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GROUNDING PRINCIPLES FOR GOVERNING WEB 2.0 INVESTMENTS

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ABSTRACT

More and more organisations are becoming intrigued by the huge impact of web 2.0 and social software in the personal domain. Just think about Facebook, Myspace, Twitter and the like, which have all but become houshold names. Some organisations have already started to investigate whether web 2.0 technologies can improve collaboration patterns between their own constituents and constituents from outside the organization. From a series of case studies on such initiatives, we were able to propose a set of grounding prinicples for governing web 2.0 investments. The proposed principles are specifically geared towards maximizing benefits realization from these inherently open and social platforms. In this paper, we refer to processes of structuration and information systems (IS) benefits realization to pinpoint how governing web 2.0 investments will be quite different from the rather controlling instantiations of IS investment governance inherited from past investments in enterprise systems.

INTRODUCTION

During the early years of the World Wide Web, also commonly referred to as the internet, there was relatively little engagement between content providers and end-users, or between end-users. Although some specialized communities, such as newsgroups, approached the internet as an open, decentralized, participative platform, not many content providers really did. Communication occurred mainly in a top-down, one-to-many, centralized mode of content broadcasting. In many ways the internet remained similar to already existing media such as television or radio. This first era of development is now being referred to as web 1.0.

The advent of web 2.0 has been about embracing the inherently open and social characteristics of the internet. It supports a profound change in communication toward a many-to-many, decentralized format. The latter favors the emergence of bottom-up trends rather than the design of top-down, paternalistically imposed strategies and structures. Web 2.0 applications aspire to make maximal use of the level playing field for engagement offered by the internet, both technologically and socially (O'Reilly, 2005, 2006). The World Wide Web has thereby entered "the realm of sociality" (Bouman et al., 2007), where software becomes fused with everyday social life. Social software applications such as Wikipedia, Facebook and MySpace have all but become household names.

Both practitioners and researchers are converging on the usefulness of web 2.0 for professional organizations. Companies like Procter & Gamble, Amazon and many others have indeed started to garner a respectable amount of experience on their use of web 2.0 technologies. What we have observed, and others with us (e.g. Bughin & Manyika, 2007; Koplowitz & Young, 2007; McAfee, 2006a), is that the way for organizations to capture benefits from web 2.0 technology differs substantially from the way they attended to information technology (IT) projects in the past. It is still early days in terms of learning from enterprise 2.0 experiences. What stands out already, however, is that management will have to find new ways of governing to respect the freedom, openness, and sociality inherent to web 2.0 technologies.

In this chapter we propose a set of grounding principles for governing web 2.0 investments. These grounding principles refer to attention areas and key choices that management ought to pay heed to if it wants to successfully invest in web 2.0 for the enterprise. The position presented in this chapter stems from a combination of literature review and case studies of Belgian companies with experience in introducing web 2.0 into their enterprise. We are grateful to the Flemish government, more specifically the government agency Flanders District of Creativity, for having supported this research. A word of gratitude also goes out to Deloitte, Möbius Consulting, and SAS Institute.

The chapter is organized as follows. We first provide some background information on web 2.0. We then move on to problematize the notion of governance and introduce the need for an appropriate type of governance. Finally, we outline our set of grounding principles for governing web 2.0 investments.

BACKGROUND

If anything, information systems (IS) researchers have established that there can be a wide gap between investing in an IT resource and realizing business value from its use. Consequently, any such investment comes with a certain degree of risk. From Peppard & Ward (2004), we borrow a general view on organizational benefits realization from IS. Their framework allows us to distinguish between three categories of concepts which co-determine the value created by an IS: the ends (organizational objectives), the means (IT artifacts), and the ways (new working practices). We use this framework to organize this background section on web 2.0.

Web 2.0 – The Ends

McAfee (2006a) coined the term enterprise 2.0 to describe companies buying or building platforms with wikis and social networking software to support and enhance the continuously changing and emergent collaborative structures of knowledge work across the (extended) enterprise. Organizations that have chosen to embrace the next generation internet are using the technologies not least to provide users, inside and outside of the enterprise, with the operational means for achieving high-aimed objectives such as stimulating collective creativity and open innovation.

