Cahier de recherche

2008-04

Chaire d'information financière et organisationnelle

IT GOVERNANCE AND STRATEGIC CONTROL OF WEB SITE CONTENT: A CONCEPTUAL FRAMEWORK

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April 2, 2008

Acknowledgements: I would like to thank Alex Nikitkov (discussant at the 2007 AAA conference) and Jean-François Henri for their helpful comments and suggestions. I would also like to acknowledge the financial contribution of the Corporate Reporting Chair, ESG-UQAM, and the useful contribution of Denis Cormier (Chair holder), Michel Magnan and Christiane Demers on an earlier draft.

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Abstract

Accounting standard-setters and regulators encourage firms to incorporate a web-based disclosure policy into their governance mechanisms. Information technology (IT) governance and strategic control may help firms to deal with important issues such as information security, reliability and integrity, information overload and risk management related to web-based disclosure. The purpose of this study is to describe IT governance factors and strategic control mechanisms related to web site content, and to assess the possible relationships between those factors and mechanisms.

Keywords: information system management; IT governance; strategic control; web-based corporate reporting; web site content; Internet.

Résumé

Les organismes de normalisation comptable et de réglementation encouragent les entreprises à intégrer une politique de divulgation d'informations sur le Web à leurs mécanismes de gouvernance. La gouvernance des technologies de l'information (TI) (« IT governance ») peut les aider à traiter d'importantes préoccupations telles que la sécurité, la fiabilité et l'intégrité de l'information, l'excès d'informations et la gestion des risques reliés à la présentation d'informations sur le Web. L'objectif de l'étude est de décrire les facteurs associés à la gouvernance des TI ainsi que les mécanismes de contrôle stratégique portant sur le contenu des sites web, et de discuter des relations possibles entre ces facteurs et ces mécanismes.

Mots-clés: gestion de système d'information ; gouvernance des technologies («IT governance») ; contrôle stratégique ; communication d'informations sur le Web ; contenu de site web ; Internet.

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INTRODUCTION

Maintaining good relations with stakeholders, facilitating their access to financial and non-financial information, and considering their information needs can provide organizations with economic advantages (Svendsen, et al., 2003; Trites, 2004; Ashbaugh, et al., 1999; Beattie & Pratt, 2001, 2003). To meet their strategic goals, organizations may therefore formulate and implement a communication strategy to present a good image and to be well-perceived by stakeholders.

Information technology (IT) has a significant role in the corporate strategy (Brown et al., 2006). Firms can use a variety of strategic system initiatives based on the Internet (Fernandez & Nieto, 2006) or the Web (Brown et al., 2006). More specifically, web sites can be used as a strategic information system (IS) by allowing a vast group of stakeholders to be reached timely and quickly (CICA / Trites, 1999). Driven by corporate governance (Van Grembergen et al., 2004), IT governance could explain differences in web site design (Brown et al., 2006).

To better and strategically manage their web site content, firms are encouraged by regulators and by accounting standard-setters to incorporate a web-based disclosure policy into their governance mechanisms (TSX, 2003; IFAC, 2002). Indeed, to oversee and coordinate web-based disclosure, firms can use guidelines provided to develop structures and processes surrounding the responsibilities and involvement of top management (CSA, 2002) and of external auditors (APB, 2001a) and b)).

A few studies examine what top managers, the board of directors and auditors are doing in the web-based disclosure process. For instance, the results of these studies indicate that managers are concerned about the security, integrity and credibility of information (Ashbaugh et al., 1999) but are not proactive to ensure the integrity of information disclosed on web sites (Smith & Pierce, 2005). The boards of directors of small listed firms are actively involved in determining and approving web site content (Gowthorpe & Flynn, 2002) while the boards of directors of larger firms, as well as their external and internal auditors, are not very involved in the process (Héroux, 2006). It is not yet clear whether the information put on web sites is reliable (audited) or not. In this respect, external auditors' responsibilities are not clear (Fisher et al., 2004). They have little control over the web site content and the changes that can be made to audited information (Khadaroo, 2005).

