge	Bottlenecks/Improvements
Formal, Strict		X
Empirical, quantitative	X	X
Heuristic, Rules	X	X
Highly specialized	X	X
Based on experience	X	
Based on activities	X	
Incomplete	X	X
Uncertain, may be incorrect.	X	X
Changing rapidly		
Difficult to verify	X	
Tacitus, difficult to convey.	X	
	Format of Knowledge	Bottlenecks/To be improved
Mind	X	
Paper	X	X
Electronic Format	X	X
Action skill	X	X
Others		
	Availability of Knowledge	Bottlenecks/To be improved
Limitations of time		X
Limitations of space		
Limitations of Access	X	
Limitations of quality	X	X
Limitations of structure	X	X

In this model, the tasks were detailed, with emphasis on the tasks already identified a priori as being intensive knowledge, namely sentencing, which encompasses the procedures from the sanitation process to the magistrates where doubts are solved, the definition of the sentence to be given justification and description of the sentence, defining the reasons that led the magistrate to choose these paths, as well as legal reasoning, and the judiciary, which takes into account that magistrates in charge of controlling the courts or forums assume, concurrently with their judicial function, the function of management, having to manage the resources of the court and make the right investments in order to achieve an appropriate model, taking into consideration the budget legislation in force.

For the purposes of this work tasks are exposed related to the act making. In turn, the complexity of these tasks leads to its separation from the sanitation process, definition of the sentence and the task of justification for the decision.

#### 4.3. Agent Model

The Agents model describes agents involved in task, aimed at the organizational model, which can be human or not. According to Schreiber et al (2002), the agent model describes agents in more detail

The Table 8 (AM-1), presents a description of agents.

**Table 8:** AM-1 Source: Collection of the authors

Agent Model	Agents Worksheet - AM-1
Name	Magistrates and Advisors
Organization	Activity required to give progress or completion to the judicial process.
Involved in	Preparation of decisions and justifications
Communication with	Registry office, Lawyers, Prosecutors, Advocates and Attorneys
Knowledge	Decision criteria, seek information to assemble the justification.
Other competencies	Recovery of old cases to follow the same line of decision
Responsibilities and restrictions	Based on current legislation, as well as the documents and evidence accosted the court process, the judge and the assessors can use the previous decisions in order to maintain uniformity of the pattern of decisions of the judiciary, however, with autonomy to decide according to their understanding as long as according to the parameters set by the law.

The Agent Model lifted, consistent with the model of tasks, participation of the actors involved in the process. Given the relevance of knowledge-intensive tasks, agents with decision-making function (sentencing) were approached. Other agencies involved in the case before the court are known as cartographic, who are responsible for disseminating the decision, lawyers, prosecutors, defenders, prosecutors, the judiciary demands promoting and responding to new demands, in case of summons and subpoenas, as well as interacting with the magistrate in order to meet its determinations, produce proofs and clarifications, seeking to bring the process to closure.

Table 9 (OTA-1) brings a checklist with the union of the models of the organization of the task and the agent observing the critical success factors of the system being implemented.

**Table 9:** OTA-1 Source: Collection of the authors

Organization Model, Task and Agents	Worksheet with Checklist and Impact Improvements - OTA-1
Impacts and changes in the organization	The development of this system would bring greater efficiency and quality in decision making and therefore the responses to citizens and businesses. The faster justice impact the economy.
Impacts and changes to specific tasks/agents	The decision process would be aided by a knowledge-based system, and the final word of the Magistrate. The agent involved (magistrate and advisor) would work faster and be more reliable.
Attitudes and Commitments	For the process to work, requisitions, as well as documents related to past decisions should be scanned and sorted beforehand, ensuring a more adequate search and thus, formation of legal justification.
Proposed Actions	Search system documents, jurisprudence, laws and doctrines in order to assist the decision and/or support it.

Based on surveys of contextual layer, there is the need of knowledge-based system that supports the execution of three knowledge-intensive tasks.

The decision is given priority in the development effort and a ratio of relevance. It is seen that the most important task would be to develop a system to support the judicial decision, terminative or not, seeking information in the process running

summary tasks and more relevant data consolidation procedures, but the time and effort of development are high.

In turn, management tasks of the judiciary, related to resource management, since the magistrate performs these functions concurrently, have median effort, but one also relevant median.

Thus, the task of supporting the rationale for the decision to support the search tool that documents the increasing assertiveness of the service demand of information requested by the magistrate, has great relevance and low effort, when compared with the previous two.

Based on this decision, the modeling of the conceptual layer will occur from the development of knowledge-based system to support this task.

#### ***4.4. Model of Knowledge***

Schreiber et al (2002) describes the knowledge model as a description of the knowledge so that it is understandable by humans, so as to be perceived by users and experts.

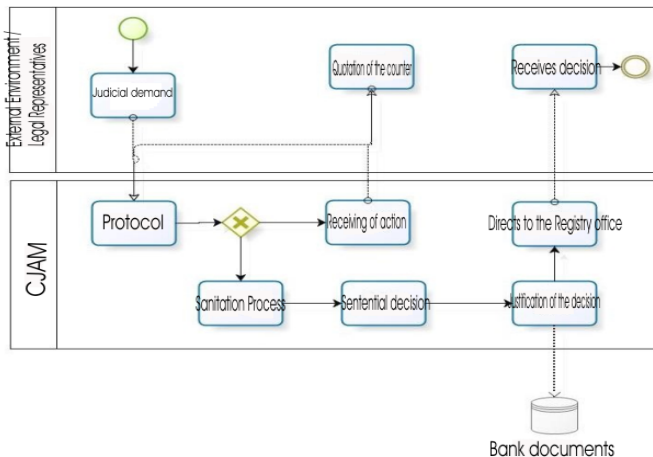
The following steps were identified for task execution:

1. Registration process in the system through the initial petition;
2. Receiving of action and quotation of the opposing party
3. Intermediate petitions;
4. Sanitation of the process;
5. Search documents that support the decision;
6. Sentencing (decision making)
7. Justification for the decision;
8. Forwarding to the Registry office for publication.

In some cases, making the reading of the case, and considering all the pleadings, the magistrate is convinced the way

forward, without any doubts for the definition of the sentence. Likewise, it is necessary to document searching for justification of the sentence.

Figure 1 shows the domain structure and inference. The applied model uses standard BPM<sup>5</sup>, which demonstrates the processes, and if so, assists in the identification of knowledge-intensive processes, as well as its interaction with processes before and after, also identifying inputs input (output of the previous process) and the product that was waiting for its output (input process input later).



**Figure 2:** Flowchart of macro-process activities  
SOURCE: Collection of the authors.

The following steps have been identified for the implementation of task 6, focus of the work, as the priorities identified in the contextual layer:

1. Magistrate identifies key points of the decision;

<sup>5</sup> BPM is a concept that combines business management and information technology. Methods are used, techniques and tools to analyze, model, publish, optimize and control processes involving human resources, applications, documents and other information sources.

2. Identifies words that would facilitate the search for documents;
3. Performs the search of documents with the terms identified;
4. Makes a reading of the document, comparing to the case that has to justify the decision;  
Should have a relevant relationship, select the document, otherwise discard it;
5. Copy the relevant section of the selected documents, quoting it, in the grounds of the decision.

It is observed in this context that the magistrate uses tacit knowledge **to select and identify the terms** that will be used to compare the cases and, after selection, **the knowledge is used to compare the dismissed case** with what is in the retrieved document.

The Magistrate, to make reading documents, discards irrelevant documents and applies knowledge to perform this task. These activities are knowledge intensive, and can be optimized by the development of a Knowledge Based System, in this case, linguistic knowledge, to improve search performance, improving the bottom line, in other words, benefiting the magistrate and his advisors in the selection of more appropriate documents to the context of the decision being handed down by the judge.

#### ***4.5. Communication Model***

For Schreiber et al (2002), the communication model describes how the agents involved communicate while performing a task.

Table 10 presents the communication model.

**Table 10:** CM-1 Source: Collection of the authors

Communication Model	Worksheet with descriptions of Transactions CM-1
Transaction	Search legal foundation
Informational object	Process file, containing petitions, test objects, skills, and jurisprudence database judged, judgment and decisions with or without the participation of the decision maker in question (their decisions and colleagues); doctrines.
Agents involved	Magistrate and advisers x software agents
Communication Plan	Magistrates send messages to agent software containing search terms; Software agent returns documents with relevant results for the reasoning
Restrictions	
Specification of Additional Information	Refinement of the search criteria if you have many cases with the same characteristics.

For this work, following the definitions of priorities raised previously, a defined model of communication that defines the interaction between the agents in this case, between the human agent (Magistrates and advisers), should justify the decision, and the software agent endowed with linguistic knowledge of the legal context and the process must return relevant to the task of justification documents.

#### ***4.6. Project Model and Proposed Solution***

Once defined the artifact to be developed, it is necessary to develop planning and defining how the project will be managed. For both observed opening to be applied methodology included in PMBOK® for developing such a model, as well as the definition of monitoring and management of processes consequent development and design of Knowledge-Based System.

Based on application of the PMBOK® generally and without formal documentation required, however, following its



footsteps, the funds involved in the project are initially raised. Since there would be subcontracted people or companies for the execution of the task, to get up resources, already determined the responsibilities for the project. To develop the linguistic field of application through formalization with ontologies, resources will be allocated as engineers Egon Sewald Junior, Maurice Rotta and Priscila Vieira. As a domain expert in the legal field is allocated to the project in the master right Valter Moura Carmo. The charge of the project and its management and control is Egon Sewald Junior.

