Evaluating Information Systems with Continuous Assurance Services

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ABSTRACT

Nowadays there is a need for real-time awareness to assure conformity of organizational transactions to increase their reliability and to mitigate organizational risk. In this context, Continuous Assurance has assumed an important role as a management goal and in ensuring improved effectiveness of organizations. Some information systems already support Continuous Assurance services, but disposable data require extra effort to make them useful for management purposes. Hence, this paper presents a model constituted of three dimensions and one requirement aiming to evaluate an information system with Continuous Assurance services. The Delphi method was used to validate this model, assuring the relevance of inclusion of these dimensions and requirement. This method also validated a set of metrics to be included in each dimension and requirement which were also proposed for the model. Thus, this paper presents the results and conclusions of this study and contributes to disseminate a valid instrument to effectively evaluate information systems with Continuous Assurance Services.

KEYWORDS

Continuous Assurance, Continuous Assurance Evaluation, Continuous Controls Monitoring, Continuous Data Assurance, Continuous Risk Monitoring and Assessment, Evaluation Model, Management Information System

INTRODUCTION

In the current organizational context in which competition is part of daily life, there is a constant need for more timely, relevant and reliable information to help the management team with the decision making, achieve the planned objectives and foresee prospects for the future.

In this context, Continuous Assurance has been asserting itself and assuming an increasingly important role within organizations, as a function of management support and to ensure the economic and efficient use of resources and the effectiveness of organizations, areas where the potential impact of new risks, caused by the constant change, fierce competition and widespread access to global information, are more sensed (Vasarhelyi, Alles & Williams, 2010).

The audit is defined as a systematic process of objective gathering and evaluation of evidence on organizational data and transactions to verify their compliance with the established standards and criteria. The communication of auditing findings to stakeholders is an assurance service. However, assurance is a much broader concept because it includes all professional services that ensure the quality of the information or its context, for decision makers (Soltani, 2007). The IFAC (International Federation of Accountants) defined the assurance services as those which allow a practitioner to express a conclusion designed to increase the level of confidence of the intended users other than
the responsible party about the result of the evaluation or measurement of a subject matter against 
the given criteria (IFAC, 2004).

Continuous Assurance is defined as the application of emerging information technologies to 
the standard techniques of auditing, both mandatory periodic auditing and internal auditing. In that 
view, Continuous Assurance presents itself as a new step in the evolution of transaction auditing from 
manual techniques to automated methods. The term “continuous” does not mean hard real-time, but 
in a timely way to be use-effective, considering, respecting and being consistent with the pulse and 
rhythm of each organizational transaction and process (Vasarhelyi, Alles & Williams, 2010).

Continuous Assurance has thrived within organizations as a set of services involved in diagnosing 
certain situations, including the company’s viability, allegations of fraud and illegal acts, assessing 
the economy, efficiency and effectiveness of organizations (Morais, 2008; Vasarhelyi, Alles & 
Williams, 2010).

The known cases of fraud at companies like Lehman Brothers, A-Tec, Madoff, Kaupthing 
Bank, Enron, WorldCom, Parmalat, Tyco, Xerox, among others, led these organizations and their 
stockholders to bankruptcy or to very compromising situations. Despite the different and varied 
approaches to combat fraud and cybercrime (Murthy, Vishnuprasad & Rahul, 2010) and to improve 
the operational performance (Zhongxian, Ruiliang, Qiyang & Ruben, 2010), the fraud has caused 
huge losses to investors in recent years, leading also to the loss of financial credibility and integrity. 
Similarly, the independent audit service also seems to have suffered a heavy blow because of these 
frauds. Some contextual and socio-economic factors, such as national wealth, transparency levels, 
staff training and tertiary education enrolment have influenced the information security threats and 
controls (Princely, 2015).

In this scenario, Continuous Assurance emerges as a set of services which aims to restore the 
credibility of auditing, allowing at the same time organizations to meet the requirements of regulations 
(Murcia, Souza & Borba, 2008; Vasarhelyi, Alles & Williams, 2010).

The work presented in this paper is framed in a more comprehensive research project which 
intends to develop a solution with Continuous Assurance services for the real-time monitoring and 
auditing of organizational transactions at a very low-level (Marques, Santos & Santos, 2012a, 2013b). 
Thus, this paper presents, promotes and validates a model which allows to evaluate an information 
system with Continuous Assurance services (Marques, Santos & Santos, 2013a).

Hence, this paper is organized the following way. The next section gives a brief overview on 
the concept of Continuous Assurance, its objectives and components. Next the evaluation model is 
proposed, and then the methods which were used to validate it are also presented. Finally, the results 
are presented and discussed and some conclusions are given.

CONTINUOUS ASSURANCE

Continuous Assurance is an aggregate of objectively provided assurance services derived from 
continuous online management information structures, whose objective is to improve the accuracy of 
corporate information processes (Vasarhelyi, 2002). The concept of Continuous Assurance refers to 
the set of services which, making use of technology, uses the information immediately and produces 
audit results simultaneously or within a short period of time after the occurrence of relevant events. 
Also, Continuous Assurance allows the analytical monitoring of business processes. Compared to 
the traditional auditing process, Continuous Assurance is intended to be timely, more comprehensive, 
more accurate and more supportive to management (Alles, Kogan & Vasarhelyi, 2003, 2004; Alles, 

Moreover, Continuous Assurance has provided a gradual change in the audit practice for the 
maximum possible degree of automation. Given the emphasis on the transformation of the entire 
auditing system, the development of Continuous Assurance requires a fundamental reassessment 
of all aspects of auditing, in particular on how data is made available to the auditor, the checks and

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