Research in Progress: An Integrated Model to Predict, Guide and Measure Enterprise 2.0 Maturity

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ABSTRACT

Research has shown that social software platforms have gained presence within the corporate world the last decade. Its goal of facilitating knowledge workers with the use of specific social software applications (called 'enterprise 2.0' in this paper) opens up the path to create a theoretical model based on the well studied areas of *organizational learning*, *organizational culture* and *IS acceptance*. In this paper, we present a research-in-progress study that follows the design science research methodology to construct and operationalize an integrated framework to predict, guide and measure enterprise 2.0 maturity. We derive our model from literature research conducted in the three aforementioned disciplines and propose a contextual setting to demonstrate its validity in a series of case studies.

1 INTRODUCTION

In the last decade new digital platforms for communication, collaboration and coordination are emerging and become increasingly more important in everyday's society (Mathioudakis & Koudas 2009). These platforms comprise a wide area of applications varying from social networking services, collaborative filtering, social bookmarking, social search engines, file sharing and tagging to instant messaging, wikis, blogs and podcasts (Kamel Boulos & Wheelert 2007; O'Reilly 2005). More recently these new platforms also gain presence in the corporate world where they are to become essential to knowledge workers in facilitating their day to day work, because it "reflects the way work really gets done" (McAfee 2006). Not surprisingly this coincides with the understanding of shifting from the industrial to the knowledge worker era where these platforms are used to support the evolving challenges workers face within the modern learning organization (Covey 2004; Uhlbien et al. 2007).

DiMicco et al., (2008) argue that the use of such platforms strengthens the bond between colleagues within an organization, facilitates innovation from within the organization, enhances its social network and is beneficial to ones career. It is therefore not surprising that social software is named one of the top 10 technologies and trends that will be strategic for most organizations in 2009: "(organizations) should adopt a social platform sooner, rather than later, because the greatest risk lies in failure to engage and thereby, being left mute in a dialogue where your voice must be heard" (Pettey 2008). In line with this trend Chun & Mooney (2009) conclude that the role of an organizations Information Manager over the last twenty-five years is indeed changing into this responsibility of organizational learning. Various terms are used for adding such a social dimension to existing information platforms, among them Enterprise 2.0 (McAfee 2006), Social Networking (DiMicco et al. 2008) and Social Software (Koskinen 2006). In this paper we use the term *Enterprise 2.0* for this type of organizational social software because we argue that the availability of such an new platform can be seen as an Information Systems (IS) evolution enabling connections on a social level within an organization: the next 'version' of an enterprise.

Although it might seem that organizational social software is a relatively new phenomenon, we propose that the underlying goal of it – facilitating knowledge work - is intensively researched already within the field of knowledge management. Liao et al. (2008) and Liao & Wu (2010) stipulate the need for organizations to adapt and update its knowledge to keep their competitive edge. According to Zheng et al. (2009) knowledge management also increases organizational effectiveness. Studies on both organizational social software and knowledge management also have in common the perceived importance of the organizations learning capabilities. Chen et al. (2003) argue that "organizational

learning is as important as positive cash flow for an organization's survival in today's global market". McAfee (2006) emphasizes the new role managers have to play in creating a receptive culture. The relationship between the ability for an organization to learn and its managerial support is also documented by Schein (1996) who states that without this learning ability an organization remains "competitively marginal". The role organizational culture has on the ability of adapting IS-enabled change is also researched. Based on 12 case studies, Martinsons et al. (2009) identifies 5 key issues that determine the success of software implementation. This aspect of software adaptation, that reflects the actual use of the social software components on a individual basis, is another similarity that emerges from literature. McAfee (2006) identifies in this area two additional threats that block successful adaptation: turning knowledge users into knowledge creators and the observation that knowledge sharing will no longer be under the control of general management. Threads that are also indentified in the area of knowledge management by Yang (2007).

From the above we argue that organizational social software is the next step in organizational knowledge management: leveraging the principles of knowledge management by utilizing new digital platforms available from IS innovation. Although the literature seems to suggest that the adaptation of social software is inevitable to succeed in the knowledge era, practitioners seem to struggle with the successful implementation of it (Mann et al. 2009). Based on the initial literature research we found three emerging themes in this research field: organizational culture (McAfee 2006; Zheng et al. 2009; Martinsons et al. 2009), organizational learning capabilities (Schein 1996; Chen et al. 2003; Skerlavaj et al. 2007; Liao et al. 2008; Lee & Kim 2001) and IS acceptance (DiMicco et al. 2008; Koskinen 2006). Therefore we argue that when adopting social software organizations should at least consider those three themes.