The details of the activities, timelines and formal budgets are not in this work because the execution of the same will be done by members with proximity and availability of access. It was, however a defined sequence of activities to be followed for the development, planning and implementing tasks according to the methodology METHONTOLOGY, chosen encompass all tasks for ontology development and present a logical sequence suitable for its construction. To define the use of ontologies reviewing applications was done of ontologies in the legal sphere.

Based on the information gathered, knowledge-based system for document retrieval based on semantic is proposed.

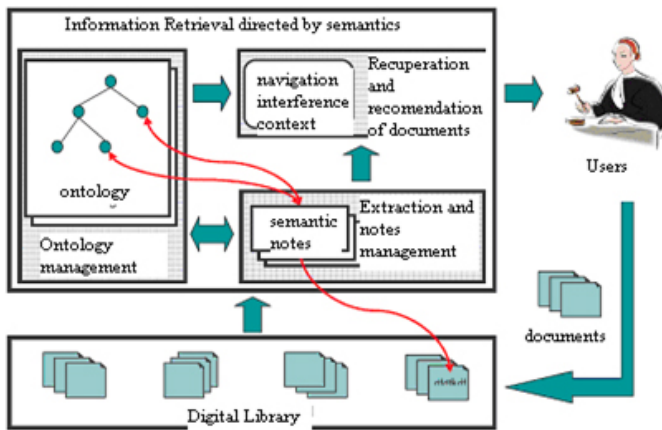
Thus, we propose an architecture formed from the generation of shared ontologies that define concepts that serve to annotate documents in order to facilitate the search.

The definition of a solution for recovering documents also described by Ramos Jr. (2008, p.91) when speaking of the problem of information retrieval, states that:

To solve all these issues it appears as an alternative use of the semantic web through the use of XML standards and ontologies legal, because the documents containing legal decisions involving computer crimes can also be marked with properties that allow its recovery much more efficiently through the use of ontologies.

The proposed model is based on Nunes and Fileto and is shown in Figure 3.

It is possible to apply techniques from natural language processing to identify named entities and associate them with concepts and instances of legal ontology, to define semantic annotations to facilitate information retrieval of these documents (NUNES; Philetus, 2007, p. 5)



**Figure 3:** Architecture for information retrieval based on semantic  
SOURCE: NUNES, FILETO (2007, p. 5)

The model is corroborated by Ramos Jr (2008, p.26):

In this architecture, the management of ontologies for storing one or more ontologies that will be used to retrieve the information in the documents. The recovery module and recommendation document creates the user interface.

From this literature it is proposed, be therefore described in the realm of legal language to enable document annotation, generating semantic index for retrieval, and the possibility of inference/reasoning.

## 5. Final considerations

This article used the methodology CommonKADS to model, in context, the knowledge and information used in the Court of the State of Amazonas. Through its models, issues were raised to be addressed, such as the difficulty of searching for documents for justification of the sentence, essentially composed intensive tasks of knowledge. With the large scale use of digital processing units TJAM the courts, the conduct of proceedings in electronic gained speed, and so, the magistrates and their advisors' need of computational resources to support them in decision-making activities. It was therefore possible to confirm the feasibility of the construction system to assist the human decision maker, making a pre-selection and suggestion routing, a system enabling the search, selection and classification of documents of interest to the magistrate.

At the end, it is concluded that the methodology CommonKADS proved highly applicable and that the Court of Justice of the State of Amazonas, in order to offer better judicial services to citizens, proposing solutions to the problems of "bottleneck" in meeting the demands of their lawsuits, can take a big step with the introduction of the electronic process in order to reduce the "dead" time and development system modeling, as presented.

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# ***e*-GOVERNMENT AND WEB 2.0 IN PROMOTING CITIZENSHIP: THE USE OF THE APPLICATION FLICKR IN THE SUPERVISION OF PUBLIC WORKS IN SANTA CATARINA**

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## **ABSTRACT**

This paper aims to examine the role of e-government and Web 2.0 as factors promoting citizenship. From this perspective, it is necessary to understand the scenario of the debate, the Information Society, to then advance the understanding of electronic government, their stages of development and goals. We used it as a methodology of case study, noting the use of the application flickr on building inspection in Santa Catarina, quantitatively evaluating the number of works and the number of users and quality of effective citizenship. The partial results of the study indicate that even for a low use of the tool, but also for the possible effect of the citizenship, the main guideline of e-government is essential to improving and developing tools to promote integration with the citizens, and dissemination of their use.

**Keywords:** e-government; flickr; citizenship; Santa Catarina.

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## 1. Introduction

A continued progress and cumulative use of new information technologies and communication lives today. More and more people are incorporating technology into their routines. Applied to the government, the technologies must offer especial tools through which one can contemplate the effective participation of citizens through the expression of views or even their inclusion in the formulation of public policies, since the guarantee of the legitimacy of a political action is achieved only to the extent that the public may directly or indirectly participate in decision making on public policy.

Thus, in order to analyze the performance of such a demand, this article was structured with the primary objective of assessing the use of e-government application in Brazil, through the analysis of the initiatives currently in place in view of the introduction of new components focused on the society interaction as is the case of web 2.0.

How to build e-government with an open outlook, enabling citizenship? This is the main question of the article. Therefore, section 2 deals with the concepts of development and priorities for e-government agenda. Section 3 presents the Web 2.0 model considered essential for breaking paradigms in service, joining engineering ideas and knowledge management. Section 4 discusses the benefits of the “marriage” of e-gov initiatives with Web 2.0, which is the promotion of citizenship. In section 5 there is the relationship and analyzing application usage of flickr for supervision of works in the State of Santa Catarina, through the number of works, number of users and their impact on the formation of effective citizenship. Finally, Section 6 contains a summary of the analysis presenting the conclusions of this paper and the proposals for future work.

## 2. Electronic government: development and priorities

The beginning of any analysis implies a spatial and temporal context. Temporally, the analysis lies in the period of pregnancy, that is conventionally called the Information Society or Network Society (CASTELLS, 1999). In other words, how ITCs are organized and have transformed almost every human activity.

Thus, in this context where the development of technologies is increasingly fast and takes the emergence of new demands to the government action, it is required from the government to provide universal access to and use of ITCs. In Brazil, the recognition of the strategic importance of the Network Society was through the planning and investment in e-government programs.

According to Rover (2009), e-Government can be defined as

a purely instrumental administration of state functions [...] and the achievement of the purposes set out Democratic State using new information and communication technologies as a tool for interaction with citizens and public services (ROVER , 2009, p.21).

Thus, e-government seeks to promote greater efficiency and effectiveness of government, facilitating access to public services, allowing the general public access to information, and making government more *accountable* to citizens (SANTOS, 2003).

Generally, e-government comes in various levels of government relations, namely:

G2G (*Government Government*): Corresponds to integrate functions of government actions horizontally (eg the Federal level, or within the Executive) or vertically (eg between the Federal Government and State Government);

B2G and G2B (*Government Business*): Corresponds to government actions that involve interaction with external entities. The most concrete example of this kind is driving purchases, contracts, tenders etc., via electronic means.

G2C and C2G (*Citizen Government*): Corresponds to the actions of the Government to provide (or receive) information and services to citizens via electronic means. The most common example of this type is the transmission of information on a website of a government agency, open to any interested parties. (TAKAHASHI, 2000, p.69).

Note also that the stages of development of e-gov go through four different levels. The first, called *information* corresponds to establishing a presence on the government Internet. In the early stages of *interaction* and *electronic management*, second and third respectively, the websites of government extend the provision of information and start receiving citizen data. In the fourth stage, called *transactional*, transactions between governments and users become more complex. In this phase, the citizen has access to all government services and information through a single port of entry (PIANA, 2007, p. 114-121).

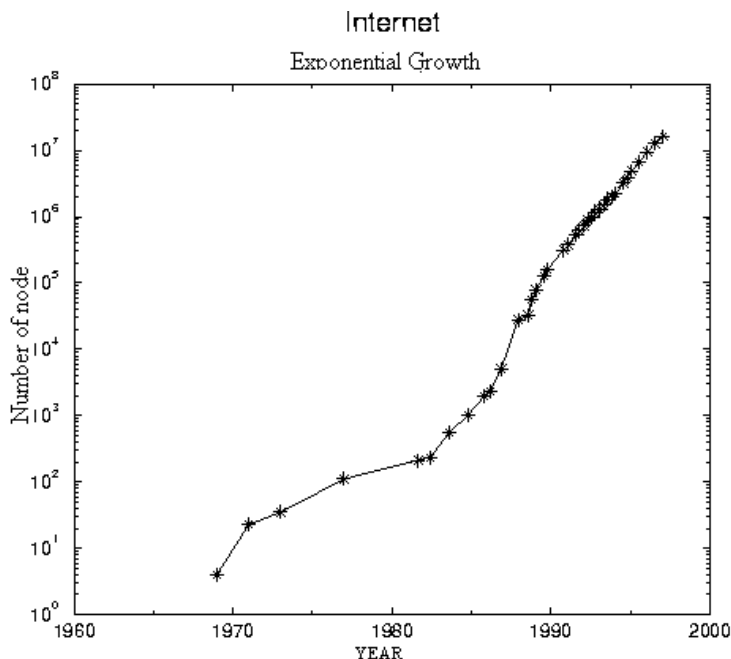
It is worth noting that among the general guidelines for e-government in Brazil, the priority is the promotion of citizenship, and this is linked to digital inclusion. Thus, besides the computerization of services it is indispensable to consider policies that promote interaction between governments and citizens, in a more advanced level of e-government, as seen above.

In this sense one of the highlights in the field of e-government is the use of Web 2.0 tools in government initiatives, which is the approach of the items that follow.



