Understanding Judicial Websites: An Exploration of Portals in the States of Mexico

Rodrigo Sandoval-Almazan
Universidad Autonoma del Estado de México
rsandovala@uaemex.mx

J. Ramon Gil-Garcia
University at Albany, State University of New York
jgil-garcia@ctg.albany.edu

Abstract
Executive agencies are not the only entities generating websites and using other information technologies. The judicial branch is also making progress toward developing better portals to improve their processes and strengthen the relationships with citizens and other stakeholders. In fact, most judicial agencies have created their own websites with different levels of technological sophistication and functionality. However, very little is known about the structure, usability, content, and impacts of these websites. Based on previous research developed in 2010, this study proposes a framework to measure and evaluate judicial websites and performs a pilot test of the instrument in 20 states in Mexico. Implications for research and practice are derived and ideas for future studies are also suggested.

1. Introduction

The use of information and communication technologies (ICTs) has spread among public administrations around the world. Currently, most agencies, departments, and government offices have some relationship with technology. Government use of ICTs, particularly the Internet, has been described as e-government, which includes both services and policies [1]. However, these e-government efforts and the expected transformation from them have primarily been studied at the national level or in government offices dependent on the executive branch (led by a president, governor, mayor, etc.) [2], [3]. These analytical efforts to assess electronic government have used different perspectives and very diverse indicators, many of them developed in the last decade [4]. Recent literature clearly shows the evolution of e-government [5] from an initial focus on citizens [6–8] to more general e-services and interoperability issues [9] and, more recently, to mobile government [10], [11]. There are also specific studies about the implementation of electronic government at the state level and its evolution [12].

Modern citizens make use of government information regardless of its specific source. Portals and websites from the executive, legislative, and judicial branches are—or should be—resources designed to meet citizen needs. In order to meet these increased information demands in an era of open government, all levels of government must share information and open their files to one another, raising key issues about how they will share relevant information and what technical features need to be present for each type of resource. All branches of government interact with citizens, businesses, and other stakeholders, but the types of interactions are different and particular to the needs, interests, and main activities of each stakeholder.

We chose to study judicial branch websites because we think that they are important and that they require more research than currently exists. There have been a few previous attempts, but more research is still needed and this study attempts to start filling this gap [1]–[3]. Based on a comprehensive review of the available literature and a pilot evaluation of 20 judicial state portals in Mexico, this paper explores the characteristics of judicial websites, highlights some differences between judicial and executive branch websites, and proposes an assessment model for judicial websites. We hope this research contributes to the start of an academic discussion about state judicial websites and how the judiciary system as a whole is using ICTs to improve its performance and relationships with clients.

Our paper is organized in six sections, including the foregoing introduction. Section two is a literature review on judicial websites and website assessment. There are very few studies that attempt to measure and evaluate judicial websites, but there are some that try to identify the main characteristics of these sites. Based on the available studies, we propose a set of variables and features for an assessment of judicial websites. Section three describes our methodology. As
mentioned before, this paper is based on a review of the existing literature and a pilot study of 20 judicial state websites in Mexico. Section four explains our main findings in terms of the proposed features in our assessment model and other important characteristics such as performance and design. Section five presents a discussion of the findings and highlights some differences and similarities between judicial websites and other government websites. Finally, section six provides some concluding remarks and suggests areas for future research on this topic.

2. Judicial Websites and Assessment

This section outlines our review of recent literature on judicial websites and website evaluation and assessment. At the end, we present our proposed framework and the variables it includes. This model will be tested using a sample of 20 state judicial websites and the results are provided in the main findings section of this paper.

2.1. Judicial Websites

The use of information technologies in the judiciary has a long tradition. Baca and colleagues [13] promote the use of information systems from the private sector into the court systems. Historical research from Ariel [14] about the federal judicial website in the U.S. describes the changes and transformations to that website over time. Another similar study that analyzes the use of IT in the judicial systems of Norway, Netherlands, Italy, Australia, Venezuela and Singapore provides a great collection of cases and best practices in this field [15]. Glassey [16] introduces the concept of the legal knowledge system to manage the legal process in a German county.

Velicogna and colleagues [17] study the Italian experience of introducing websites into the judicial system and the related impact on legitimacy and trust. In another case study, Schmidt [18] analyzes the computerization of judicial processes and the trend toward a digital world in the Netherlands. Trochev [19] shows some preliminary examples of the use of websites in Russian courts. A different ICT adoption perspective is the implementation of information management systems in the courts for example Gordon [20] proposes legal knowledge based-systems (LKBS) to support the implementation of the technology on life cycle of legislation.

