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# **EDITORIAL**

## **Edição temática: E-gov**

### **EDITOR's SPACE**

#### **Special issue: E-gov**

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#### **Texto por/Text by: Rodrigo Sandoval- Almazan**

El impacto del Gobierno electrónico en la administración pública de muchos países comienza a notarse. En el viejo continente, los esfuerzos de Inglaterra, Francia, España y Alemania son notables. En el continente americano, el nivel de conocimiento que tenemos sobre esta nueva tendencia es mucho menor, pero en países como: Mexico, Brasil y Argentina se han notado varios esfuerzos gubernamentales por introducir estas nuevas prácticas.

Aunque la idea de gobierno electrónico ha evolucionado, aún no tiene una definición absoluta. Se ha denominado gobierno electrónico a la selección, desarrollo, implementación y uso de tecnologías de información y comunicación en el gobierno para proveer servicios públicos, mejorar la efectividad administrativa y promover valores y mecanismos democráticos, así como el rediseño y desarrollo de marcos legales y reglamentarios que faciliten ajustes organizacionales para el desarrollo de iniciativas orientadas a mejorar el uso de la información, así como el desarrollo de la sociedad de la información y el conocimiento

The impact of e-government in the public sector in many countries is emerging. In the old continent, the efforts of England, France, Spain and Germany are remarkable. In the Americas, the level of knowledge we have about this new trend is lower, but countries like Mexico, Brazil and Argentina have shown several e-government efforts to introduce these new practices.

Although the idea of e-government has evolved, it does not have an absolute definition. The term e-gov has been used to talk about the selection, development, implementation and use of information and communication technologies in government to provide public services, improve administrative effectiveness and promote democratic values and mechanisms, as well as the redesign and development of legal and regulatory frameworks that facilitate organizational settings for the development of initiatives to improve the use of information and the development of the information/knowledge society



(CRESSWELL *et al.*, 2007).

Esta tendencia del gobierno electrónico ha generado nuevas formas de organizar la administración pública y transformado su operación paulatinamente, abriendo un gran número de nuevos temas que se han comenzado a estudiar en los últimos años, tales como: interoperabilidad (SANTOS, REINHARD, 2007, 2010; FERNÁNDEZ, 2002; GUIJARRO, 2004; SCHOLL, 2005; SVEIN, 2010); gobernanza (COSTAKE, 2007; FOUNTAIN, 1999; JANSSEN, JOHA, 2006; MISRA, DHINGRA, 2002); intercambio de información (DAWES, 1996; DAWES *et al.*, 2011; ESTEVEZ *et al.*, 2010; GANT, 2003; GIL-GARCIA *et al.*, 2009); ciudadano céntrico (CHEN, 2010; KING, 2009; TAYLOR, LIPS, 2008); e-servicios (JANSSEN *et al.*, 2010; AXELSSON, LINDGREN, 2010; RÖSTLINGER, CRONHOLM, 2009; STAMOULIS, 2001; TODOROVSKI *et al.*, 2007); medición del gobierno electrónico (AL-SOLBI, MAYHEW, 2005; RAHMAN, 2007; SHAREEF, JANOWSKI, 2008), y transparencia gubernamental (CHANDLER, 1998; DAWES, HELBIG, 2010; TAYLOR *et al.*, 2006).

El gobierno electrónico o digital como se ha dado en llamar, está modificando la forma en que actúa la gestión pública (FICARRA, 2004), a partir de la nueva gerencia pública y de la manera de organizar la operación del gobierno para aumentar la legitimidad de los gobernantes. El objetivo de este número temático es presentar una colección de trabajos de investigación realizados por investigadores de gobierno electrónico de distintos países tanto de America Latina, el Caribe como de España que pueda arrojar datos sobre el estado que guarda la disciplina en estos países y ayude a disminuir la carencia de estudios sobre el tema en esta zona del mundo.

De acuerdo con la ultima encuesta

(CRESSWELL *et al.*, 2007).

This trend of e-government has created new forms of organizing public administration and gradually transformed its operations, opening a large number of new issues that have begun to be studied in recent years, such as interoperability (SANTOS, REINHARD, 2007, 2010; FERNÁNDEZ, 2002; GUIJARRO, 2004; SCHOLL, 2005; SVEIN, 2010); governance (COSTAKE, 2007; FOUNTAIN, 1999; JANSSEN, JOHA, 2006; MISRA, DHINGRA, 2002); information exchange (DAWES, 1996; DAWES *et al.*, 2011; ESTEVEZ *et al.*, 2010; GANT, 2003; GIL-GARCIA *et al.*, 2009); centric-citizen (CHEN, 2010; KING, 2009; TAYLOR, LIPS, 2008); e-services (JANSSEN *et al.*, 2010; AXELSSON, LINDGREN, 2010; RÖSTLINGER, CRONHOLM, 2009; STAMOULIS, 2001; TODOROVSKI *et al.*, 2007); measurement of electronic government (AL-SOLBI, MAYHEW, 2005; RAHMAN, 2007; SHAREEF, JANOWSKI, 2008), and government transparency or open government (CHANDLER, 1998; DAWES, HELBIG, 2010; TAYLOR *et al.*, 2006).