### 3. Web 2.0: a paradigm shift in the world wide web

The *World Wide Web*, or simply *Web*, enabled the dissemination and production of documents using various medias to computer users worldwide, connecting them via the Internet.



**Figure 1:** Exponential Growth of Internet usage. Source: SIMON

The growth of Internet use, shown in Figure 1, generated new demands for information and interaction spaces, which gave rise to numerous tools to meet these needs. Among them, fall collaborative tools that add the concept of web 2.0.

This concept was first used by DiNucci, in the article “*Fragmented Future*” (Fragmented Future, translation by the authors), published in *Print Magazine*. In this sense, according DiNucci:

The first light of Web 2.0 is starting to appear, and we're just beginning to see how that embryo might develop (...) The Web will be understood not as full screens of text and graphics but as a transport mechanism, through which interactivity happens. She still appears on the computer screen, transformed by video and other media made possible by new technologies dynamic fast connection now coming down the pike. The Web will also appear in different forms, on your TV (interactive content transparent fabric in programming and commercials), the dashboard (maps, yellow pages, and other information to the traveler), your cell phone (news, quotes actions, updates flight), hand-held game machines (which connects with players competing for the Net), and maybe even your microwave (cooking times automatically find the products) (DINUCCI, 1999, p.1, our translation)

However, the origin of the concept of Web 2.0 is commonly credited to the *O'Reilly Media, Inc.* and its vice president, Dale Dougherty, and defended by its CEO, Tim O'Reilly - advocate of open standards on the Internet. O'Reilly defends the origin of the term:

The concept of "Web 2.0" began with a conference *brainstorming* session between O'Reilly and MediaLive International. Dale Dougherty, web pioneer and O'Reilly Vice President, noted that far from having "breaks", the web was more important than ever, with new applications and sites breaking out with surprising regularity. Moreover, companies that had survived the collapse seemed to have some things in common. Will the collapse of the dot-com have marked a kind of turning point for the web, such that a call to action such as "Web 2.0" might make sense? We agreed that it did, and so the Web 2.0 Conference was born. (O'REILLY, 2005, p. 1)

Also in this article, O'Reilly defends Web 2.0 as a platform, not a *software* or technology, and *software* is replaced by

secondary role to the user's wishes, leading actor, being provided as a service by leveraging the structure of the Internet.

It is observed that Web 2.0 is not a purely technological evolution, but rather a change mainly related to cultural utilization of resources, in order to enjoy the participation and interaction among its users. In Web 2.0, the user becomes an actor of great importance, ceasing to be a reader of content and becoming a developer of it.

The user actively participates in the creation of content, either using "blogs", "microblogs", providing and sharing their photos, texts, ideas, or in the construction of "wikis", sharing information about a specific issue (or a general one, such as wikipedia), whose construction is given through user interaction and reputation system, which can correct errors or add text, or even through social networks where users exchange information, interact and build a new concept of collective intelligence.

In Table 1, we can see the new values, applications and Web 2.0 technologies, focusing mainly on the new values as output by the user, collective intelligence systems developed and changed continuously, forming the perpetual beta and ease of use of the new systems.

**Table 1:** Dimensions of Web 2.0.

Values	Applications	Technologies
Produced by user	Blog	Ajax
Collective Intelligence	Wiki	
	Podcast	XML
Perpetual beta*	Search engines	
	MPO games	Open API
Extreme ease of use	Tagging	
	Social Networks	Microformats
	RSS	Flash / Flex

SOURCE: Adapted from OSIMO (2008).

\* Beta perpetual is the term for software or applications continuously, constantly improving, a commitment to the concept of user.

### ***3.1. Information sharing***

As can be seen, Web 2.0, the user, that was once a mere spectator, became the agent of the process, interacting and producing knowledge, expressing their opinions, tastes and information through blogs and microblogs, discussing some matters with other users of common interest, through social networks, among others.

### ***3.2. Participation, Participatory Culture, and Social Networks***

A social network is not formed only with the connection of users or terminal *online*. Its existence emerges from the interaction among users, and its focus is on “between” (= interaction between action, for any reason or matter). In this view, Web 2.0 can not be seen as a technology, not as isolated individuals, but rather from the interactions and the way content is developed in a participatory way, being changed in every interaction, through the relationship between “interacting.”

### ***3.3. Folksonomy and Tagsonomia***

In addition to the innovative way of publication and circulation of information, Web 2.0 presents a way for collective organization and content selection. In this concept, but “to bookmark” certain subjects, the user (author) generates metadata (information about data, data about data) through tags (labels) referencing content. This process has been called *folksonomy* (portmanteau of the words folk and taxonomy). According to Matheus:

folksonomy represents a fundamental change in which it is not derived from professionals or content creators, but from the users of information and documents. Thus, it directly reflects their choices in diction, terminology, and precision (MATHES, 2004, p.4, our translation).

Through this form of tagging, a subject can come in many different categories, not dependent on hierarchy; recoveries from many media and contents of the subject sought are possible.

#### **4. Web 2.0 and the e-participation: universalization of services for citizenship**

In a synonymous way to the corporate environment, Web 2.0 enables new forms of interaction with the user, in this case the citizen.

The “Web 1.0” revolutionized the interaction with the citizen and the state at the time it created the possibility to request services electronically, without the need to go to the public agency. The transaction in this case depends on the format in which the State provides the service, and the citizen should follow this format, without much flexibility. Most of the time, the State had the service for citizens to be able to fulfill an obligation.

With Web 2.0, the citizen can create content and use services more interactively, such as the possibility of participation in initiatives of “participatory budgeting”. Table 2 compares some characteristics of government “1.0”, based on Web 1.0 and Government 2.0, Web 2.0 user.

**Table 2.** The Web and e-government.

<b>Past</b>	<b>Present</b>
1995 ~ 2000	2005 ~2010
Web 1.0	Web 2.0
Government 1.0	Government 2.0
Focus on government	Focus on the citizen
Portal	Integrated services
Service in a sense	Interactive services; partnership
Services tied to place and time	Mobile Services

SOURCE: Adapted from PAN

Web 2.0 also revolutionizes the application form of citizenship. With the possibility of citizens to develop content - critics, ideas, demands - they participate more in decisions of the State, or through the mobilizing power of the Web, call the attention of the State in order to make their “voice”, their opinion be heard. Web 2.0 has been used, for example, to collect signatures for a petition<sup>4</sup> or to supervise the actions of the State, since simply sharing information with labels (tags) in common, from various sources (different users) could generate a dossier accompanying these government actions.

## 5. Case Study

To corroborate the theory that Web 2.0 brings the citizen mobilization capacity and enforcement power, we will observe the use of case tool (in some cases we find the description as a service) flickr ([www.flickr.com](http://www.flickr.com)) in inspecting works in the state of Santa Catarina.

The service/flickr tool, as the description found on the site itself, is an online application for managing and sharing the world with the goal of helping people to make content available to people who are important to them, and enable new ways of organizing photos and videos (FLICK, 2010).

The secretariat of public works from Santa Catarina, created a user named “SC\_Fiscal\_web2.0 (Group),” and with this, the watchdog group can insert content, create standard *tags* (tags that link the photos and other content to supervised work) and display the content posted by a citizen.

The methodology used was the quantitative analysis, measuring the number of works and the number of users using the

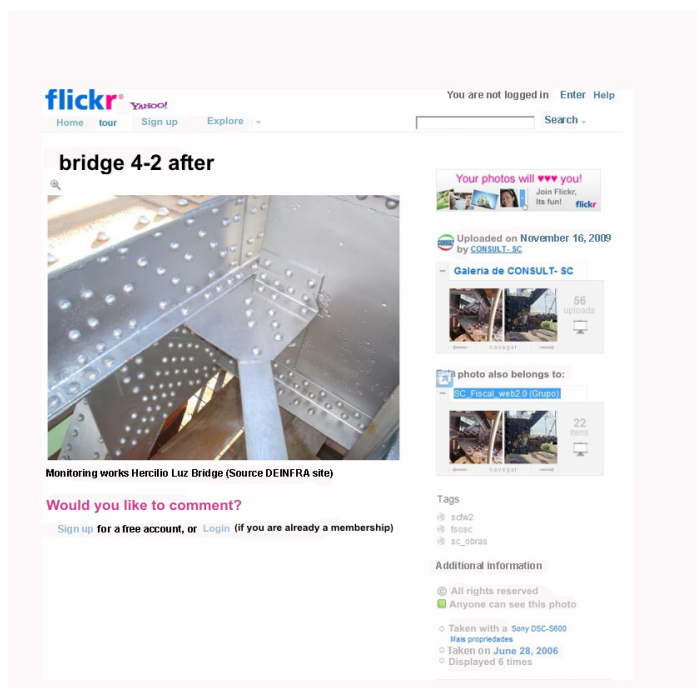
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4 Example of popular mobilization: <<http://www.generazioneattiva.it/>>. A person creates a subscription website protesting against tariffs, reaches 800 thousand signatures, aatel did nothing but EU saw it and pressed the Italian Government to take action in case of proactive participation of society in the regulation.

tool, sharing information for the purpose of inspection and using the user-defined tags created by the Department of Works. The effectiveness of the participation process of the common citizen in construction and government decisions, establishing fullness of citizenship was also analyzed qualitatively.

Through the application Flickr, any citizen, therefore, plays actively in the process of inspection, photographing or filming the work in their state. By labeling it with their own user, the citizen creates connection between content and all works in progress, without the need for prior registrations.

In Figure 2, there are connection elements (labels/tags) in the content posted, in this case, photos of works to revitalize the Hercílio Luz Bridge, which connects the island of Santa Catarina to the mainland, in Florianópolis, the capital city of Santa Catarina.