Given that corporate governance drives and sets IT governance, and because there is little knowledge about the strategic control of financial and non-financial web site content, this paper explores the influence of IT governance on the strategic control of web site content. The purpose of this study is *i)* to describe IT governance structures; and IT governance processes; *ii)* to describe strategic control related to web site content; and *iii)* to discuss the possible relationships between those IT governance factors and strategic control mechanisms. The remainder of this paper is organized as follows. In the next section, a conceptual framework is proposed. The research method is then briefly described, followed by the expected contributions of the study.

CONCEPTUAL FRAMEWORK

IT governance could drive electronic IS such as web sites. Among other things, ideally, the web-based disclosure strategy should be incorporated into the overall communication strategy, that should itself be in

line with the overall corporate strategy. However, to our knowledge, there is no empirical evidence to support this stand-point. Moreover, in practice, this may not be so obvious.

Indeed, on the one hand, some firms may have less (more) developed IT governance and less (more) sophisticated strategic control related to web site content (Fig. 1, quadrant 1 and 2); they might have fully integrated their corporate strategy at all organizational levels. On the other hand, some others might have more (less) developed IT governance and less (more) sophisticated strategic control (Fig. 1, quadrant 3 and 4); they might not have fully integrated their corporate strategy at all organizational levels. For instance, as a result of an organizational choice or because of limited resources, corporate strategy and IT strategy may be characterized by a clear mission focusing on more than one specific groups of stakeholders while web-based communication strategy might be restricted to satisfying shareholders' information needs. Moreover, it could take a certain amount of time to fully integrate corporate strategy throughout the firm's units or activities. Furthermore, in some circumstances, there might be no association between IT governance and strategic control of web site content (not illustrated in Fig. 1).

Insert Fig. 1 about here

In the light of this discussion, in order to provide support for the development of the conceptual framework and to eventually guide data collection, the IT governance, strategic management, as well as web-based corporate reporting literature were reviewed. Consulting interviews were also conducted with a representative of a regulatory body in charge of the governance regulation, a senior partner in a "big 4" accounting firm, four top managers and one internal auditor[1] of three units of a large financial group

[1] The senior vice-president and chief financial officer, the senior vice-president – operations / IT and chief compliance officer, the vice-president and general manager – on line brokerage, the executive manager – operational risks and regulation compliance and one advisor – internal auditor were interviewed.

(seven interviews lasting 45 to 60 minutes, totalling around seven hours of recording). Prior to this study, four web site managers in large organizations, one consultant in numerical relations whose major clients are large private firms and one top manager of a fund management company were met to understand how web site content is managed (six consulting interviews in five organizations / two public; four large; from three business sectors; duration of 90 to 120 minutes each, totalling almost 11 hours of recording). This leads us to the following a priori model (Fig. 2).

Insert Fig. 2 about here

IT governance "is the responsibility of the board of directors and executive management […] and consists of the leadership and organizational structures and processes that ensure that the organization's IT sustains and extends the organization's strategy and objectives." (ITGI, 2003, p. 10). Structures consist of roles for making IT-related decisions while processes focus on the implementation of IT management techniques and procedures in compliance with establishing IT strategies and policies (Bowen et al., 2007). IT executives' and IT board members' roles, and the use of a IT balanced scorecard (BSC) and Control Objectives for Information and related Technology (CobiT) framework, can be related to strategic IT decision-making and monitoring (Peterson, 2003). In this paper, these variables are presented as "IT governance factors".

Strategic management is performed by the executive team, directed by the board of directors. It encompasses the *strategic control* and refers to the different steps through which strategies are formulated, implemented and evaluated (Steyn, 2003; Hendry & Kiel, 2004). Strategic control is defined a formal system that can signal changes in the competitive environment, leading managers to react to these perceived changes by adjusting the content of the strategy to identify new opportunities and threats (Van Veen-Dirks & Wijn, 2002). In a broad sense, strategic control focuses on planning and monitoring (Ittner

& Larcker, 1997). As a strategic management fundamental tool (Kearns, 2006), strategic planning may focus on the integration of a firm's activities and on the long-term anticipation of stakeholders needs. The monitoring (control) phase ensures that the firm stays on track and achieves its goals and strategies (Steyn, 2003). In this study, strategic planning and monitoring have been selected as "strategic control mechanisms" because they may help organizations improve their web site content. Financial content refers to information such as results disclosed in the annual reports and stock quotes. Non-financial content includes general information (e.g. mission, profile) and other information related to corporate governance, employees, social responsibility, description of products / services, Internet sales conditions, etc.