On the American continent, Andrade and Joia [15] analyze the role of different actors involved with strategic planning and the definition of ICT strategies in the Brazilian justice system, particularly focusing on the central role of the National Council of Justice (NCJ). More recent research is focused on processes or bureaucratic tasks that can be automated with information systems [21], [22]. However research by Zuniga and Murillo [23] comparing the implementation of Quality Management Standards for district courts and courts of appeal in Costa Rica and Panama through a process-performance tracking and improvement tool is the most recent example of this trend in court systems.

Looking to research about governance or policies among courts that use ICTs, an Argentinean study from Lezcano and Oliveira [24] discusses the electronic ombudsman as a legal institution that regulates people and their links with technology in the information society era. An interesting report comes from the Justice Studies Center of the Americas (CEJA), which conducts a study using the Accessibility Index of Judiciary Information to assess and rank 34 nations of the OCDE using variables such as schedule for sessions, sentence communication, rules, statistics and basic information (including judges’ wages, curriculum vitae, and background); in 2013, Chile was ranked first [1].

In Mexico, research about judiciary websites addresses how they differ from e-government implementation for local and state executive websites (Citation reserved for blind review). This research exposes three main trends in the use of ICTs in the judiciary level of government: (1) website development, (2) information systems that automate processes and improve bureaucratic tasks, and (3) the introduction of technology to improve policies or governance. The purpose of the current study is to contribute more knowledge about the first trend of implementing court websites.

2.2. Evaluation and Assessment of Websites

In defining a website, Gant and Gant [25] state, “A Web portal serves as the integrated gateway into the state government websites and provides visitors with a single point of contact for online service delivery within the state.” Most government portals contain an interesting mixture of applications [26]. E-government portals have evolved during the last few years, from unidirectional sharing of information and data with citizens to more interactive engagement. Recent technological innovations such as Web 2.0 applications and tools have, at least in part, caused this evolution. E-government portals need to continuously evolve and adapt to new technological features. This evolution has also transformed the main functions that websites can
perform and the way citizens and other social actors can interact with them [27].

Government websites can be considered communication systems that operate via a computer and the Internet (Sandoval-Almazan & Gil-García, 2010). There are different models that explain the development and evolution of government websites [26], [28]–[30]. One of the most frequently used approaches to assess e-government portals is the evolutionary perspective, which creates stages and analyzes e-government initiatives according to the characteristics and technical features found in these stages (i.e., presence, interaction, integration). The evolutionary approach is useful to understand government websites because it attempts to measure the degree of innovation and provides guidance for developments and improvements.

In fact, research into the limitations of this approach, which Sandoval and Gil-García [12] conducted, demonstrates that evolutionary approaches are useful to understand and evaluate e-government, but have important limitations: (1) e-government stages are not mutually exclusive; (2) e-government stages are not necessarily consecutive; and (3) the linear progression assumed in evolutionary models is problematic when applied to some technologies. Evaluating e-government initiatives, including Web portals, using an evolutionary approach is difficult because they can have characteristics and features identified with multiple stages. Nevertheless, we use this approach for our research because we think is one of the best options developed thus far to measure government portals.

Other scholars have also assessed websites [31–33]. Some researchers focus on specific areas such as tax websites [34–35], usability [36]–[39], assessing municipalities [40–41], and accessibility [39], [42–44]. However, most evaluation is regular focused on executive-level websites, not legislative or judicial websites.

2.3. Assessing Judicial Websites

Based on the review of existing literature presented in the previous two sections and our previous experience assessing e-government portals, we designed a model to assess judicial websites (see Figure 1).

The four components are listed below and briefly described in the next few paragraphs.

1. Information
2. Interaction
3. Integration
4. Participation

1. Information (INF). This component assesses the organization of information on the website, the type of information provided, whether information is up-to-date, transparency and open data, and finally accessibility.

2. Interaction (INT). This component evaluates the different methods available to contact public officials (judges, ministers, and website managers). The site's information search capabilities, and whether information is dynamic (e.g., if the website is open or restricted to certain stakeholders).

3. Integration (INTG). This component assesses the extent to which information is vertically integrated (content is of the same type but from different agencies or different levels of government) or horizontally integrated (different content from different unit within a single agency or government).

4. Participation (PART). The purpose of this component is to assess what kind of participation tools the website provides for its users—lawyers, citizens, etc.—in the form of blogs, forums, chats, social media, and tags, among others.