Collective creativity: "Collective creativity reflects a qualitative shift in the nature of the creative process, as the comprehension of a problematic situation and the generation of creative solutions draw from – and reframe – the past experiences of participants in ways that lead to new and valuable insights," (Hargadon & Bechky, 2006, p. 484). This concept forms a counterweight to a traditional approach to innovation as a chain of top-down initiated innovation projects executed by relatively fixed and closed teams.

Open innovation: "Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology," (Chesbrough et al., 2006, p. 1).

Web 2.0 – The Means

Literature search and our own case study work led us to identify six structural capabilities embodying the promise of web 2.0 technology (see e.g. O'Reilly, 2005, 2006; McAfee, 2006a, 2006b; Murugesan, 2007; Parameswaran & Whinston, 2007):

1) The software enables reuse and combination of different applications and data from different sources.
2) The software enables flexible design, quick updates, and adaptability.
3) The software enables collaborative content creation and modification.
4) The software does not impose predefined structure on the content.
5) The software provides a rich, responsive and personalized user interface.
6) The software enables gathering of collective intelligence.

Creating an awareness of the capabilities embodied by a type of technology not only serves to help people understand why the technology could be useful. Making people mindful about the capabilities of the technology is an absolute precondition to benefits generation with the technology. Some of the skepticism among businesses and IT professionals with respect to web 2.0 has been attributed to this very lack of understanding (Murugesan, 2007).

Web 2.0 – The Ways

Technology alone will not guarantee an organizational success. Realizing the objectives of a software implementation depends heavily on how an organization and its constituents will interact with the given technological artifacts and sustain their use within the fabric of the enterprise. It is well established in the IS literature that the most ambiguous, yet critical part of realizing the aspired benefits from an IT investment is providing for the right organizational complements to the technology (McAfee, 2006a). The latter come in four flavors:

1) *Empowerment*: the attribution of decision rights and responsibilities
2) *Processes*: incrementally improved or radically re-engineered business processes
3) *Collaboration*: new ways of forming teams and collaborating in teams
4) *People and culture*: developing mindfulness and skills of stakeholders, including employees, customers, suppliers, and other partners

To serve as guidelines for organizations embarking on a web 2.0 journey, we propose four grounding principles, one for governing the management of each of the above types of organizational complements. These principles are geared toward a maximal exploitation of the inherently open en social nature of the technology platform. Before we lay down this set of grounding principles, we elaborate on the need for a type of governance appropriate to realizing the benefits from a web 2.0 investment.

APPROPRIATE WEB 2.0 GOVERNANCE

Governance is an organizational design activity that serves to simultaneously restrict and enable management. In line with the encyclopedic entry on Wikipedia (2009), the activity of governing involves: a) defining expectations for the organization and its constituents, b) specifying allocation rules for the resources to help accomplish these expectations, and c) defining the framework to verify the organization's performance. IT governance according to Weill & Ross (2004) intends to encourage desirable behavior in using IT, in this case web 2.0 technology.

Governing the way an IS investment is managed always implies striking a balance between two views on organizational benefits realization. On the one hand, encouraging desirable behavior in using a corporate resource ultimately relates back to the proper

articulation of the enterprise's aspired strategic identity (Weill & Ross, 2004). This serves as an a-priori specified boundary or control mechanism for managing the realization of benefits. On the other hand, when engaging with an IT artifact, users also automatically set in to motion a process of structuration (Orlikowski, 2000). This process occurs regardless of any intent attributed to the investment by its initiators.

Structuration theory (Orlikowski, 2000) distinguishes between a) the capabilities of an IT artifact, and b) the meaning attribution by users that emerges from its ongoing use. By using the artifact and integrating the (non-)use into their work practices, users attribute a certain meaning to the technology. Users will begin to change or reinforce social patterns, i.e. structures embedded in the organization. From that point of view, the benefits realized by the technology become a function of the interaction between the users and the technology, and the ensuing social patterns of meaning attribution by the users.