More specifically, *strategic planning* is viewed as a process of crafting a web site's long-term vision by anticipating stakeholders' information needs and resource allocation, of setting web site objectives that are coherent with a firm's overall communication strategy, and of managing risks inherent to web-based content. *Monitoring* refers to the process of following-up on the web site content at a strategic level (as opposed to an operational level). Monitoring mechanisms could deal with important issues such as security, reliability and integrity of information, as well as information overload. They should ensure that the web site content is aligned with the web site's aim and the overall communication strategy.

IT governance structures and strategic control mechanisms related to web site content

Formal positions and roles, as well as committees and councils, are key IT governance structures (Peterson, 2004). They refer to individuals such as CIOs who are formally appointed to manage the IT function and coordination. Examples of structures include: CIO on board, IT strategy committee, IT leadership committee, IT steering committee (Brown, 2006).

Managerial IT skills can be a source of competitive advantage (Mata et al., 1995). Moreover, chief executive officer (CEO) attitude to IT, CEO innovativeness, and CEO knowledge of IT can influence innovation adoption (Karakaya & Khalil, 2004) and Internet adoption (Thong & Yap, 1995). CEO participation in information system (IS) planning signals top management support and leads to a greater alignment between IS and organizational strategies, and to the use of IS for competitive advantage (Kearns, 2006). Organizations with more CEO commitment to e-commerce have more comprehensive e-commerce sites (Zhuang & Lederer, 2004). In effective IT organizations (where IT is performing according to or above expectations), user involvement, top management participation (commitment and support) and management IT training is high (Brown et al., 2006).

Effective IT governance is associated with a shared understanding of business and IT objectives, active involvement of the IT committee, and a balanced representation of senior business and IT executives (Bowen et al., 2007). According to Duffy (2002), the board of directors has to confirm that the IT department is delivering the maximum as defined in the organization's strategic plan and to ensure that policy requires the plan to be validated and updated on a regular basis. The CEO has to ensure that business and IT strategies are fully harmonized; he has to define CIO's roles and to support him or her in responding to the board's requirements. The CIO has to interpret the business strategy in terms of IT requirements and to seek ways to increase IT value contribution. Overall, executives' and board members' roles in respect to IT may influence the degree of use of strategic control mechanisms such as strategic planning and monitoring.

Web-based disclosure process could benefit from effective IT governance. Indeed, "effective IT governance would create the environment whereby management collaborates with the CIO or top IT management to participate in the design of a web site and the related functionality" (Brown et al., 2006, p. 258). More sophisticated IT governance structures (such as an IT committee and a CIO on the board,

resulting from more IT collective competence of the board and top management) could lead to greater support and commitment to web site content maintenance and improvement; it could lead to a more sophisticated strategic planning and monitoring with respect to the web site content.

IT governance processes and strategic control mechanisms related to web site content

IT balanced scorecard

In accordance with the business balanced scorecard (BSC) framework, the financial evaluation of an organization (financial perspective) should be complemented with measures related to customer satisfaction (user perspective), internal processes (internal perspective) and the ability to innovate (innovation perspective) (Kaplan & Norton, 1992). The BSC has been applied in the IT function and its processes; and the use of an IT BSC aligned with a business BSC may support the IT governance process (Van Grembergen et al., 2004). The IT BSC should aim at: i) aligning IT plans and activities with business goals and needs; ii) aligning employees' goals toward IT aims; iii) developing measures to evaluate the effectiveness of the IT; iv) maintaining IT performance; and v) achieving balanced results among stakeholders. Indeed, the use of an IT BSC drives an organization IT strategies and the IT follow-up.