The electronic or digital government, as it has been called, is changing the way government organizes (FICARRA, 2004), providing for new ways to perform public management and organizing government's operation in order to increase the legitimacy of ruling politicians. The objective of this thematic issue is to present a collection of research papers conducted by researchers from different countries in Latin America, the Caribbean and Spain that can provide an update and the state of the art of this new trend in this part of the world.

According to the latest survey of the United Nations E-Government (2010),

de la Naciones Unidas sobre el Gobierno Electrónico (2010), ubica a Mexico, Brasil, Colombia, Chile, Uruguay, Barbados, Argentina y Antigua y Barbuda como los primeros diez evaluados en la región, incluyendo a Estados Unidos y Canada quienes figuran en el segundo y tercer lugar respectivamente de la lista general. Otros esfuerzos de medición son el estudio de Gobierno Electrónico, Apertura y Transparencia de Centroamerica que mide 26 países de la región centroamericana en variables de gobierno electrónico y transparencia (SANDOVAL-ALMAZAN, GIL-GARCIA, 2011).

Aunque faltan muchos países del Continente Americano por ser evaluados, este conjunto de países demuestra la importancia que está teniendo el gobierno electrónico en esta parte del mundo. Por ello, este esfuerzo de reunir investigaciones relacionadas sobre el tema en este numero especial, el cual se compone de tres grandes secciones: 1. El gobierno electrónico en el Mundo; 2. El gobierno Electrónico en Brasil y 3. El enfoque tecnológico.

En la primera sección enfocada al análisis del gobierno electrónico en el mundo, se recogen dos aportaciones, la primera es de República Dominicana, titulada: Coaxing an information society in the Dominican Republic: the rise and steep fall of a technology park's university research center. Aquí el autor presenta su experiencia de lanzar un centro de investigación de tecnologías de información y comunicación en una Universidad semi-publica y los retos que enfrentó así como las lecciones que pueda aportar su vinculación con la tecnología y el gobierno.

La segunda aportación es un esfuerzo colectivo de José María Moreno Jiménez y Manuela Velázquez Arguedas titulado: A few notes on e-participation in Spain – two real experiences from 2010:

Mexico, Brazil, Colombia, Chile, Uruguay, Barbados, Argentina and Antigua and Barbuda are among the ten countries evaluated in the region, that make stronger efforts to implement e-gov initiatives in the region, including the United States and Canada, which are the second and the third in the overall ranking list. Other measurement efforts are the study of Electronic Government Openness and Transparency of Central America, measuring 26 countries in that microregion with respect to e-gov variables and transparency (SANDOVAL-ALMAZAN, GIL-GARCIA, 2011).

Although the e-gov efforts performed by many countries throughout the Americas still needs to be assessed, the research presented in this issue of RESI shows the increasing importance of e-government for this part of the world. This special issue is organized in three major sections: 1. E-government in the World, 2. Electronic Government in Brazil, and 3. Focus on the technology.

The first section focused on the analysis of electronic government in the world, collected two contributions, the first one is from the Dominican Republic, entitled: Coaxing an information society in the Dominican Republic: the rise and steep fall of a technology park's university research center. Here the author presents his experience to launch a research center for information and communication technologies in a semi-public university, the challenges they faced and the lessons that can help others in dealing with technology for government.

The second contribution is a collective effort by José María Moreno Jiménez and Manuela Velázquez Arguedas entitled: A few notes on e-participation in Spain - two real experiences from 2010: Zaragoza and

Zaragoza and Barcelona que proviene de España y se enfoca a la investigación de la participación electrónica en dos municipios Cadrete y Barcelona, donde se pregunta a los ciudadanos sobre sus preferencias sobre ciertos asuntos públicos.

En la sección dedicada al gobierno electrónico en Brasil se presentan tres contribuciones. La primera de ellas, sobre servicios públicos e información, donde los autores - Maria Alexandra Viegas Cortez da Cunha, José Roberto Frega, Iomara Scandelari Lemos - investigaron en una muestra de 4402 formas recabadas de 70 sitios gubernamentales el perfil de los usuarios brasileños, encontrando que el perfil de usuarios es diferente entre los que buscan la provisión de servicios públicos y aquellos que solamente ingresan a internet.