**Figure 2.** Monitoring of the Work of the Hercílio Luz Bridge. Source: Flickr.

The chronology of completion can be followed by the dates of posting, the image seen in “Additional Information”. With such chronological control, one can monitor the execution of the works in their different stages.

Assessing the number of works, there is a small number, only two works (Administrative Center and Hercílio Luz) in the testing phase, and a number of 2 users adding photos, not being able to pinpoint whether the users are the secretary of works, or a citizen participating by watching.

With respect to effective citizenship through participation in citizenship, research has been unable to point out results, but noted that, with a possible increase of tool usage, e-participation, and consequently e-citizenship, becomes effective.

There is, however, a large possibility of using *open-source* tools for effective citizenship, and these have been mentioned as possible reasons for the small non-disclosure and use of *tags* used for mass surveillance and initiative low starting population.

From this case study, we suggest a wider dissemination of methods of supervision through popular initiative as well as work related to the sense of ownership, since public works are financed and carried out for the citizen.

The proposed tool can be used at any level of government, whether local, state or federal, inspecting the works carried out by them.

## 6. Final Considerations

The Web 2.0 tools enable citizen participation more effectively in mobilizing government decisions, supervising or just putting the opinion, so that the collective becomes a democracy, demonstrating their will.

Such tools have generated a new way of using the Internet, to develop the government, with new forms of interaction, called “Government 2.0.”



Through the case study of the use of the tool (in some cases we find the description as a service) flickr ([www.flickr.com](http://www.flickr.com)) for supervision of works in the state of Santa Catarina, we corroborate the theory that Web 2.0 brings the citizen capacity of mobilization and enforcement power.

Partial results of the study indicate that even for low use of the tool, but also for effective citizenship, the main guideline of e-government, the improvement and development of tools that integrate with citizens are essential.

As a suggestion for further work, it is suggested to repeat the observation after more widespread use of the tool for the purpose of inspection of works. Such disclosure could be done by putting labels (*tags*) on the plates that define the work, which are near the works.

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# GLOBALIZATION AND THE DIGITAL BREACH: SOCIETY FACING THE NEW TECHNOLOGIES

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## ABSTRACT

The globalization opens innumerable doors to use the new technologies in favor of the growth in the commercial interchanges, the markets expansion and the possibility of conducting transactions and offer services around the world. However, in order to achieve these opportunities it is necessary to have technology; and even more important, to know how to use it. This makes knowledge and information become indispensable and the most useful product in this globalization process. Although there is a huge inequality in the possibilities that exists among people to access to information, knowledge and education. This phenomenon we have called digital breach; in other words, it is the distinction that exists among people, communities and countries that use New Information Technologies as part of their daily life, from those that do not have access to them or do not know how to use them. While it would be a first differentiation, more accurate criteria to refer to included or digitally excluded were not yet clearly established. Most studies used vague and precarious indicators, neglecting important aspects related to the purpose and usefulness of the information obtained, doing nothing to hinder the understanding and possible solutions to this problem, for the digital breach is not exclusively a technological trouble, this breach is directly tied with socioeconomic and political factors.

**Keywords:** New Information Technologies; Digital breach; digital exclusion.

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## 1. Preliminary notes

Influenced by many factors, today it is common to refer to our society as a “technological society, and this term arises from the dominance and influence of information technology in our daily chores. Undergirding the definition of what would be the information technology, we can say that this refers to the set of technological resources used for the use of information or even, non-human resources dedicated to the storage, processing and communication of information (WACHOWICZ; CASA-GRANDE, 2012, p. 95).

The origins of this expression can be found in 1958, in an article by Leavith and Whisler entitled “Managing in the 80s”, there, these innovations were defined as the means used by production companies to promote and empower the process of creating and development of technology training (FREITAS, 2012, p. 50).

Although these technologies initially referred to information in a classic approach (understood as data transmission on something or someone, usually news coming to the receiver with certain time interval), now this idea has been altered, because the word modern information relates to content and the integration of different sources of knowledge (FREITAS, 2012, p. 50).

The New Technologies of Information intended or were created to accelerate the development of society based on knowledge. However, this initial purpose seems to have been reduced, mainly due to the currently existing approach to the concept of development, usually identifying with another idea known as growth restricted.

Thus, the central objective of the new technologies relating to the pursuit of development has been somewhat secluded. Most countries, in their quest to achieve greater economic growth, focus their efforts result in industrialization and promoting growth in the Gross Domestic Product (GDP), relegating the quality of

life of its inhabitants - and thus a comprehensive development - to the background (RIBEIRO; BENEDETTI; MACIEL, 2012, p. 72-73)

Development should be seen as a complex process of change and transformation of economic, political, human and social order mainly. Amartya Sen explains that the characterization of the development can be obtained from other parameters in addition to the estimates of income and GDP, especially after the assessment as to the existence of substantive freedoms that include such political freedoms, economic facilities, social opportunities, transparency guarantees and protective security. Thus, the development, and the borders of the economy can be assessed from the opportunity that is given for the individual to exercise their freedom. (SEN, 2010, p. 16).

Therein lies the importance of access to knowledge and technology, for the more widespread access to information the greater the prospects of development (RIBEIRO; BENEDETTI; MACIEL, 2012, p. 74), since in the information society - element of postmodernism - the true wealth of the individual is concentrated and can be verified by their level of knowledge and information about the society, the market and technology. This level of information tends to influence directly the position that they will occupy in the society in which they are inserted, determining social inclusion as agent or their marginalization and consequently their social exclusion (MATOS; JAKOBI; RIBEIRO, 2012, p. 122).

Since this is one of the major problems facing the so-called information age, as some people are highly skilled, internationally competitive, so they end up distancing themselves from their community, while others are no longer able to participate actively in our society. These circumstances strongly affect the economic, political and social development of a nation (MATOS; JAKOBI; RIBEIRO, 2012, p. 127)

## 2. Groups within technological society

Although it was in the 90s that new technologies spread, the origins of the technological revolution can be found in April 1969, with the emergence of the Harp-Net, for strictly military purposes. Later, in the decades of the 80s and early 90s, the Internet started to be used only for academic purposes. Only in 1990, with the help of the English Tim Berners-Lee, who developed the World Wide Web (www), or simply Web, the internet broadened horizons and started its expansion throughout the world (FREITAS, 2012, p. 51).

The revolution that led to new technologies during the 90s, led several scholars - among them Marc Prensky – to call those born later this decade, digital natives, or born in the technological society, and the rest of the population are considered “migrants”, those who strive to migrate to a new society based on technological gadgets and socially organized through the world wide web, the internet. These would be the “digital immigrants”, who despite their efforts, yet fail to be equal to the natives, because in one way or another there are aspects of the new technologies that are still difficult to assimilate (FREITAS, 2012, p. 51).

Due to the emergence and use of the New Technologies of Information and Communication, and everything that entails it, our society would be divided into two extremes: (i) the digitally included, who are the holders of the key technologies, and (ii) the digitally excluded individuals who do not have access to this resource.<sup>2</sup> (MATTOS; SANTOS, 2009, p. 118).

Thus, the intrinsic technological development in the information society can generate positive or negative effects for humans, considering the fact that in this new society it allows its users to access information, and in return it can also exclude when

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<sup>2</sup> The term “digital exclusion” or “digital division” first appeared in 1995 in the Los Angeles Times, in an article published by Jonathan Webber and Amy Harmon.

this access to information is denied (RIBEIRO; BENEDETTI; MACIEL, 2012, p. 70). From there comes the need to know what a person means by digitally included or excluded, because although this polarity is present in our society, the parameters for classifying an individual into one group or another are still the subject of analysis and research.

### **3. Inclusion and exclusion in Brazil: Numbers and indicators**

There are few studies in Brazil that expose the phenomenon of the digital division, perhaps the most complete is the Report of the Getulio Vargas Foundation - FGV, entitled “Mapa da Exclusão Digital”. However, as this report was conducted in 2001<sup>3</sup> - 12 years ago - the data presented today are challenged and used as mere reference.

According to this report and considering the number of people in Brazil during the period in which the work was carried out, and the various channels of digital inclusion observed during the research, only 15% of the Brazilian population (26 million) have access or connection to the worldwide web; therefore the rest, or 150 million Brazilians, make up the group of the digitally excluded (MAPA DA EXCLUSÃO DIGITAL, 2003, p. 94)

In a subsequent study, the Brazilian Institute of Geography and Statistics, in partnership with the *Comitê Gestor da Internet no Brasil* (CGI.Br) presented the report which states that in 2005 21% of the population older than 10 years had access, at least once, to local internet (whether at home, at the work place or at a free access center etc.). This 21% represent 32.1 million inhabitants, of which 16.2 million were male, 13.9 million were students and 20 million formed the working population.

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<sup>3</sup> It was published in April 2013

The profile of Internet users presented an average of 28 years old, 10 years of studies and an average monthly household income per capita of R\$ 1.000,00 (FREITAS, 2012, p. 52). On the other hand, the profile of the people who used the Internet in 2005 is dominantly of people with an average age of 37.5 years, 5.6 years ranging studies and who have a monthly income of R\$ 333.00. Comparing these two groups, it appears that those who use the internet are on average ten years older, and if used, have spent less time studying and also have one third of the average monthly income. This is the profile of the excluded of the technological society.

Significantly, the reasons why people did not have access to the Internet are, among others, the lack of access to microcomputers (37.2%), the lack of necessity or desire (20.9%) , and those who could not use it (20.5%) (FREITAS, 2012, p. 52-53).