Our problematization of governing web 2.0 investments emphasizes the importance of structuration as a key process for realizing benefits with the technology. The nature of this technology's capabilities stimulates a particularly reciprocal relationship between the technology and its users. Also, the open-ended nature of lofty aspirations of collective creativity and open innovation clearly alludes to an environment that leaves certain degrees of freedom for meaning attribution by users. Therefore, in formulating our set of grounding principles for governing web 2.0 investments, we have been especially mindful of the need for governing with reference to structuration. In other words, special attention is given to the importance of carefully balancing control and emancipation objectives in specifying the framework for encouraging desirable use of web 2.0 technologies.

GROUNDING PRINCIPLES FOR GOVERNANCE

On an organizational level, benefits can be protected and risks can be mitigated by paying the necessary attention to the appropriate type of IT governance. In what follows we have coined a set of four grounding principles for governing web 2.0 investments toward optimal benefits realization. We have formulated these principles in a context-free way, that is, disregarding the specific circumstances and choices of particular enterprises and their leadership. We firmly believe that any particular enterprise's set of principles for governing web 2.0 investments can benefit from inheriting the spirit embodied in the following four principles.

Empowerment

Principle: *"We focus on empowering users to discover the desirable use of the technology, rather than having users comply with a pre-specified set of rules to counter a-priori notions of unwanted use."*

In a web 2.0 context, it is important to acknowledge that the focus of governance, by way of principle, is to enable desirable use instead of merely drawing up barriers to unwanted use. Moreover, the notion of unwanted use itself, especially from an a-priori point of view, remains a controversial one. Users ought to be given enough freedom, even power, to let value emerge from their use of the technology. Users and managers will do well to focus relentlessly on whether the desired benefits are being realized, rather than on how the system might be abused.

This principle embodies a dynamic notion of governance. As the desirable use of the IS grows organically the governance of its use may have to adapt. Consequently, governing web 2.0 investments becomes an evolving process rather than a one-off design activity. A pre-ordained attribution of decision rights and responsibilities may well deny the web 2.0 investment the possibility to reach its full potential. Yet, guidance in view of this overarching plea for freedom will be needed, if only to increase the focus on desirable benefits and to decrease the possibility of negative results. People's (proven) competency is likely to emerge as an important, if not the most important, driver of what governance will emerge.

In 2008, travel agency Connections launched a social networking system enabling its employees to digitally share travel experiences. The company was convinced that sharing such stories would enrich employees' advice to shoppers. The management also firmly believed that governance was best left to emerge from the actual use of the system. Thus, it empowered employees to co-design the system and take up roles and responsibilities as they saw fit whilst making use of the system. So, much like in Wikipedia, employees were free to take up roles as content contributors or reviewers. What was more, it was left to the employees' to decide to spend time working on the platform during working hours. This was very different, for example, from how they had approached the governance for their transactional applications in the past. In those cases, governance was carefully specified up front. Compliance was the name of the game in that operational environment.

Processes

Principle: *"We stimulate emergent content creation and collaboration developments as important value creating activities. Because of this, rather than just adhere to top-down institutionalized business processes, process workers and managers will be enabled to capture value by progressively synthesizing better patterns for processing."*

A business process is "a [coordinated] collection of activities that takes one or more kinds of input and creates an output that is of value to the customer," (Hammer & Champy, 1993). Many organizations have used the institutionalization of explicit business processes as a means to industrialize best practice ways of working. In a web 2.0 setting, however, process governance ought to be mindful of the evolving nature of best practice. This implies that, by default, process governance needs to embrace a continuous improvement approach. Process workers and managers will actually be continuously designing and improving processes along the lines of the latest collective knowledge.

From a practical point of view, it is important that enough explicit attention is paid to learning from past successes and mistakes to complete the organizational learning loop. Web 2.0 technology is conceived to support this learning. The technology enables process workers to reflect, synthesize on and redesign the work while at the same time performing it. Process governance in a web 2.0 environment serves to responsibilize workers and have them act as both value creators as well as value capturers.