Both scholars and practitioners seem to recognize the opportunities and challenges in successfully adapting organizational social software. However, though intensive research is available in these three separated areas, we found no integrated model to guide such a successful transformation combining those three dimensions. Our research tries to fill that gap by presenting an integrated framework to predict, guide and measure the transformation to a social software enabled organization, based on the principles of the aforementioned three domains. Our central research question in this paper is therefore:

What integrated model can be constructed to predict, guide and measure Enterprise 2.0 maturity?

Comment [JV1]: Also: provide a strategy for maturing?

The model that emerges from our work can subsequently be used by scholars for further research and by practitioners to guide social software projects within organizations. Our research methodology follows the design science research methodology as demonstrated and evaluated in Peffers et al. (2007). We derive our model from academic research conducted in the three emerging disciplines and propose initial steps to validate the framework in a series of case studies that will demonstrate its "utility, quality and efficiency" (Hevner et al. 2004).

Comment [JV2]: Why is this approach the most appropriate for your research question?

The rest of this paper is structured as follows. The next section examines the available literature on the three main areas of our research: *organizational culture*, *organizational learning capabilities* and *IS acceptance* in order to provide a solid theoretical basis for the construction of our enterprise 2.0 framework. Section 3 describes the operationalizing of the framework from literature. Our proposal for validating the framework in a series of case studies is described in section 4. Section 5 sums up the initial findings of our research-in-progress.

2 THE ENTERPRISE 2.0 FRAMEWORK: THEORETICAL BASIS AND CONSTRUCTION

As we have discussed in our introduction, the term enterprise 2.0 is used for organizations that use web 2.0 capabilities within their internal environment to "make visible the practices and outputs of their knowledge workers" (McAfee 2006). Although the beneficial aspects of adopting those elements are widely recognized by scholars (Hill & Fichman 2009; Sutter 2009; McAfee 2006) scientific publications concerning how to achieve such an enterprise 2.0 remain elusive (Blinn et al. 2009).

In this section we therefore combine the three emerging themes *organizational culture*, *organizational learning capabilities* and *IS acceptance* we have distilled from the well studied field of knowledge management (Zheng et al. 2009; Martinsons et al. 2009; Schein 1996; Chen et al. 2003; Skerlavaj et al.

2007; Liao et al. 2008; Lee & Kim 2001; DiMicco et al. 2008; Koskinen 2006) with web 2.0-specific capabilities and link those themes in order to build a rigorous theoretical foundation. Although we acknowledge that next to the three mentioned, other research areas may be of relevance to our subject, we argue that the scope and depth of the aforementioned scientific literature enables us to construct our enterprise 2.0 framework that will be theoretically sound.

organizational culture

The first layer of our theoretical foundation is organizational culture. Whereas enterprise 2.0 remains almost a scholar's greenfield, a true myriad of publications on organizational culture exist, going back at least 65 year when Linton (1945) described "a configuration of learned behaviors and results of behavior whose component elements are shared and transmitted by the members of a particular society". As argued by Smit et al. (2008) scholars in 1990 recognized that even at that time there were "as many definitions of culture as there are so-called experts on the subject". Although the purpose of this section is not to replicate this multitude of definitions and views, we review existing literature to distill the elements that are most relevant within the context of IS. To this purpose we examine publications that (1) are theoretically sound, peer-reviewed and published in highly-ranked sources, (2) focus on the *applied* aspects of the topic instead of theoretical studies and (3) have an extensive literature overview themselves on organizational culture.

On defining organizational culture, Kappos & Rivard (2008) find that although "conceptualization of culture differ among researchers", their extensive literature review of 28 examples from IS research can be clustered into 3 distinctive manifestation types: artifacts, practices and content themes. Such a categorization of cultural aspects is also used by Smit et al. (2008) who define them as the hidden, visible and results domain and Steen (2005) who uses the concept of visual artifacts, shared values and shared assumptions. Smit et al. (2008) acknowledge that in this surplus of views on the subject two definitions emerge that can be eloquently used to summarize organizational culture as "the way we do things around here" (Bower 1966) and "the way we think about things here" (Maull et al. 2001). Although these definitions seem trivial at first glance, they unmistakably link organizational culture to the domain of enterprise 2.0 for which the limited available publications mention the need for "the embracing of technology" throughout the enterprise (Frappaolo et al. 2009), as well as "a receptive culture" (McAfee 2006). Based on these findings we propose that the concept of such a "receptive culture" should therefore be considered as part of our theoretical framework foundation.