Another similar but more current report was carried out by the *Instituto Brasileiro de Geografia e Estatística* (IBGE) by PNAD (*Pesquisa Nacional por Amostra de Domicílios*) released on May 16, 2013, which states that during the period covered by the years 2005-2011, internet access in Brazil grew 143.8% among people with more than 10 years of age. However, despite this growth, 53% of the Brazilian population in this age group use the network yet.

Of all Internet users, the study shows that 21.4% of these are among those who have no income or receive an amount equivalent to one quarter of the minimum wage (R\$ 169.50). While most users are between those with an income of between 3 and 5 minimum wages (R\$ 2,034 to R\$ 3,390). Finally, the ones receiving more than five minimum wages had a lower percentage of access (67.9%) (METRO CURITIBA, 17 May 2013).

Another study about a categorization of users according to their economic status is conducted by the *Centro de Estudos sobre as Tecnologias da Informação e da Comunicação* (CETIC.



br), available on their website, there is shown that the use of CTs in Brazil is heavily concentrated in urban areas and the so-called more affluent groups . This report also notes that rural areas lack suitable infrastructure for the use of ICT, consequently the homes located in these regions do not have access to telecommunications and Internet services. According to this study, 28% of households in urban areas have computers, while in rural areas only 8% have access to this technology. In urban households in Classes D and E it is negligible (1%), while in Class A addresses it is practically a universal access (93%). The same report notes that class A represents only 1% of the urban population and that classes D and E represent one third of the individuals in these areas (FREITAS, 2012, p. 54)

With regard to prevention of access to these new technologies, two barriers are dominating; the first has to do with the cost of both the equipment and the connection, and the other, with the lack of skill with these technologies.

In the field of education, the last report issued by the Comitê Gestor de Internet (CGI) indicates that in 2012, 62% of students in public and private schools already had internet access at home. This study also measured the internet access using mobile phones. In this regard, during 2012, 44% of respondents said to have access to the network using this media. Regarding teachers, the study shows that internet access in their homes is nearly universal (96%) (METRO CURITIBA, 24 May 2013).

To increase the access to the NTIS, the State, through projects that offer free internet access, seeks to overcome existing barriers. Such is the case, for example, of the Rede Prouca program (a computer program per student), this program is aimed exclusively at students of the municipal network, being used only within the school with their respective password. In Curitiba - PR, this program allows 80 of the 182 municipal schools to have this service.

The other program with greater range is called *Rede wi-fi*, this program is free and available to the public which are around these 80 educational institutions and in other parts of the city such as squares, parks, markets and touristic spots. This program, according to data obtained from the *Instituto Curitiba de Informática* (ICI), allowed 24.500,00 users to use the Internet, since its inception. According to the report, there are done an average of 2,500 accesses and 100 email accounts are opened daily (METRO CURITIBA, 13 May 2013).

In addition to these reports, there are larger studies that examine the process of digital inclusion in Brazil from a comparative perspective, the most important being the report that is hosted on the site Index Mundi, this indicates that Brazil is the fourth country in Internet users, accounting for a total of 75,982 million people until 2009, ranking below China (389 million), United States (245 million) and Japan (99 million). In relation to South America, Brazil ranks first.

#### **4. Some aspects to consider**

Based on this empirical evidence, we can see a first difference; there is an absolute asymmetry between the expansion of computerized resources and equal distribution among different social classes. Access to technological knowledge is restricted to the more privileged economically, while the weakest sectors are socially and economically unable to approach the New Information Technologies.

This asymmetry is attributed, according to some authors, to the rules of the capitalist system, which in addition to expanding social and economic inequalities, promotes monopoly of access to technologies for just the ruling class.

On the other hand, other scholars claim that the diffusion of technologies and consequently the digital inclusion are a natu-

ral consequence of the expansion of the market, that due to the lower prices and higher quality of products generated by capitalist dynamics itself. Thus the wider range of products and the reduction of costs in the market make larger groups of individuals have access to these technologies, becoming part of the “digitally included” (MATTOS; SANTOS, 2009, p. 120-121).

These precarious conclusions put into question the concept of what would be the inclusion, as it should be clear that Digital Inclusion is not guaranteed only by the existence of equipment and software available to the public, as some scholars say<sup>4</sup>; digital inclusion is related to social inclusion through several aspects such as citizenship, democracy, social, scientific, economic and environmental (FREITAS, 2012, p. 52).

## 5. Final notes

While the data presented provide an overview of the digital landscape in Brazil, and the levels of exclusion and inclusion - as explained Mattos -, these indicators have several limitations and are modest, limited and purely quantitative. The way these data are presented to assess other aspects such as connection speed, quality and time of access, the type of use that is given to information, their application, and especially the ability of the user to read and interpret information. Even with less information, it is possible to evaluate how it is influencing the quality of life and level of development of the people.

These features allow to make a qualitative assessment and not only quantitative. However, given the complexity of these factors, these data are difficult to obtain and include in the definition of inclusion / exclusion digital summing the number of studies people connected to the Internet in relation to the total population.

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<sup>4</sup> As Alencar explained, in this group would be: Amadeu da Silveira (2001;2003), Edson Sadao (2002), José Oscar Carvalho (2003), Fernando Escobar (2006) and Carlos Afonso (2000), among others.

This is seen for example in the reports issued by the IBGE, in PNAD's annual research, considered as a criterion for classifying individuals as digitally included the fact that individuals have had at least one Internet access in the last 90 days prior to the time of the interview (MATTOS AND SANTOS, 2009, p. 120).

In this questioning, we highlight the need for greater empirical research to describe the complexity of this phenomenon and its influence on individuals in society, and society as a whole. As currently recognized, there are three main factors to be taken into account in order to consolidate simultaneous exclusion / inclusion. These are: (i) The existence of ICT, (ii) Having a disposable income which will cover the costs of the use of ICT and (iii) Education.

The latter is perhaps the most important and least considered by researchers. Education is referring to the ability to understand the content generated by the Internet and ICT equipment by individuals who, in most of the studies are located within the group of "digitally included" simply because they are in front of a monitor with Internet access and content.

The criticism of this classification criterion is defended by several authors, who argue that digital inclusion should be directed to the community, since it reaffirms the idea that a computer at home does not solve the problem of inclusion. "Inclusion is to provide fellowship mediated by information technologies and should be considered a social technology in the service of popular mobilization. That is, communities must take ownership of these instruments collectively to solve their problems." (FREITAS, 2012, p. 62).

Therefore, as a conclusion we highlight the need for digital inclusion public policies understood in the broadest possible way, so that this inclusion does not refer to simply access the Internet or some ICTs, but by incorporating digital inclusion important cognitive factors, so that the user can understand and master the language and content accessed. Thus, their inclusion should rep-

resent: (i) An extension of citizenship, and (ii) transmitting progress in terms of formal education, incorporating critical thinking and cultural training and improving their effective participation in society (MATTOS; SANTOS, 2012, p. 128).

The digital inclusion public policies should seek access to new technologies associated with cognitive and qualitative factors, so they can promote significant changes in the social, economic and political. It would not be a useful or relevant infrastructure grant, sizing the program only from the quantitative point of view, as if the simple act of giving computers allowed intellectual training of individuals. Quite the contrary, we must create conditions for active participation in processes of collective intelligence, by means of which citizens, especially the lower level, understand cyberspace and cease to be a passive consumer of information, goods and services, to act also as producers of knowledge in the cyber chain.

Finally Mattos' reflection is highlighted, when saying that public policy should realize that the mere extension of Rapier ICT equipment is not capable of altering the social reality of a country.

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# LEGAL INFORMATICS AND LINGUISTICS: SOME CONSIDERATIONS ABOUT LANGUAGE PHENOMENA

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## ABSTRACT

Computational systems – in order to be constituted, implemented and become functional – demand the cooperation of different scientific fields that deal with legal informatics issues. At legal informatics, Computer Science, Computational Linguistics and Law itself there are examples of this interaction. Nevertheless, in general, there is a certain mutual ignorance between these sciences. The main goal of this research is to demonstrate that the analysis of linguistic phenomena is necessary to comprehend “human-computer” interaction and, consequently, considerations about language are important to reflect about the progress, the difficulties and the potentiality of legal informatics. To accomplish this aim, not only Computational Linguistics (that investigates the computational use of language in order to develop systems capable of recognizing and producing data through natural language) but other linguistics subareas will also be investigated. The comprehension of their objects helps us to understand challenges of the legal informatics development related to specific characteristics of Law – for example, specialized language and permanent state of change due to the intricate social relationship. One of these challenges is the viability in the future of judicial informatics not only as a source of documentation, organization and control of the judicial process, but also as a tool able to develop systems capable

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of producing decisions with an artificial intelligence (points such as the technical viability of artificial intelligence as a tool that could be employed on judicial processes, as well the ethics concerning the development of systems capable of judging and making decisions upon their own conclusions are some of the current issues in the debate). In conclusion, the understanding of communication between men and machine demands the study of the language mechanisms. In other words, we ought to reflect about the possibility of “teaching” the computer how to think. The Linguistics deals with problems that have important consequences on the study about the limits and the potentialities of the judicial informatics. It justifies an interdisciplinary focus, especially linked to the fundamental theories that are the basis of linguistic science. As this research has an interdisciplinary scope, the bibliographic review method is employed in order to investigate works about Linguistics, Computational Linguistics and legal informatics.

**Keywords:** Legal informatics; Linguistics; Computational Linguistics.

## Introduction

Interest about the relationship between machine and human beings had its very beginning in XIX century. The investigation about ergonomics and effects of the use of machines over their operators was motivated by the maximization of production. However, the study about the interaction between men and machine was systematized only after the Second World War. The research was expanded and nowadays involves human connection with any kind of system: computational, mechanical or even manual. It holds the attention of several knowledge areas, because it goes beyond ergonomics: besides people and technological devices, they also involve the type of activities that are going to be developed and the environment in its physical, organizational and social aspects (DIX *et al*, 2004; p. 1-5).