Una segunda contribución brasileña, es el artículo titulado: Government electronic purchasing: an assessment of Brazilian state governments' e-procurement websites, escrito por Tomaz Rodrigo Alves y Cesar Alexandre Souza. En esta investigación se evaluaron los portales de pago de las 26 entidades de Brasil. Los autores observaron 39 variables que se agruparon en siete dimensiones con un puntaje de cero a cien. Los resultados demuestran diferencias regionales que comentan cuidadosamente los autores y hacen sus reflexiones sobre el impacto de esta tendencia en Brasil.

La última contribución de esta sección fue escrita por un conjunto de autores: Edmir Parada Vasques Prado, Neilson Carlos Leite Ramalho, Cesar Alexandre de Souza, Maria Alexandra Cunha y Nicolau Reinhard, debido a lo extenso de su análisis, ya que se centraron en estudiar 65 casos de éxito sobre gobierno electrónico en Brasil y entender cuales son las principales características que los llevaron a su éxito. En este texto titulado como: Electronic

Barcelona, and focuses on research involving two municipalities: Cadrete and Barcelona, where citizens were asked about their preferences on certain public issues.

The section on E-government in Brazil involves three contributions. The first one is on public services and information, where the authors - Maria Alexandra Viegas Cortez da Cunha, José Roberto Frega and Iomara Scandelari Lemos - investigated the profile of Brazilian users, based on a sample of 4402 forms collected from 70 government sites, finding out that the user profile is different for those who seek the provision of public services and those who access official web-sites for other purposes.

A second Brazilian contribution is the article entitled: Government electronic purchasing: an assessment of Brazilian state governments' e-procurement websites, written by Tomaz Rodrigo Alves and Cesar Alexandre de Souza. This research paper evaluated the payment gateways of 26 institutions in Brazil. The authors found 39 variables that were grouped into seven dimensions with a score of zero to one hundred. The results show regional differences that the authors carefully discuss, showing the impact of such trends for electronic government in Brazil.

The last contribution in this section was written by a group of authors: Edmir Parada Vasques Prado, Neilson Carlos Leite Ramalho, Cesar Alexandre de Souza, Maria Alexandra Cunha and Nicolau Reinhard, due to extensive analysis and study that focused on 65 cases of e-government success in Brazil and to understand which are the main features that led to their success. In this paper titled: Electronic government initiatives: an assessment of the

government initiatives: an assessment of the relationship between government level and characteristics of success case projects, los autores demuestran que existe una relación entre el nivel de gobierno y las características de éxito, además encontraron que los casos del sur de Brasil son los que tienen más éxito actualmente.

En la última sección de éste numero especial se enfoca en dos aspectos vinculados con el gobierno electrónico: la transparencia de información, que es una tendencia mundial que se presenta dentro de éste campo, y el uso de la técnica de minería de datos.

El primer artículo de esta sección se titula: Increasing government transparency by transforming open government data into linked data, y fue escrito por: Lucas de Ramos Araújo, y Jairo Francisco de Souza. Su propuesta se centra en presentar los datos ligados - linked data - como una de las prácticas que pueden impulsar la transparencia gubernamental.

El artículo de Carlos Vinícius Sarmento Silva y Célia Ghedini Ralha va más allá al proponer el uso de la herramienta minería de datos con agentes para que la agencia de control interno de Brazil pueda encontrar maneras de clasificar y englobar datos que le permitan detectar fraudes o actos de corrupción en sus procesos de *bidding*.

El resultado de éste esfuerzo al reunir éste conjunto de publicaciones permite establecer un punto de partida para investigaciones futuras, tanto del gobierno electrónico en el mundo en alguno de sus campos, como sólo en el caso de Brasil. También se adicionaron artículos sobre transparencia y de herramientas de sistemas de información tales como minería de datos para ofrecer casos concretos de implementación y el uso de estas tecnologías en aplicaciones gubernamentales.

relationship between government level and characteristics of success case projects, the authors demonstrate a relationship between the level of government and the characteristics of success, also found that the cases of South Brazil are currently the most successful ones.

The last section of this special issue focuses on two aspects related to e-government: information transparency, which is a global trend in the field, and the use of data mining, both from a technical perspective.

The first article in this section is entitled: Increasing government transparency by transforming open government data into linked data, and was written by: Lucas Araújo Ramos and Jairo Francisco de Souza. Their paper focuses on presenting *linked data* as a strategy that can boost government transparency.