![Figure 1. Assessment Model for Judicial Websites](image)

There are also some components that are not considered part of the ranking measurement in previous studies, but we think they are important to assess government portals: performance and design. Performance (PER) addresses the download speed using PINGDOM, global ranking using ALEXA, and global performance without broken links. Design (DES) is an evaluation of the website's overall organization, including titles, figures and photos, breadcrumb navigation, formats, and control design. The reader is invited to reflect on all these components.
in terms of what are the most important features of judicial websites.

3. Research Design and Methods

The study of judicial websites is a clear example of internet research [45]. Our object of study is not physical and constantly changes, which is why our results can change over time [46]. Our larger study includes an online data collection using a revised instrument with 87 items distributed among the four main components and their corresponding variables (see Table 1). For the pilot administration, the sample consisted of 20 judicial websites randomly selected from the 32 states in Mexico.

Data collection for the pilot study was conducted during May and June 2014. Each website was visited by one researcher in a 20-30 minute session to collect data according to all the items in the questionnaire. Each item was measured using a dichotomous variable (1, 0) and all the items within each component were added to generate an overall score for the component. The final data were reviewed and coded by the research team before the analysis was performed.

<table>
<thead>
<tr>
<th>Component</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information</td>
<td>Published statistics; updated information; services catalogue; last update; internal rules; budget; wages; phonebook</td>
</tr>
<tr>
<td>Interaction</td>
<td>Webmaster email present; chat 24/7; search engine; alternate search; information request form; personalization</td>
</tr>
<tr>
<td>Integration</td>
<td>Mobile integration; link for municipalities and federal judiciary; portal access with password; homogenous design; information from edicts, sentences and bills online by date</td>
</tr>
<tr>
<td>Participation</td>
<td>Blogs; online forums; chats; mobile apps; Facebook &amp; Twitter account; tagging</td>
</tr>
</tbody>
</table>

Table 1. Components and Variables for 2014 Ranking

4. Main Findings

Our research findings are divided in two parts. The first part presents the ranking of judiciary websites along the four main components (information, integration, interaction and participation), while the second part analyzes the performance and design components of the websites. These results are preliminary because they do not take into account 12 out of 32 states and the ranking position and results may change when considering the complete set of states. We decided that it is more important from the perspective of the legal user—or any citizen—to focus on quality content and the information sharing capacity of the agency rather than speed (performance) or usability (design), which is why we do not consider these last two components as part of the ranking. Nevertheless, we assess both components in a different section for the reader to have this information too.

4.1. Judiciary Websites Ranking 2014

Our ranking is obtained by finding the average of the grades from each component (information + interaction + integration + participation)/4). Accordingly, the judiciary website that obtained the highest integrated average was Puebla (57.52). Nuevo Leon (55.08) placed second and in third place was Quintana Roo (52.50). While Nuevo Leon and Quintana Roo had high scores on the information component (67 and 60, respectively), Puebla had the highest score for the participation component by far. The differences among the top three are not prominent and could be from one or two items that were not present from the evaluation requirements (See Table 2).

Another section to be explained is the total average obtained (49.97) in the sample. More than half of the judiciary websites analyzed are above this average (60%), which is an important trend for Mexico's legal system. However, 40 percent of the websites are below this average, suggesting important gaps to be filled. Maybe the most important is the participation section, in which Aguascalientes and Tlaxcala had no tools to allow for participation from users. Sinaloa gets a zero also on the interaction component.

In general terms, there is not a clear pattern in terms of any geographic region. We have a central state in the first position (Puebla), a northern state in second position (Nuevo Leon), and a southern state (Quintana Roo) in the third position. The rest of the states in the table show a similar pattern, without highlighting any particular geographic region as presenting overall higher scores and rankings.
An interesting point of focus is to analyze the lowest ranking websites. Jalisco, Sinaloa and Tlaxcala, each received just half of the points (33, 32, 25 respectively) that first place Puebla obtained in the study (57). Tlaxcala received 62 on the information component, two points above the 57 that Puebla received on the same component, but fails on interaction and participation (6 and 0 respectively), which impacts the total score for that state’s judiciary website.

A closer analysis of each component reveals interesting patterns. For example, there is a tie for first place in the information component between D.F. (Federal District - Mexico City) and Aguascalientes, both with 72 in the ranking. This means that those two state judiciary websites have more quality information or better-organized data than other judicial websites in the country. In this component the average was 66, and only 40 percent of the evaluated sites are above this. The rest of the judicial websites has some lack or absence on this very important section that organizes all of their website activity.

The interaction component allows users to communicate with public officials, in this case judges, ministers or the website managers. This component had an average of 50.49, the judicial website with the highest score is Estado de Mexico (64) and the lowest is Sinaloa with zero. This lack of interaction could be normal for this kind of website, however it is also linked with a lack of opportunities for participation from lawyers, court officials or judges.