Inserted in this context of complexity, judicial computerization is day by day faster and irreversible. As a consequence



of that, this phenomenon entangles the professional of Law with other sciences such as computer engineering, logic, ergonomics, psychology and linguistics. All of them deal with the constitution, implantation and operationalization of computational systems, tools that are interconnected with the electronic judicial procedures. Therefore, because of this interdisciplinary characteristic, there is a necessity to apprehend basic parameters of these sciences, in order to make the law operator able to reflect upon potentialities and limits of the new technologies.

In this context, this paper has the objective of contributing to the discussion about the limits and potentialities of judicial information, with the exposition about basic theoretical premises of linguistics, as well as with questionings that this science brings about the use of language. It is important to point out that this discussion is essential to computerization in a general sense; however, when it is dealt about law, this question is yet more impacting, because the concerning about how judicial texts are interpreted is the fundament of Law: it aims not only the scientific rigor but also the interpretation of the juridical norm itself.

As a consequence, the reflection about computerization in judicial context is not restricted to procedural disciplines, but also involves important themes of law theory in a general sense and Law philosophy: juridical logic, interpretation of sentences, the relationship between these sentences and the external world, the (im)possibility of knowledge and the reach of truth. Furthermore, judicial computerization leads to the following question: can judicial informatics, besides the simple documentary informatics, with managing and controlling procedures, point out an informatics with devisor content? In other words, is it possible to develop systems that are capable of making decisions by themselves? This intention struggles with these questionings and the limits of language management.

## Contributions of linguistics to judicial computerization

Roberto Jose Vernengo states that “[...] lo cierto es que tenemos que partir del lenguaje, del discurso comunicativo”, because Law is a science “cuya manifestación es casi exclusivamente lingüística” (VERNENGO, 1976, p. 21).<sup>3</sup> This author, in his analysis about juridical phenomenon, starts with considerations concerning language. According to Vernengo (1976, p. 35), the language “en su sentido más lato, es un sistema de símbolos utilizados para la comunicación humana”<sup>4</sup>, made of sounds, graphics and gestures whose signification was assimilated by the human beings.

Naturally, the increment of human population has, as consequence, the spread of possibilities of incomprehension. The natural language could be vague and ambiguous, especially because of the large amount of formation rules. According to Vernengo, “los lenguajes naturales suelen ser suficientes para la comunicación normal, pero poco adecuados para comunicaciones que exigen precisión, economía, rigor (VERNENGO, 1976, p. 37)<sup>5</sup>.

Therefore, the necessity of artificial languages usage has emerged in some specific areas; for example, the juridical language or algebric equation symbols that do not have a specific utility for a daily basis communication, but are applied in circumstances where more precision is required. Vernengo (1976, p. 40) distinguishes the types of language: (i) natural language, that is used for ordinary communication and (ii) artificial language.

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3 Free translation from the author: “(...) it is certain that we must begin with the language, the communicative speech” because Law is a science which “is almost exclusively linguistic” (VERNENGO, 1976, p. 21).

4 Free translation from the author: “in its larger meaning, [the language] is a system of symbols utilized for human communication” (VERNENGO, 1976, p. 35).

5 Free translation from the author: “natural languages can be enough for ordinary communication, but inadequate for contexts that demand precision, economy and rigor” (VERNENGO, 1976, p.37).

Examples of artificial languages: (a) technical language, for precision and economy, and (b) formal language, for abstract relations between sign references (in this case correspond, for example, algebraic language, deontic logic and programming computation).

Thus, the question about language in juridical computerization not only involves the simple management of data and procedures, but also the changing of natural language and technical language into formal language, in order to fulfill the computers with the linguistic data that they need in such a logical and non-contradictory way (which demands semantic, syntactic and logic analysis of juridical sentences).

If the challenge of the man-computer interaction implies analysis of linguistic phenomena (including the judicial computerization), one of the sciences requested to contribute with its theoretical instruments is the Linguistics (science which object is the nature of language and communication and that works through formalistic, contextual, structural and functional analysis of the language). This contribution will be more effective with the comprehension about the object of study, the questioning faced by its subareas and the theoretical diversity.

About the linguistic studies field, AKMAJIAN *et al.* (2001, p. 5) says that fundamentally, it is concerned with the nature of language and (linguistic) communication. The author enunciates some subareas that make the analysis of structural components of language possible: morphology, phonetics, phonology, syntax, linguistic variation and linguistic changing. There can be mentioned as subjects that have, as object, functional aspects of language: pragmatics, psycholinguistics and neurolinguistics (AKMAJIAN *et al.*, 2001, p. 06).

Inside all this complexity and theoretical diversity, the approach of the linguistics area requires the apprehension of important premises that lead language studies (AKMAJIAN *et al.*, 2001, p. 6-8). In first place, the human language is governed by rules or

principles related to the pronunciation, the formation of words, the grammatical structure of sentences and meanings. These are the descriptive rules of language, that point out generalizations and regularization of various aspects of a language (which do not coincide with the prescriptive rules of the 'standard language', that prescribes the way the speaker should use the language). Another theoretical assumption is the ineffability – in other words, there is no limit about which type of things that could be said with the use of any language. There are strict principles that govern a system that do not have limits in extension – and this explains the possibility of generalization.

Alongside these premises, another is the unified phenomenon: linguists assume that it is possible to study human language in general and that the study of particular languages will reveal features of language that are universal (AKMAJIAN *et al.*, 2001, p. 06). These assumptions reveal that languages are different to each other only superficially; but, if they are deeply analyzed, denote surprisingly similarities at the level of complexity, in such a way that it cannot be said that there are primitive languages in opposition to developed languages. (AKMAJIAN *et al.*, 2001, p. 08). As a result, we can express any type of thought in any language (formal plenitude). If the languages are similar and follow certain universal principles (AKMAJIAN *et al.*, 2001, p. 08) then the comprehension of language results in comprehension of the human thought (AKMAJIAN *et al.*, 2001, p. 09).

These findings endorse the possibility of managing rules of language in order to provide the computational systems of logical data capable, for example, of programming automatic production of texts, automatic translators or systems able to solve logical problems. However, the frontier to this pretension is that language is not solved only through the manipulation of rules by the speaker, but through the context in which it is utilized as well. Thus, the complexity of linguistic phenomena leads to the neces-

sity of not only structural and formal studies of the language, but also functional.

In order to solve this, linguistics is divided into subareas in which a linguistic phenomenon is analyzed according to certain assumptions and theories. As reported by Borges (2004, p. 21), these subareas, individually, do not aim to study linguistic phenomenon as a whole. However, with the analysis of some of them (object, theories, assumptions and open questions) it will demonstrate the complexity to be faced on judicial computerization at the manipulation of linguistic data, beyond the simple documental management.

Only in the 20th century, theories of Ferdinand de Saussure gave a scientific status to linguistic. His structuralism has taken away “all the considerations of social, historical and cultural nature in observation, description, analysis and interpretation of linguistic phenomenon”, giving more importance to structural character (ALKMIM, 2006, p. 23). In other words, for Saussure’s structuralism, “it is only possible to bring linguistics a *science* status demanding systematic structures underlined the linguistic behavior and being limited to the study of these structures” (BORGES NETO, 2004, p. 53). Calvet points out that this is a methodological problem in Saussure’s structuralism theory, because the author, at same time that he endorses that language is a social institution, he priorities formal analysis of language without justifying this option theoretically (CALVET, p. 13-16).

Based on distinct methodological premises of Saussure, William Bright, in 1964, defined linguistic diversity as the sociolinguistics object (ALKMIM, 2006, p. 28), which ought to considerate: social identity of the speaker (for example, differences between social class and gender); social identity of the receptor; social context; and the social judgment distinct of those that speakers do about their own linguistic behavior and of others (linguistic attitudes). In this sense, sociolinguistics would be

presented as a counterpoint to the formalism that is represented by Chomsky's grammatic (that will be explained after), as well to Saussure's structuralism. According to Alkmim (2006, p. 31), the Sociolinguistics object is the study of the language spoken, observed, described and analyzed in its social context, in other words, in real situations of use.

Therefore, according to Camacho (2006, p. 51), language analysis has to consider that, in determined contexts, there are people who read the verb with the final 's' in the third person of the singular, and others that do not do that. This variation does not happen in a random or arbitrary way for the speakers, but they are marked by motivations inherent to the system (that, for example, does not accept the elimination of the "s" of the word tennis). The variationist sociolinguistics analyzes these phenomena and the social and systematic causes without valuable judgments, because language variations ought to be understood as "alternative forms that a linguistic system disposes to the speaker" (CAMACHO, 2006, p. 69).

However, in spite of sociolinguist William Labov's affirmation about that it would not be possible to distinguish the general linguistics and the sociolinguistics – that would consider only the social aspect of the languages, and assure that "sociolinguistics is linguistics", (CALVET, 2002, p. 32-33) – other models of analysis were built. Chomsky's generative Grammar (at end of the 1950) is one of them. According to Berlinck *et al* (2006, p. 209-211), Chomsky's studies follow the idea of an inactist basis of language, because the human being would have one Universal Grammar (UG), thus, an internalized knowledge about an specific language (specific linguistic principles of the human species would be, then, a genetic gift). Chomsky's theory had distinguished "competence" (the internalized Grammar of the speaker) and "performance" (the concrete use of this internalized knowledge) and proposed the so called "model of principles

and parameters”, that conceives human language as a system constituted by universal principles and by variation parameters that specify the properties of particular languages.

