

Interoperability Maturity Monitoring in the Brazilian Electronic Government Project

Extended Abstract

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The Federal Government of Brazil has developed, since the year 2000, an Electronic Government Project, aiming at the modernization of public services based on the utilization of state-of-the-art Information Technology, so that high quality services can be offered to an increasingly large portion of the Brazilian population.

As part of this project, interoperability standards have been formulated, to facilitate the exchange of documents, information and services – chiefly through the Internet – between citizens, organizations and governmental institutions.

The interoperability standards have been prepared by members of staff from the Federal Government, who has prepared a series of versions of an *interoperability standards document*, which has been regularly published in the Internet and made available to receive comments freely from any interested citizen or organization. Each comment has been taken into consideration, and some of them have effectively influenced in the production of more recent versions of the interoperability standards for the Brazilian Electronic Government.

The interoperability standards are comprised by recommendations of formats for digital documents and services, whose adoption should facilitate their exchange through the widest possible variety of peers.

Any interoperability standards, however, are deemed to contain imperfections, given the permanent evolution of digital services and therefore of digital formats to encode documents and service exchanges. An issue to be taken into account is that such imperfections may have the power to bias organizations towards the adoption of certain families of products, services and document encoding formats – which, for example, can be provided by specific groups of companies or institutions – in detriment of others.

In the case of interoperability standards for an electronic government project, this power may lead to the purposeful sustenance of certain imperfections, to support powerful groups of companies and/or to support specific views biased by political interests. Any imperfection in such interoperability standards, however, hinders the technical possibilities to effectively improve the quality and the accessibility for all of public services. Hence, uttermost care should be taken to avoid the sustenance of imperfections, and indeed to eliminate as many imperfections as possible from such standards.

In its latest version (published in October 2008 – see (e-PING, 2008)), the interoperability standards document prepared by the Federal Government of Brazil has included a section devoted to the specification of procedures to monitor the maturity of adoption of these standards. From a conceptual point of view, this initiative should be certainly praised, as such monitoring can provide the means to rank governmental bodies and institutions according to how effective they have been in incorporating novel Information Technologies to improve the quality and the accessibility of their services.

In its present formulation, however, we understand that the proposed procedures to monitor the maturity of adoption of the interoperability standards prepared by the Federal Government of Brazil contains some drawbacks that can lead the Electronic Government Project away from its proposed technical goals.

Following the pattern to assess process maturity and reliability in organizations that we can find e.g. in the Capability Maturity Model Integration (Ahern et alli, 2008), the interoperability maturity model proposed by the Federal Government of Brazil classifies organizations according to the extent to which their internal processes are aligned with the goals of the Electronic Government Project – and, in this particular case, with the goals related to interoperability.

The classification of organizations is effected by the measurement of specified attributes and metrics, which should, in principle, provide means for objective assessment of the alignment of organizations with the goals of the Electronic Government Project.

In the case of the interoperability maturity model proposed by the Federal Government of Brazil, however, the proposed attribute to evaluate the maturity of organizations with respect to interoperability is the extent to which digital documents are encoded using a single, specific format, namely, the Open Document Format – *ODF* – format put forward by *OASIS* – The Organization for the Advancement of Structured Information Standards.

Our perception is that there may not be a direct correlation between the proportion of digital documents within an organization encoded in *ODF* and the actual capability of that organization to ensure interoperability of its services, documents and information. Indeed, we can envision scenarios in which the forceful adoption of a single document formatting within an organization can actually hinder its capability to interoperate, instead of improving such capability.

Alternatively, the interoperability maturity level of an organization could be assessed based on a benchmark suite, comprised by a set of standardized tests to ensure that an organization is prepared to ensure a certain level of interoperability with high reliability. The construction of a benchmark suite, in order to ensure its technical quality and the absence of undesired biases and imperfections that could lean the tests towards the protection of specific corporations and the promotion of specific political views, shall also be subjected to public scrutiny and evaluation.

Other possibilities can be found in the literature. In (NEHTA, 2007) a collection of standardized scorecards are used to provide a qualitative assessment of the maturity of healthcare organizations in Australia, in what relates to information interoperability. In (Kasunic, Anderson, 2004) a sophisticated framework to characterize and to assess interoperability in enterprise information systems is presented. The assessment of interoperability in this framework is also based on the utilization of standardized scorecards. Finally, we highlight an experiment developed in Brazil, in which empirical assessment of e-Gov services presented through the *WWW* has been developed (Garcia et alli, 2005).

In none of these references we find the proposition that interoperability maturity could be measured by the extent to which a single document format is used within an organization.

Our perception is that the assessment and monitoring of the interoperability maturity level of organizations should be praised as a positive initiative from the Electronic Government Project developed by the Brazilian Federal Government. However, the

selected attributes to measure the level of interoperability of an organization is a delicate issue indeed, as it has the power to either promote or obliterate the increase in maturity of the monitored organizations.

We consider that the metric to monitor the interoperability maturity level of organizations that has been proposed in the 2008 version of the interoperability standards document prepared by the Brazilian Federal Government requires further consideration and improvement, to ensure that the consequences of its adoption are positive to the development of the Electronic Government Project. One initial step to revise the proposed metric can be a more thorough analysis of similar initiatives that have been reported by different authors, nations and projects.

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