The integration component is complementary to the information component. The two states with the highest integration scores were Veracruz and Nuevo Leon, each with 88, while the average on this component is 79 and only 40 percent of the websites are above average. There is a wide divide between Veracruz’s score of 88 and Tlaxcala’s last place score of 33, suggesting an important area for improvement.

### Table 2. 2014 Ranking of Judiciary Websites in Mexico

<table>
<thead>
<tr>
<th>#</th>
<th>STATE</th>
<th>TOTAL</th>
<th>INF</th>
<th>INT</th>
<th>INTG</th>
<th>PART</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Puebla</td>
<td>57.52</td>
<td>59</td>
<td>47</td>
<td>58</td>
<td>67</td>
</tr>
<tr>
<td>2</td>
<td>Nuevo Leon</td>
<td>55.08</td>
<td>67</td>
<td>43</td>
<td>88</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>Quintana Roo</td>
<td>52.20</td>
<td>60</td>
<td>48</td>
<td>68</td>
<td>33</td>
</tr>
<tr>
<td>4</td>
<td>Veracruz</td>
<td>51.62</td>
<td>50</td>
<td>44</td>
<td>88</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>Estado de México</td>
<td>50.85</td>
<td>62</td>
<td>64</td>
<td>78</td>
<td>0</td>
</tr>
</tbody>
</table>

The participation component reflects whether users are able to interact with information, as well as to communicate it or share it using social media tools or forums. This component is the one that needs more support from judiciary website administrators; the average score is 28, with the highest value of 67 in Puebla and second place is Queretaro with 47. Between the two is a difference of 20 points and between Puebla and Tlaxcala—last place—is 67 points of difference. Most of the judicial websites lack important tools that enable users, lawyers or citizens, to use their information and share it with others.

### 4.2. Judiciary Websites: Performance & Design

The performance and design of judiciary websites are complementary, but also relevant individually. The
main results are organized by performance (PER) and appear in Table 3.

<table>
<thead>
<tr>
<th></th>
<th>STATE</th>
<th>PER</th>
<th>DES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Durango</td>
<td>560</td>
<td>67</td>
</tr>
<tr>
<td>2</td>
<td>Aguascalientes</td>
<td>364</td>
<td>78</td>
</tr>
<tr>
<td>3</td>
<td>Veracruz</td>
<td>250</td>
<td>89</td>
</tr>
<tr>
<td>4</td>
<td>Tabasco</td>
<td>249</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>Nuevo León</td>
<td>190</td>
<td>78</td>
</tr>
<tr>
<td>6</td>
<td>Jalisco</td>
<td>165</td>
<td>44</td>
</tr>
<tr>
<td>7</td>
<td>Media</td>
<td>296</td>
<td>76</td>
</tr>
<tr>
<td>8</td>
<td>Yucatán</td>
<td>149</td>
<td>56</td>
</tr>
<tr>
<td>9</td>
<td>Tlaxcala</td>
<td>100</td>
<td>89</td>
</tr>
<tr>
<td>10</td>
<td>San Luis Potosí</td>
<td>99</td>
<td>78</td>
</tr>
<tr>
<td>11</td>
<td>Sinaloa</td>
<td>98</td>
<td>89</td>
</tr>
<tr>
<td>12</td>
<td>Guanajuato</td>
<td>97</td>
<td>56</td>
</tr>
<tr>
<td>13</td>
<td>Puebla</td>
<td>96</td>
<td>100</td>
</tr>
<tr>
<td>14</td>
<td>Chihuahua</td>
<td>92</td>
<td>56</td>
</tr>
<tr>
<td>15</td>
<td>Sonora</td>
<td>88</td>
<td>78</td>
</tr>
<tr>
<td>16</td>
<td>Querétaro</td>
<td>77</td>
<td>56</td>
</tr>
<tr>
<td>17</td>
<td>D. F.</td>
<td>64</td>
<td>67</td>
</tr>
<tr>
<td>18</td>
<td>Quintana Roo</td>
<td>34</td>
<td>89</td>
</tr>
<tr>
<td>19</td>
<td>Tamaulipas</td>
<td>34</td>
<td>44</td>
</tr>
<tr>
<td>20</td>
<td>Zacatecas</td>
<td>33</td>
<td>67</td>
</tr>
<tr>
<td>21</td>
<td>Estado de México</td>
<td>10</td>
<td>78</td>
</tr>
</tbody>
</table>

Table 3. Judiciary Websites: performance & design

The Mexican judiciary website that obtained the best performance score was Durango with 560 points. This component is obtained from three different measures: pingdom, alexa, and global performance. However, the average was 296 and only 30 percent of the judiciary websites are above that score, while the rest had important problems with performance in different forms. On the other hand, two judiciary websites received a score of 100 for the design component (Puebla and Tabasco) and with an average of 82, more than half of the websites were above average. This means that most (though not all) judiciary websites have a well-designed site that accomplishes basic standards in general terms.