Then, variation parameters would be already predicted by the Universal Grammar and would be determined according to the peculiarities of each language (BERLINCK *et al.*, 2006, p. 214-215). The objective of gerativism is the study of properties of this Universal Grammar and in order to reach it, it uses some notational resources (structured through a form of parsing tree or brackets, that is one of the tools used by the computational linguistics to formalize the sentences in order to transform them in data able to be transferred and worked in computational languages).

However, the functionalism, another theoretical line, contradicts the premises of the gerativism. According to it, language is a non-autonomous system that has its origin in the necessity of communication between the members of a community (BERLINCK *et al.*, 2006, p.211).

These studies consider the speaker, the receptor and the communicative needs of linguistic community. The sentence ought to be analyzed with the semantic and discursive elements; that is, the context should not be ignored. Then, tasks that are apparently simple show their complexity. For example, the attribution of meaning to a single word. According to Oliveira (2006, p.17), we can affirm that semantics aims to describe the ‘meaning’ of words. The problem with this concept is to define what means ‘meaning’. This is because the meaning surpasses the frontier of linguistics because it is strongly tied to the knowledge issue. Pertinent questions are: is the meaning a casual relationship between words and things? Would it be a mental entity? Does it belong to the individual or to the community, to the public domain? (OLIVEIRA, 2006, p. 18). Consequently, the issue about the relation between language and world is connected to the question about the (im)possibility of knowledge.

Oliveira (2006, p. 18) points out that each one of these theories works with the 'meaning' in a different manner. Saussure's structuralism, for example, defines meaning as an 'unity of difference' – so the meaning would not have connection with the world, but only with a structure of difference. For the so called formal semantics, the meaning is a complex term that can be divided into two parts: the meaning and the reference – the meaning of a name, *teacher's table*, for example, is the form of presentation of the object/reference teacher's table (OLIVEIRA, 2006, p. 18). On the other hand, for enunciation semantics, the meaning is the argumentative play created inside the language and by it. *Table*, according to Enunciation Semantics, means the several possibilities of argumentative entanglements on which the word may take part. (OLIVEIRA, 2006, p.18).

The same way the meaning of the word 'meaning' is discussed, there are also several studies about language ontology. In formal semantics (Frege e Bertrand Russel are important names in this area), the language is a medium to reach the truth that is out it (so an objective knowledge of the world would be possible). The enunciation semantics, on the other hand, states that language constitutes the world: Ducrot says that we do not talk about the world, we talk to construct the world and with this world try to convince our interlocutor about our truth, truth created by and inside our interlocutions (OLIVEIRA, 2006, p. 28).

Then, semantic studies present the difficulties that should be overcome in order to have a plain communication between man-machine, because the attribution of meaning is already an open question both in linguistic studies and philosophy. The computational linguistics has as object of study the software construction and specific computational systems (that are managed through the artificial language) able to interpret or generate information in natural language (OTHERO; MENUZZI, p. 22-24). The computational linguistics development had the contribution



of knowledge of many linguistics areas, as well as studies of these areas: informatics, logics, artificial intelligence, mathematics<sup>6</sup> among others.

The computational linguistics has three main fields of research (BARANOW, 1983, p. 31): (a) automatic text processing (from dictionary creation until automatic production of text); (b) automatic information recovery through linguistic material stored in the computer (possibilities from information recovery until automatic analysis of the content; and (c) automatic question-answering system (artificial intelligence).

The computational linguistics can also be analyzed with the sub-division of its object into: corpus linguistics, which deals with the study and creation of databases that have natural language samples; and natural language processing (NLP), that are directed for *softwares* construction and specific computational systems, as automatic translators, *chatterbots*<sup>7</sup>, *parsers*<sup>8</sup>, automatic recognition of voice, automatic generators of abstracts etc. (OTHERO; MANUZZI, 2005, p. 24). Even though Computational Linguistics acts in the between of science of information and linguistics, it is important to point out that the troubled inter-relationship between these two sciences is caused mostly by “the expectations that Linguistics cannot or may never be able to fulfill” (BARANOW, 1983, p. 1).

This verification – mentioned above in this paper – concerned about the complexity of language, serves as an impulse to interdisciplinary research as well as an incentive to have a realistic sight to the limitations of language, under which the Judicial

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6 On the contrary of what could be thought, Mathematic Linguistics also, and mainly, works with the description of linguistic phenomena through natural or real numbers. (BARANOW, 1983, p. 30)

7 *Chatterbots* are softwares developed to interact with human users through dialogues in natural language in the written modality. These softwares are still limited by their databank and repeat sentences or are contradictory. (OTHERO; MENUZZI, 2005, p. 35).

8 *Parsing* is about automatic (or half-automatic) interpretation of sentences from natural language by computer softwares known as *parsers*. (OTHERO; MENUZZI, 2005, p. 39).

computerization has to be submitted. Despite the fact that it is not the central object of this research, studies involving the artificial intelligence area (field that also analyses the reproduction of language processes) prove that the possibility of reproduction of human thought by a computer is controversial, in such a way that, through programming and logics, it would replace human reasoning or take decisions autonomously. So, at this moment, it can only be said that the use of artificial intelligence can be a tool that can help man in decisive acts (that would be enormously useful if it is dealt to procedural rationality).

After all that was exposed here, the conclusion is that inside the confluence between computational science, law and linguistics, there is a mutual lack of knowledge that must be overcome. Besides that, it is important to point out that the consciousness about the limits of the technology leads to a critical vision concerned to the hypothetical confront between efficiency and justice. It is important to think about the fact that the celerity would not be thought as the main goal of Law. As can be inferred of the studies of language, the justice does not dispense human intervention, the only one with the sense – until otherwise proven, of comprehending between the lines, where the details, often decisive, of the concrete cases are hidden.

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# ***e*-CITIZENSHIP: OBSERVATIONS FROM THE THEORY OF COMMUNICATION OF LEE THAYER<sup>1</sup>**

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## **ABSTRACT**

The present text parts of a theoretical interdisciplinary, aiming to establish a vantage point in differentiated virtual communicational processes and their relationship with the office of the *e*-citizenship. Starting from the Theory of Organizational Communication, it seeks to understand the communication as a process that counts with four levels of analysis, as proposed by Lee O. Thayer. This way, the issue of *e*-citizenship will be seen from the observance of a “zone of overlap” of various levels of communication and their combinations. In fact, the establishment of an understanding of the relationship between communicational *e*-citizens and *e*-administration allows discovering the challenges of an effective expansion of a (virtual) democratic space.

**Keywords:** *e*-citizenship; *e*-administration; Cybernetics; Communication; Lee Thayer.

*“There is no subject so old that something new cannot be said about it”.*

Fyodor Dostoevsky [1821-1881]

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1 This text consists of the extended version of the summary and exposition of the author, entitled *E-citizenship: Observations From the Theory of Communication of Lee Thayer*; in *GT E-Justice and governance*, in *XXVI World Congress of Philosophy of Law and Social Philosophy – Human Rights, Rule of Law and the Contemporary Social Challenges in Complex Societies - IVR 2013*, held from July 22<sup>nd</sup> to 27<sup>th</sup> 2013 in Belo Horizonte, MG, Brazil. The author thanks Professor Flávio Catarino sincerely for the translation into English.

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## Introduction

The famous words from Dostoevsky justify the (perhaps risky) salvaging this text will undertake: from the Theory of organizational communication (Lee Osborne Thayer) search for theoretical communicational inputs that promote a complex reflection about *e*-citizenship. Originating thus, from forgotten theoretical stimuli harbored in the decades of 1950-1970, we comprehend the communication as a dynamic process underlying the existence, the growth, the modification and the behavior of all living systems (individual or organizational), through means of which the system relates to its environment and with each other. Our main objective is to verify the applicability of the conceptual model of organizational communication of Lee Osborne Thayer to an interdisciplinary theorization of *e*-citizenship.

The following text will be divided into two parts. In the first, entitled “Fundamentals of Communication theory on Lee Thayer” [1], the foundations of this barely remembered theoretician of organizational communications will be based. Thereafter, we will approach the *e*-citizenship: limits and possibilities in a communicative perspective” [2]. In this topic, the problematic of *e*-citizenship will be viewed in the communicational perspective of Lee Thayer, observing thus the “zone of overlap” from the many levels of communication and its possible combinations.

It is understood that a social-communicational comprehension about the existing relationship between *e*-citizens and the *e*-management makes it possible to detect the complexity of elements of the current technological society and its challenges when it comes to an effective extension of the (virtual-communicational) democratic space.

## 2. Fundamentals of the Communications Theory in Lee Thayer

Lee Osborne Thayer was the director of the Center of Advanced Study of Communication of the University of Missouri, in Kansas City, and he was also a member of the Council of National Society for the Study of Communication (USA). Renowned theoretician in the communications area, Thayer became very known on Management for his organizational communication theory, doing researches marked as interdisciplinary between the years of 1950-1970.

Thayer recognized that we can find, in the study of the nature of the communications in the society, the answer of how communication sediments its own *social structure*. Lee Osborne Thayer proposed us to think about communication from four levels of analysis. The communication may be considered a dynamic process underlying the existence, the growth, the modification and the behavior of all living systems, whether subject or organization through a relationship with the environment, with others and their own parts which will be established (THAYER, 1979).