An organization's business BSC may indicate that its strategy is to reach more shareholders / investors, clients and public at large (three groups of stakeholders explicitly referred to in the corporate mission) (user perspective) more quickly. This could be reflected in the communication strategy and in the IT BSC by choosing to use web site technology and to develop the organization's web site content (internal perspective). To do so, the firm might decide to train and educate IT staff in emerging technologies (innovation perspective). If a firm aligns its IT goals to its business goals, it might also align its web site aim with these goals. The firm could hire employees with high IT skills and experience with

web site content maintenance and improvement. This could influence the strategic planning and monitoring mechanisms related to web site content.

CobiT framework

A CobiT framework can support IT governance (ITGI, 2006). It can be used by management to assist in balancing risk and control; auditors can also use it to support their opinion or to provide advice to management on internal controls (Bodnar, 2006). With four groups of processes (plan and organize; acquire and implement; deliver and support; monitor and evaluate) to manage IT resources, this framework gives the information that an organization needs to achieve its strategic goals (Damianides, 2005). It helps to deal with security, integrity, reliability and quality of information provided. Among the 34 guidelines suggested by CobiT with respect to those groups of processes, an organization may: i) define a strategic IT plan, communicate top management's aims, manage human resources and IT investments, and assess risks to plan and organize IT activities; ii) assess internal control adequacy, ensure compliance with external requirements and evaluate the IT performance (ITGI, 2006).

The principles derived from a CobiT framework may be used to improve strategic planning and monitoring mechanisms related to web site content. Strategic planning could lead a firm to define a web site's aim, to communicate it to employees, to anticipate financial and human resources needed to maintain and improve the web site content and to identify risks inherent to web-based disclosure. Monitoring may assume the assessment of internal controls that ensure the integrity and the reliability of information disclosed on web site. It may need to develop mechanisms to ensure that this information is in line with regulatory requirements.

RESEARCH METHOD, in brief

Case studies are expected to be done in about four to six medium-to-large organizations. In each of the firms, the manager in charge of the web site, a top executive in charge of IT (CIO, IT executive), a member of the board of directors, and an internal auditor in charge (if applicable) will be interviewed. The selection of organizations will be based on a combination of criteria related to the conceptual framework (e.g. presence of IT executives or IT board members; use of CoBiT or IT BSC). In order to keep the overall context as constant as possible, firms will be selected from one or to business sectors. The selection of those business sectors will be influenced by the accessibility of organizations.

The conceptual framework and consulting interviews lead to the development of an interview guide (under development, Appendix). Overall, questions will mainly focus on who (executive team, board members, auditors) is doing what (planning, monitoring), why (strategic reasons), when (at what point in time) and how (means). The interview guide will be tested in a pilot case and then used in semi-structured interviews. Data collected by recorded interviews will first be transcribed. They will then be organized and coded in the light of Miles & Huberman (1994) and Yin (2003). The analysis will lead to the description of profiles organized around different IT governance factors and strategic control mechanisms related to web site content. A within-case analysis will allow to describe the structures, processes and mechanisms for each organization. A between-case analysis will focus on the commonalities and differences between them.

EXPECTED CONTRIBUTIONS

To our knowledge, this study represents the first step at examining key components of the IT governance and strategic control environment surrounding the web-based disclosure process. The

identification of IT governance and strategic control profiles should be interesting for organizations concerned about how to improve their web site content, and about the role of top managers, the board of directors and auditors in the web-based disclosure process. It should help them to develop a policy to be included in their governance mechanisms, in order to oversee and coordinate web-based disclosure. More specifically, IT governance and strategic control may help firms to deal with important issues such as information security, reliability and integrity, information overload and risk management related to web-based disclosure.

Disclosing information on web sites has the potential to improve the transparency of organizations. By integrating IT governance and strategic control into the analysis, results should suggest issues to be considered by accounting standard-setters and regulators. By having a better understanding of the key strategic planning and monitoring mechanisms with respect to financial and non-financial web site content surrounding the organizations, they should be more able to assess the relevance to develop governance guidelines related to web-based disclosure.