5. Discussion

According to our results, 20 judiciary websites in Mexico have important deficits in terms of information quality, organization, and content. These flaws are complemented by a lack of integration of the information, both vertical and horizontal. In addition, most of the portals have a very basic design and poor performance. Our research presents similar conclusions as the CEJA (2013) study: most state-level judicial websites in Mexico provide an administrative portal that lacks a user-centric interface and some of the most basic data (such as salaries or the court's overall budget) related to open data and transparency are not available. Most important is the lack of integration across judiciary data, like sentences or the scheduling of cases, in both studies.

Another aspect to consider is that judicial portals in this sample show an important failure to interact with their users. Furthermore, the very poor development of participatory tools or functions reveals an important conclusion: these sites are mostly designed for administrative purposes and not for meeting citizen information needs. This research is a first attempt to use a quantitative instrument to assess some aspects of judiciary websites. As we mention in the literature review, we intend to evaluate the implementation of judiciary websites, not to develop a new system or to change the bureaucratic tasks.

The CIOs or webmasters of these local judiciary websites would potentially use the information from this study to target their weaknesses and increase their communication with lawyers or the general public. However, neither the components nor the items are completely defined, and much more discussion is needed to understand the impact of technology use on the judicial system.

6. Concluding Remarks

The purpose of this research is to generate new knowledge about judicial websites and ways to assess them. Based on existing literature on website evaluation and judicial websites, we designed an
assessment tool and tested it with a sample of 20 judicial state portals in Mexico.

We argue that research on Internet portals from the three branches of government and their evaluation must be done considering their specific goals, functions, and the different kinds of interaction they have with citizens, businesses, and other stakeholders.

For instance, judiciary websites could have two sections. The first would be for internal functions: judges, lawyers, sentencing, appointment scheduling, technical papers, and procedures regulated by a username and password. The second section could be for the general public, with statistical data, announcements to the public, laws and regulations, courses and continuing education for lawyers and judges, open job positions, and finance data as allowed or required by law.

Our previous experience assessing e-government state websites finds that many states change position in the rankings for political reasons such as a political party change, a change in appointed staff, or the election of a new governor. We have not measured how these kinds of changes affect the judicial websites. Normally judges and ministers of court in Mexico serve long terms of 6 to 9 years, although that varies according to the regulations in each state. The dependence of these judicial authorities on the governor is also different in different states, but much less than in the case of executive branch political appointees. Future research should explore the main factors that impact the quality and performance of judicial websites.

Our proposed components of the assessment model could be helpful for finding new ways to measure judicial website performance and other items or indicators will likely need to be included. The instrument was carefully adjusted, considering the role and potential impact of laws, lawyers, courts, and the legal systems. This allowed us to develop a research instrument adapted to the reality of judicial organizations and to test it empirically for the first time. The analysis of the results from the pilot study has been very helpful in refining the instrument by adding, deleting, or modifying items. In the next phase of this research, we will apply the refined instrument to all state judicial websites in Mexico.

We are aware that the components of our framework are complementary and their importance could be different in different years and for different cases. Our experience indicates that these types of assessment are normally a work in progress and they should be updated regularly in order to reflect new information needs, constant improvements in technology, and the increase of available data as a product of the open government trend.

We have not used statistical techniques to analyze the evaluation together with other measures such as GDP, computer access, economic development in the state, level of literacy, or state impact on the national economy. We wanted to test our research instrument first. However, future research should incorporate sophisticated analysis using these and other variables that could help to better understand the measures and some of the factors that affect the quality and performance of judicial websites.

Another potential path for future research would be a more detailed view of each item. For example: What variable of the information component was highest in which type of state judicial website? What item from the participation component is the most used in judicial websites and why? Some of these questions could be answered with a more detailed examination of one or a few judicial websites, particularly using qualitative assessments and a case study approach. We hope this paper will encourage other researchers to continue studying judicial websites and generate theoretical and practical knowledge currently needed.

7. Acknowledgments

The authors want to thank Jorge Michael Jimenez Rebollar and Daniel Díaz for their valuable help and research assistance in this project.

8. References


[40] K.-C. Chatzopoulos and A. A. Economides, "A holistic evaluation of Greek municipalities’ websites,"