The article by Carlos Vinicius Sarmento Silva and Célia Ghedini Ralha goes further by proposing the use of data mining tools for Brazil's agency officials to sort data that allows to detect fraud or corruption in bidding processes.

The result of this effort to collect this research can be a starting point for future research on electronic government around the globe or specifically in the case of Brazil. A few of the articles discussed transparency and information systems tools such as data mining, providing examples of specific implementation instances and the use of information and communication technologies in government applications.

El gobierno electrónico es una tendencia que utiliza las nuevas tecnologías de información y comunicación junto con los sistemas de información para transformar sus procesos internos, reducir sus costos y aumentar su legitimidad y aprobación política. Sin embargo, a final de cuentas los que más salen beneficiados son los ciudadanos que tendrán menos corrupción, mayor posibilidad de pagar sus impuestos usando la tecnología y una aplicación más rigurosa de los recursos públicos que atiendan los problemas ciudadanos, por ello, en gobierno electrónico apenas estamos comenzando.

E-government is a trend that uses new information and communication technologies with information systems to transform their internal processes, reduce costs and increase legitimacy for political approval. However, in the end, citizens are the ones who profit the most, benefitting from less corruption, greater ability to pay their taxes using the available technology and a more rigorous application of public resources to address community problems. Therefore, the e-government field has a lot of work ahead.

## REFERÊNCIAS / REFERENCES

- AL-SOLBI, A.; MAYHEW, P. J. Measuring e-readiness assessment in Saudi Organisations: preliminary results from a survey study. Proceedings of Euro mGov 2005: The First European Mobile Government Conference. Brighton, UK: Mobile Government Consortium International LLC: 467-475 p. 2005.
- AXELSSON, U. M.; LINDGREN, I. Exploring the importance of citizen participation and involvement in e-government projects: practice, incentives, and organization. *Transforming Government: People, Process and Policy*, v. 4, n. 4, p. 299 - 321, 2010.
- CHANDLER, H. E. Towards open government: official information on the Web. *New Library World*, v. 99, n. 6, p. 230-237, 1998.
- CHEN, Y.-C. Citizen-centric e-government services: understanding integrated citizen service information systems. *Social Science Computer Review*, v. 28, n. 4, p. 427-442, November 1, 2010 2010.
- COSTAKE, N. From e-government to e-governance. In: ANTTIROIKO, A.-V., MÄLKIÄ, M. (Ed.). *Encyclopedia of digital government*. Hershey, PA: Idea Group Reference, v. 1, p. 853-858, 2007.
- CRESSWELL, A. M.; PARDO, T. A.; HASSAN, S. Assessing capability for justice information sharing. Proceedings of the 8th Annual International Conference on Digital Government Research: Bridging Disciplines & Domains. Philadelphia, Pennsylvania: Digital Government Research Center, p. 122-130, 2007.
- DAWES, S. S. Interagency information sharing: expected benefits, manageable risks. *Journal of Policy Analysis and Management*, v. 15, n. 2, p. 377-394, 1996.
- DAWES, S. S.; GHARAWI, M.; BURKE, B. Knowledge and information sharing in transnational knowledge networks: a contextual perspective. Proceedings of the 44th Annual Hawaii International Conference on System Sciences (HICSS 2011). Kauai, Hawaii USA: IEEE Computer Society Conference Publishing Services. January 4 - 7, 2011.