Once such concept is agreed on, we pass onto the analysis of the four levels – *intrapersonal*, *interpersonal*, *organizational* and *technological* (THAYER, 1979, p. 47). To Thayer, it is necessary to recognize, initially, the existence of the [1] *Intrapersonal level*, from which is studied the behavior of the subject, namely, what is going on “inside” people during the development of the communicative process. Thereafter, the level [2] of *interpersonal communication* studies, basically, the way certain subjects affect each other mutually over the intercommunication and, thus, regulate and control each other. The next level [3] is the *organizational*. It is about the data system networks that link the members of a certain organization among themselves and “provide the means of which the enterprise relates to the environment”.

Finally, the ultimate level of analysis is the [4] *technological*. To Thayer, when the center of attention rests on the technology of communications, “we start worrying about the equipment, about the hardware and the formal software to generate, store, process, translate, distribute or exhibit data”. Note that Thayer doesn’t neglect the *human element* in this plane of analysis, because to him, “the ears and eyes must be considered an aspect of the communications technology, along with the television and the modern personal computers” (THAYER, 1979, p. 48).

Certainly any theoretical initiative about reflecting on the aspects that shape the *e-citizen* must pause on the *technological* level, what doesn’t prevent, however, that it rests its attention, for example, in aspects of the second level (*interpersonal*) – even because the technological level *comprehends* all the others. In such perspective, the communication must be seen, initially as a *cognitive* process originating from the internal level (*subject*), in direction to the external plane (*social*), generating thus reflexes on the environment. And strengthen up the theoretical proposal of Thayer that does not address these levels in a tight manner, for they overlap, intertwining each other.

Moreover, thayerian distinction of the communication in *instrumental* and *consummatory* finds echo in the philosophy of language of John Searle (1973, p 155). Lee Thayer understands that part of our communication serves as an “end and itself”, even if sometimes we can produce or receive information without any intention, direct or indirect. In other words, at times we can communicate in a “consumable way”, that is, “we can consume part of our own behavior and of another person’s, without anything else in mind but its mere consumption [...]” (THAYER, 1979, p. 52). However, if on the one hand John Searle emphasizes the utterance of who speaks and their intentions, Thayer is not distant by explaining what he understands by *instrumental communication*: it is about that communication with an objective in mind, in



other words, *intentional*, “because we cannot neglect the fact that communication always generates some consequence, even when said that consequence is not sought out” (THAYER, 1979, p. 52).

Therefore “to rule the behavior” of others it is only possible *instrumentally*, since the *instrumentality of communication* starts, nowadays, to coat itself of a *technological drapery*. Not that the computers themselves “communicate between each other, but they start being used to increase and amplify the processing capacity and production of information of men. For Thayer, the computers do not transport data from one place to another, as great part of previous technological innovations; processing of data. “They are projected and programmed for reducing, analyzing, synthesizing, reorganizing and for, in many ways, exhibiting or *publishing* ways or series of data that cannot be, in other way, available to us, or can require considerably more time for its production or processing” (THAYER, 1979, p. 283).

Thayer, at the time, outlined a conception of compatible computing with what we understand as a computer today. Moreover, it is the interface man/computer that configures the symbolic-communicational space presently known as cyberspace. Pierre Lévy (1999, p. 92) understands as *cyberspace* that “space of communication open by a worldwide interconnection of computers and the memories of said computers”.

We understand that a complex mix arising from the virtual interaction (through the Internet) between individuals is situated in a “zone of overlapping of the many levels and their combinations” (THAYER, 1973, p. 116).

### **3. e-Citizenship: Limits and possibilities in a communicational perspective**

To comprehend the *e-citizenship* (MIAILLE, 2003; PÉREZ LUÑO, 2004) we must establish before a comprehension

about what is a *political participation* coated *technologically*. Edouard Bannwart (1996, p. 123), on unveiling the configurations of the “multimedia society”, shows us how we can understand the intervention in matters of opinions and decisions through *political participation* in the most diverse areas of public life, what substantially reconfigures in a context of which the technological advances offer new opportunities in the plane of political participation. We would be, in this context of technological advances, therefore, before a “new citizenship”? Michel Miaille (2003, p. 16) helps to answer this question, by confirming that “whether about a new citizenship to come or an already committed citizenship, everything depends on the type of comprehension that we testify in relation to what is new about this citizenship, namely, the most contemporary technology that is allowed to exercise”. The “contemporary technology” highlighted by Miaille can be seen as a powerful instrument [see, for example, the handouts of the Web 2.0 (O'REILLY, 2011)] that must, according to Sanchez, be accompanied by a “capacitation of society, especially civil society, to understand it and use it according to democratic values. Otherwise, there will be just a vertical transfer of power – from bureaucracy to the government – through a better control of information” (SANCHEZ, 2003, p. 91). This capacitation is, thus, a way of overcoming the present mismatch between “physical society” and the “technological society”, in a way that the inception of new technological devices becomes not only useful, but closer to each citizen's reality.

Without further ado, let us pass, thus, to observe the problematic of the *e-citizenship* in the communicational perspective of Lee Thayer. For such, we need to go back to the referred “zone of overlapping” of communication levels and its combinations. We mentioned that the surface of contact represents a symbolic point in which is developed the complex communicational web; in it, the technological level covers the other levels (intrapersonal,

interpersonal and organizational). In the symbolic area we can observe and comprehend how the interaction/communication mediated by computer is developed.

Every interpersonal relationship can be seen as an organization. Today, the *natural organizations* (individuals in organized interactions, or societies) structure and regulate themselves from technology coated relations. However, there is, in this point, a communicational problem: the *compatibility*. Technologies (notably the information systems) *need to be compatible to the systems to which they link to be considered efficient*. Accordingly, an example is the necessary harmony of the user's language with the computer's language, imperious condition for an efficient relation man/machine (THAYER, 1979, p. 200).

The *e-citizen* can be considered that citizen that appropriates and makes use of digital tools that lead him to an *effective interaction* and political participation in the organizational-technological plane of public management. Or according to Ferreira [et. al.], "from the moment in which citizens have the right to access public services to educate themselves and to communicate through TIC, it could be said that in the *e-citizenship*, there is a way of exercising citizenship, with support of information technology and communication." (FERREIRA et al., 2011, p. 22).

Regardless, today we do not have *e-citizens* operating in line, homogeneously, consisting of digital supports that make them able to interact with public management. To effectiveness (practical) of the *e-citizenship*, we must remember that the citizenship itself must count on a "way to be and live marked by the ideals of *equality* and *dignity*, as well as *liberty*" (MIAILLE, 2003, p. 26). But we could also add: marked by the idea of *compatibility*. It is about compatibility between the services offered *online* by the public management and the sociocultural reality of Brazilian citizens. Rodegheri, Santos and Oliveira (2012, p. 110) address the necessity of the existence of an "annexation of the

space offered by the *web* as an alternative way of the exercise of democracy, not substituting the current model, but reinforcing it and deploying a new medium, in which stand the ease of use, access and transmission of information”.

But we reinforce: not necessarily the new Technologies incorporated by the public management are synonyms of “easy and dynamics services”. Ease of usage will only exist if there is a *compatibility* and *incorporation* of these technologies by their recipients: the citizens. On the other hand, we do not doubt that, on its own the virtual (*communicational*) space opened by the web, when incorporated by the public management, strengthens, amongst other factors, the visibility, allowing a bigger possibility of controlling the public acts. As well sustains Limberger (2007, p. 216), such fact enables us to talk (without utopias) in the observance of the *principle of publicity and the right to be informed* of the citizen, on which rests the legal system in the Democratic State.

This transparent, publicized and coated by new technologies administration is being called “*e-management*”, for it counts on a plentiful set of activities, carried out through the internet, in which the citizens can consult, inform themselves, and carry out formalities and online transactions with governmental organs. This way, governs seek to offer, with such activities, more comfort and haste to e-citizens, eliminating thus the middle-man between said entities and the State (SANCHEZ, 2003, p. 93).

The brand of the modern public managements, since the availability of the new information technologies and communications, is the [attempt to offer citizens] usage of these technologies, in an aggressive way, be it to offer services of informational nature, or to give support and favor the supply and the utilization of the public services (FUGGINI; MAGGIOLINI; PAGAMICI, 2005, p. 301). In other words, there is a pretension to coat the relation between citizens and public management in a technological (communicational) suit.

We understand that a communicational comprehension of the existing relationship between *e-citizens* and the *e-management* allows us to recognize the inherent complexity in the overlapping of the many levels of communication analysis, especially from the point of view of three (of four) levels: interpersonal/organizational/technological. The common point between the different levels is that all of them deal with communication systems (or information processing), in which operations consist in the *conversion of data into information*. The intertwining of the factors that compose the unique levels of analysis leads us to detect the existence of a mismatch between the *technological* and the *interpersonal*, so that the technological increment coating public management still requires an effective digital inclusion of their management in its broadest sense: cultural, economic and technological.

## Conclusions

This text had as its basic objective to establish, interdisciplinary, a communicational-social comprehension of the *e-citizenship*. The “zone of overlapping” of the many communication levels, seen from Thayer’s point of view, can show a symbolic point where the complex communicational web can unveil between human beings (on the intrapersonal, interpersonal and organizational levels) and machines (technological level). In a context in which public management finds itself, gradually taking advantage of the digital Medias, ideas like visibility, transparency and control of the public acts can become a possible reality. Notwithstanding, this will only be possible if the *e-management* is marked by the referred aperture and the horizontality – recognizing that the public management and citizens find themselves in the same symbolic communicational plane (cyberspace).

Finally, we sustain that the perception of the exchanges occurred between *e*-citizens and *e*-management in the cyberspace can be better unveiled from the plot *e*-citizens/*e*-management, perceiving thus not only the complex aspects that coat the *technological communication*, but recognizing that “by amplifying in the internet, the public space aspires sociability, private life and the expressivity of individuals” (CARDON, 2012, p. 105).

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