High-tech manufacturer Bekaert launched its Innovation Portal in 2004. The objective was to reinvigorate the fuzzy front end of their innovation funnel, i.e. the early idea generation phase of the innovation process. Bekaert's management decided not to spend a lot of time pre-engineering this part of the process. Rather, Bekaert focused on promoting the use of several different functionalities embedded in the portal to loosely guide the processing of ideas. For example, peer-review functionalities enabled participants in the process to review and vote on each others' ideas and suggestions. By combining data on items such as the number of page views, review ratings, and attributed tags, the system periodically synthesized the outcomes of the continuously evolving idea generation processes by creating rankings on the portfolio of ideas discussed on the platform at any given moment. Also, by making past trails of ideas, suggestions and projects easily retrievable through intelligent search capabilities, the employees were encouraged to refrain from re-inventing the wheel, to learn from past

mistakes and to pick-up on old ideas that might have been dismissed at first. Visionaries in the company believed that, over the long haul, advanced data mining could even be applied to the logs of the engagement patterns in the process to help boost the search for more efficient and effective patterns for processing ideas.

Collaboration

Principle: *"We leave enough freedom to let (virtual) communities and teamwork emerge from a free-flow of collaborative engagements, rather than to pre-assign the bulk of roles, activities, and access rules."*

Collaboration is a central theme for investments in web 2.0. The organization will only achieve its enterprise 2.0 objectives if the work performed by the individual members is incorporated into a greater whole of patterns of activities, interactions, and relationships. Successfully governing this constellation of engagement patterns in a web 2.0 universe differs substantially from setting up a hierarchical or functional concept of team collaboration. The technology does not limit the way people collaborate. In the end, it is all about facilitating a self-sustaining ecosystem that emerges out the web of individual contributions. If knowledge sharing and collaboration halts, the system basically ceases to exist.

Management should be wary of limiting access, connections, and contributions only to specifically assigned team members. The mantra should rather be to encourage all possible constituents and contributions as being potentially useful until proven dysfunctional. Collaborative value is not derived from guarding individual compliance, but rather emerges from the freedom of individuals. Of course, for this to work properly each individual must be aware of his own responsibilities and be willing to take up some. Also, the community of users should be able to hold individuals accountable for their contributions and intervene when necessary. This assumes that management actively stimulates the use of the available features of the technology for supporting a kind of emergent, evolutionary auto-governance of the collaboration.

From our case research it seems that creating and respecting the necessary room for auto-governance remains rather tough within contemporary enterprises. As web 2.0 systems grow, the likelihood increases that management raises security, privacy, or other concerns – some of which may actually be rooted in a perceived loss of power and control. This can have a potentially devastating effect on the level of collaboration. At Bekaert, for example, they placed few limits on the access rights to their Innovation Portal for employees. However, the

company's management was convinced that because of possible intellectual property rights issues, access rights had to be seriously downgraded for their external partners. In the end, while the internal idea market flourished, the external contributions never reached the level that management originally had hoped for.

In 2008, GDF SUEZ Group's technical competence and research center for electricity, Laborelec, began to pilot web 2.0 tools. Their goal was to enhance knowledge sharing and encourage the emergence of communities of practice. When asked about the most important lessons learned from the first set of pilots, participants highlighted the possibilities for autonomous knowledge accumulation and development without too much external control. Granted, not everything was allowed or possible. There were some strict ground rules and constraints governing the use of web 2.0 applications. However, every single one of these was collaboratively put in place, never imposed, and continuously exposed to challenging based on emergent trends and patterns of better practice. Based on their experience, Laborelec believed strongly that if participants would not be able to perceive the platform as being a natural knowledge sharing environment made for and, more importantly, by the participants, then the platform simply would not survive. As a result of their learning from the pilots, in early 2009, the company drew up a "Charter for Knowledge Initiatives". This Charter clearly stated the primacy of supporting a bottom-up drive for making the case for such projects.

People and Culture

Principle: *"People are invited to cooperate. They are stimulated, guided, and continuously convinced of the value of cooperation, rather than coerced into doing anything or working in particular ways."*

Ideally, a web 2.0 system starts out as an open invitation for an individual to join a collective. The invitees have a free choice to either take part in the system or not and thus ultimately help shape the finality and value of the system. Of course, this implies that they understand and appreciate the why, the what, and the how of contributing to the collective. They need to see what could be in it for them. Growth of the system is fueled by the provision of attractive functionalities to potential users. Interestingly, functionalities do not have to be strictly limited to what is functional to the organization or the work. Offering entertainment functionalities, for example, can certainly entice some users to take part.