Overall, this study is expected to contribute to the governance, strategic and IS management literature by focusing on IT governance and strategic control. It also aims to contribute to the web-based reporting literature. Since efforts will be made to get the perceptions of three (or four) subjects by firm, it should lead to develop hypotheses that could be tested in further empirical research.

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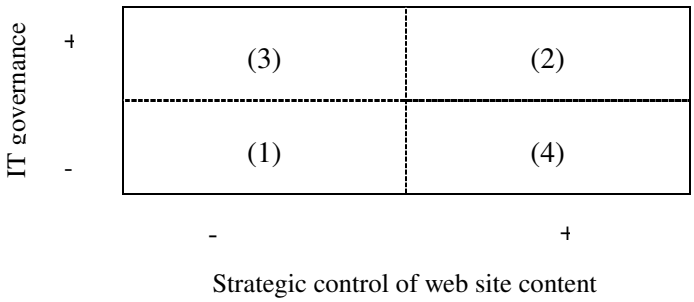

Fig. 1 Level of IT governance and strategic control of web site content

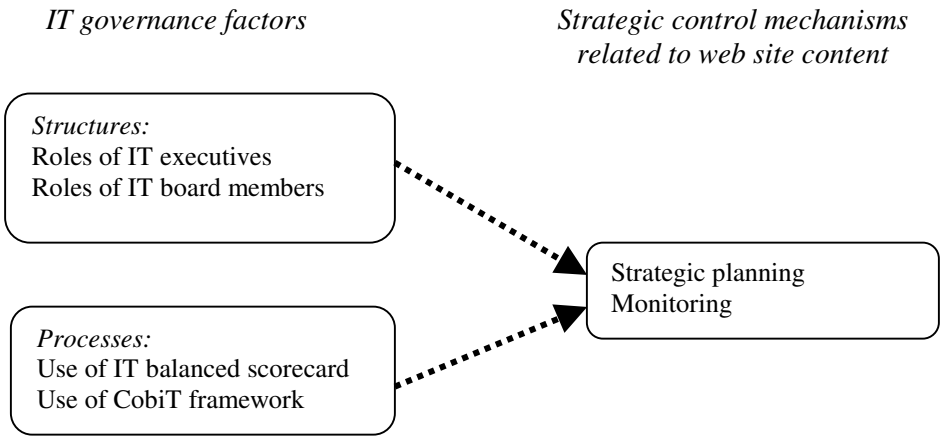

Fig. 2. A priori model

APPENDIX – Interview guide (preliminary draft)

IT governance structures

Is there a top executive or a board member in charge of IT and, if so, what is the professional background of those IT executives and IT board members?
What are their current roles? Have their roles evolved over time?
Are they involved in IT strategic planning and monitoring and, if so, to what extent?
What is the relationship between the IT executive and the IT board member?

IT governance processes

Are IT BSC or CobiT framework used by organizations and, if so, who is using them and how are they used to plan and monitor IT activities?
Does an IT BSC refer to web site content development / improvement / management?
Is a CobiT framework used to control the web site implementation / redesign, or to monitor the web site content? If so, has it been used by internal auditors?

Strategic planning related to financial and non-financial web site content

Are web site objectives formulated and, if so, what are those objectives?
Are strategic decisions about web site content incorporated into the organization's overall communication strategy?
Are strategic actions coordinated with this strategy?
Have the risks inherent in web-based disclosure been identified (e.g. lawsuit if information is wrong, providing strategic information to competitors)?
Are actions anticipated to manage those risks?
Are stakeholder information needs, as well as financial, human and material resources anticipated on a long-term basis?

Monitoring related to financial and non-financial web site content

Are the executive team or the board members concerned about with issues such as security, reliability and integrity of information, as well as information overload?
More specifically, who is concerned? Why are they concerned (e.g. compliance with regulations, avoiding lawsuits, creating value, etc.)?
What mechanisms are they using to follow up on those concerns?
How and when are they used?

(under development)