- DAWES, S. S.; HELBIG, N. Information strategies for open government: challenges and prospects for deriving public value from government transparency. In: WIMMER, M. A.; CHAPPELET, J.-L. (Ed.). Electronic Government: 9th IFIP WG 8.5 International Conference, EGOV 2010, Lausanne, Switzerland, August/September 2010: Proceedings. Berlin / Heidelberg: Springer-Verlag, p. 50-60, 2010.
- ESTEVEZ, E.; FILLOTTRANI, P.; JANOWSKI, T. Information sharing in government – conceptual model for policy formulation. Proceedings of The 10th European Conference on e-Government (ECEG). University of Limerick, Ireland, p. 152-162, June 17 -18, 2010.
- FERNÁNDEZ, A. Towards interoperability amongst European public administrations. Electronic government: First International Conference, EGOV 2002, Aix-en-Provence, France, September 2-6, 2002.
- FICARRA, F. Internet en la gestión pública y municipal. *Revista Latinoamericana de Comunicación CHASQUI*, v. 88, Diciembre 2004.
- FOUNTAIN, J. E. The virtual state: toward a theory of federal bureaucracy in the 21st century. In: KAMARCK, E. C.; NYE, J. S. J. (Ed.). Democracy.com? Governance in a networked world. Hollis, NH: Hollis Publishing, p.133-156, 1999.
- GANT, J. P. Information sharing, communications, and coordination in e-government collaborations. Center for Technology in Government. Albany, NY, p. 1-8. 2003.
- GIL-GARCIA, J. R.; CHUN, S. A.; JANSSEN, M. Government information sharing and integration: combining the social and the technical. *Information Polity*, v. 14, n. 1-2, p. 1-10, 2009.
- GUIJARRO, L. Analysis of the interoperability frameworks in e-government initiatives. Electronic Government: Third International Conference, EGOV 2004, p. 36-39, 2004.
- JANSSEN, M.; JOHA, A. Governance of shared services in public administration. AMCIS 2006; Proceedings. Acapulco, Mexico: AIS. Paper 284, p. 1-8, 2006.
- JANSSEN, M.; LAMERSDORF, W.; PRIES-HEJE, J., Eds. E-government, e-services and global processes : joint IFIP TC 8 International Conferences, EGES 2010 and GISP 2010, held as part of WCC 2010, Brisbane, Australia, September 20-23, 2010. Proceedings. IFIP Advances in Information and Communication Technology. New York: Springer, IFIP Advances in Information and Communication Technology, 1st ed. 2010.
- KING, S. Innovation and Citizen-Centric Local E-Government. In: REDDICK, C. G. (Ed.). Handbook of research on strategies for local e-government adoption and implementation: comparative studies. Hershey, PA; London, UK: *Information Science Reference*, v. 1, cap. 3, p. 37-61, 2009.
- MISRA, D. C.; DHINGRA, A. E-governance maturity model. *Electronics Information & Planning*, v. 29, n. 6-7, p. 269-275, Mar-Apr 2002.
- RAHMAN, H. E-government readiness: from the design table to the grass roots. ICEGOV 2007 (1st International Conference on Theory and Practice of Electronic Governance). Macao: ACM Press: 225-232 p. 2007.

RÖSTLINGER, A.; CRONHOLM, S. Design criteria for public e-services. 17th European Conference on Information Systems (ECIS 2009). Verona, Italy. June 8-10, 2009.

SANDOVAL-ALMAZAN, R.; GIL-GARCIA, J. R. Gobierno electrónico, apertura y transparencia en Centro América. Dialogo Regional sobre la Sociedad de la Información Agosto 2011, p. 64, 2011.

SANTOS, E. M.; REINHARD, N. Barriers to government interoperability frameworks adoption. AMCIS 2010 Proceedings. Lima, Peru: AIS, p. 1-10, 2010.

SANTOS, E. M.; REINHARD, N. Setting interoperability standards for e-government: an exploratory case study. *Electronic Government: an International Journal*, v. 4, n. 4, p. 379-394, 2007.

SCHOLL, H. J. Interoperability in e-government: more than just smart middleware. Proceedings of the 38th Annual Hawaii International Conference on System Sciences (HICSS'05). Island of Hawaii (Big Island): Computer Society Press, 2005.

SHAREEF, M.; OJO, A.; JANOWSKI, T. A readiness assessment framework for e-government planning: design and application. Proceedings of the 2nd International Conference on Theory and Practice of Electronic Governance. Cairo, Egypt: 403-410 p. 2008.

STAMOULIS, D. Revisiting public information management for effective e-government services. *Information Management & Computer Security*, v. 9, n. 4, p. 146-153, 2001.

SVEIN, L. Interoperability in public sector: how use of a lightweight approach can reduce the gap between plans and reality. In: WIMMER, M. A.; CHAPPELET, J.-L. (Ed.). *Electronic government: 9th IFIP WG 8.5 International Conference, EGOV 2010*, p. 315-326, 2010.

TAYLOR, J. A.; LIPS, A. M. B. The citizen in the information polity: exposing the limits of the e-government paradigm *Information Polity*, v. 13, n. 3-4, p. 139-152, 2008.

TAYLOR, J. A.; LIPS, A. M. B.; ORGAN, J. Freedom with information: electronic government, information intensity and challenges to citizenship. In: CHAPMAN, R., HUN, M. (Ed.). *Freedom of information: perspectives on open government in a theoretical and practical context*. Aldershot: Ashgate, p.125-138, 2006.

TODOROVSKI, L.; KUNSTELJ, M.; VINTAR, M. Reference Models for E-Services Integration Based on Life-Events. 6th International Conference, EGOV 2007. WIMMER, M. A.; SCHOLL, J., et al. Regensburg, Germany: Springer Berlin/Heidelberg. 4656/2007: 92-103 p. 2007.