Management can definitely give a push; for example, by promoting awareness about the capabilities of web 2.0, by incentivizing people to actively contribute to value creation and

value capturing activities, by learning them to value peer feedback and how to make use of it, and by nurturing the role of advocates of web 2.0, who actively pursue and exemplify the benefits of collaboration via the platform. At Tele Atlas, for example, management understood they had only one option to promote a move away from a bottom-up created, yet potentially unsecured open source wiki-system, Adoption of a secure, commercial web 2.0 system, would only be possible through word to mouth advocacy of the extended functionalities of the new system. Even without having to take recourse to constricting employees' access to the open source system, one and a half years later the viral campaign appeared to have worked and the open source system is hardly mentioned any more.

For some people, participation in a web 2.0 experience goes against a natural inclination to protect their own ideas, or a reluctance to put their ideas and opinions to the test of collective judgment. These people nevertheless ought to be stimulated to participate in an open knowledge and experience sharing culture. They need to understand that judgment as such is not the goal of sharing, but knowledge enrichment is. For example, a change in the bonus system could help to grow a web 2.0 system. Why not reward people who share great ideas for further development, rather than people who simply submit them secretively to an idea box?

CONCLUSION

The promise of web 2.0 is enticing to many organizations. However, experience and research into managing such investments to effective benefits realization has not yet reached full maturity. Still, based on literature search and our own case research, we have argued in this position paper that due to the nature of the technological capabilities and organizational aspirations for achieving high-aimed ends like collective creativity and open innovation, organizations would do well to investigate the implications for governing web 2.0 initiatives.

In an attempt to help out, we have synthesized four grounding principles for governing web 2.0 investments that fit the ambition levels and the technological capabilities. We believe that these principles will be particularly useful for organizations that are investigating the potential of web 2.0 investments for their enterprise. It can help them understand the implications for designing how they will manage benefits realization. It is now up to the leadership of organizations to take up the set of grounding principles presented in this chapter and cast them onto their own specific context.

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KEY TERMS AND DEFINITIONS

Collective creativity: "Collective creativity reflects a qualitative shift in the nature of the creative process, as the comprehension of a problematic situation and the generation of creative solutions draw from – and reframe – the past experiences of participants in ways that lead to new and valuable insights," (Hargadon & Bechky, 2006, p. 484).

Enterprise 2.0: McAfee (2006a) coined the term enterprise 2.0 to describe companies buying or building platforms with wikis and social networking software to support and enhance the continuously changing and emergent collaborative structures of knowledge work across the (extended) enterprise.

Governance: Governance is an organizational design activity that serves to simultaneously restrict and enable management. The activity of governing involves: a) defining expectations for the organization and its constituents, b) specifying allocation rules for the resources to help accomplish these expectations, and c) defining the framework to verify the organization's performance.

IS benefits realization: A general view on creating organizational benefits from IS. It distinguishes
between three categories of concepts which co-determine the value created by an IS: the ends (organizational objectives), the means (IT artifacts), and the ways (new working practices).

Open innovation: "Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology," (Chesbrough et al., 2006, p. 1).

Structuration theory: A sociological theory applied to the field of IS by, amongst others, Orlikowski (2000). The theory helps to describe how social structures, that is patterns of social interaction, are developed, changed or re-affirmed through a) users interacting with an IT artifact, and b) users attributing meaning to the technology by integrating the (non-)use into their work practices.

Web 1.0: Web 1.0 refers to the early years of the internet. It marks an era where the main mode of communication between content providers and users was predominantly top-down and centralized. In fact, during this era, the web was very much approached as a continuation of traditional broadcasting media such as television or radio.

Web 2.0: The introduction of the notion of web 2.0 is all about embracing the inherently open and social characteristics of the internet. The transition from 1.0 to 2.0 represents a profound change in communication toward a many-to-many, decentralized format. Web 2.0 favors the emergence of bottom-up trends rather than the design of top-down, paternalistically imposed strategies and structures. Web 2.0 applications, often referred to as social software, aspire to make maximal use of the level playing field for engagement offered by the internet, both technologically and socially.

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