

Título da comunicação: Maturity Models for Information Management and Digital Preservation

Resumo:

A Maturity Model is a widely used technique that is proved to be valuable to assess certain aspects of organizations, as it represents a path towards an increasingly organized and systematic way of doing business. A maturity assessment can be used to measure the current maturity level of a certain aspect of an organization in a meaningful way, enabling stakeholders to clearly identify strengths and improvement points, and accordingly prioritize what to do in order to reach higher maturity levels. This can be used to show the outcomes that will result from that effort, enabling stakeholders to decide if the outcomes justify the effort.

Despite the numerous advantages of maturity models, one common criticism is that existing models lack empirical foundation and reality. The fact is evidenced by the absence of theoretical frameworks and methodologies for the design and development of maturity models. Consequently, maturity models tend to reflect the views of the stakeholders responsible for its creation on a specific problem.

There are several maturity models developed for the information management and digital preservation domains. One example is the Digital Asset Management (DAM) maturity model. This model was developed having in mind that the successful implementation of DAM in organizations goes beyond the use of technology. It requires a holistic approach which includes people, systems, information and processes.

Another example is the research data management (RDM) maturity model. RDM has become a trending topic in data management as increased importance from government agencies, such as, the US National Science Foundation. These funding agencies are raising the issue of maintaining good RDM practices for the projects that are funded by them.

In the Information Governance domain, the E-ARK Project focuses on harmonizing currently fragmented solutions that support Archives services, especially in regard

to Ingest, Archival Preservation and Dissemination of information. E-ARK is developing an Information Governance Maturity Model that allows the assessment of all types of organizations where information governance is a concern. This maturity model is designed using an existing development method that will enhance the traceability between the requirements and the model itself.

From the area of Digital Preservation, there has been an effort to introduce maturity models, such as, the work of Adrian Brown where the author examines the notion of “trusted” digital repositories and proposes a maturity model for digital preservation, which goal is to enable organizations to assess their capabilities and create a roadmap for developing them to the required maturity level, and of Charles Dollar that proposes a Capability Maturity Model to assess digital preservations requirements according to the Open Archival Information System Reference Model and the Trustworthy Repository Assessment Criteria Standard.

Despite the benefits of maturity models, current maturity assessment methods focus on highly complex and specialized tasks being performed by competent assessors in an organizational context. These tasks mainly focus on manually collecting evidence to substantiate the maturity level calculation. Because of the complexity of these methods, maturity assessment becomes an expensive and burdensome activity for organizations.

As such, future work on this domain is focusing on how to develop methods and techniques to automate maturity assessment. For example, the collected evidence from an organization can be synthesized into a set of model representations that can then be used when analyzing and calculating the maturity levels.

However, in order for these models to become relevant for maturity assessment there should be a formal representation for both maturity models and model representations. One hypothesis is that building on the knowledge of ontologies from the computer science and information science domains, these can be used to represent maturity models and model representations that can then be used to verify if an organization meets the requirements to reach a certain maturity level using ontology query and reasoning techniques.

The final objective is thus to identify how these methods and techniques can be used in existing maturity assessment methods, so that they can be proven as relevant to enable the automation of certain aspects of maturity assessment, such as, the maturity level determination. In order to do this, there should be an exploration of what types of analysis can be performed using the information on model representations that is relevant in a maturity assessment effort.

Nota biográfica:

Diogo Proença

Instituto Superior Técnico, Universidade de Lisboa

diogo.proenca@tecnico.ulisboa.pt

Diogo Proença received his MSc in computer science from the Polytechnic Institute of Leiria (2011) and is currently a PhD candidate at Instituto Superior Técnico, Lisbon University under the supervision of Professor José Borbinha. He is a researcher for the Information and Decision Support Systems Lab at INESC-ID – Research and Development Institute for Systems and Computer Engineering and the Computer Science Department at Instituto Superior Técnico. His focus is on Systems Governance, Process Maturity, Cost Modeling and Ontology Engineering. He has been involved in several digital preservation projects, specifically SHAMAN, TIMBUS, SCAPE, BenchmarkDP, 4C and E-ARK.