Research on organizational culture also explores its influence on behavior and attitude of individuals within the organization. This is relevant for our theoretical framework because preliminary research by Frappaolo et al. (2009) on sponsorship/ownership of enterprise 2.0 initiatives reveals that the majority is driven bottom-up (user-driven) as opposite to top-down (management-driven). We argue that this calls for an organizational culture that stimulates individual initiative. On this subject both Lau (1996) and Martinsons et al. (2009) adapt the five dimensions of culture originally defined in Hofstede's seminal work on culture (Hofstede 1980) in order to determine factors that influence information systems. Martinsons et al. (2009) find a negative correlation between high individualism cultures and the adoption of IT applications to support collaboration. As collaboration is (not surprisingly) named as a key ingredient of the enterprise 2.0 concept (McAfee 2006), we argue that the cultural aspect of influencing individuals (to share knowledge) within an organization should also be used in our theoretical framework. This is further substantiated by an empirical study by Dasgupta & Gupta (2005) that "shows that organizational culture had an impact on individual acceptance and use of Internet technologies".

Based on the above literature review, we already identified two aspects that need to be part of our framework ("a receptive culture" and "influencing individuals (to share knowledge)". Research on organizational culture show that the domain of organizational culture is tightly linked to the field of organizational learning. Scholars find that that "the lack on alignment (of internal cultures) causes the failures of organizational learning" (Schein 1996) and that organizational learning capability is influenced by the arguably cultural dimensions "managerial commitment, systems perspective, openness and experimentation and knowledge transfer and integration" (Jerez-Gomez et al. 2005). Skerlavaj et al. (2007) simply combines the two concepts and proposes an undividable concept of

"organizational learning culture". Because of this obvious link between the two fields of research, it is therefore that we first review the theoretical basis of *organizational learning capabilities* before we combine the aforementioned research on organizational cultural aspects into our reference framework.

organizational learning capabilities

The phenomenon of organizational learning may be an even harder to grasp concept in modern research literature than that of organizational culture already is. Although the importance of organizational learning as a means to improve bottom-line performance may be widely accepted (Tanriverdi 2005; Jiménez-Jiménez & Cegarra-Navarro 2007; Skerlavaj et al. 2007; Liao & Wu 2010), scholars struggle to indentify the delicate interaction between individual learning and a collective "organizational memory" (Jerez-Gomez et al. 2005). This meta-level as a necessary nutrient pool for the growth of individual knowledge and vice versa is "perhaps the least understood of the intangible assets" of an organization (Kaplan & Norton 2004). We argue however that this concept is not unlike that of an "receptive culture" identified earlier. Analyzing literature over the last 20 years Jerez-Gomez et al. (2005) conceptualize organizational learning "as the capability of an organization to process (or manage) knowledge". This aligns with findings by Liao & Wu (2010) who state that organizational learning is in fact the processing engine to enable "organizational innovation". Furthermore, this innovation power to guide an organization into new directions "has a positive effect on performance" (Jiménez-Jiménez & Cegarra-Navarro 2007).

With the ambition of innovation through knowledge management the link with IS in general and enterprise 2.0 in particular becomes apparent. Notwithstanding the provocative view in Carr (2003) that "IS doesn't matter", scholars seem to agree that the proper IT strategy perspective can indeed make companies outperform others (Chan & Reich 2007). The widely supported view that not the *presence* of IS but the specific *use* of IS makes a difference, is also applicable to the field of knowledge management and organizational learning. Ruizmercader et al. (2006) argue that "information technology has a significant impact on outcomes only when in a proper context of learning is in place". It is therefore not surprising that organizational learning is named "one of the key issues" in the IS research field (Chen et al. 2003). In recent research and more specific to enterprise 2.0, Boateng et al. (2009) propose that web 2.0 technology can be used to facilitate such organizational learning. Their research links specific web 2.0 applications such as wiki's and blogs to steps within the process of knowledge creation and construct a framework to assess web 2.0 technologies as a learning enabler. They conclude that this framework can "aid in determining which tools will deliver the better learning outcomes in organizations". Combining this with the findings that organizational learning can be an enabler of knowledge transfer and therefore of innovation, one could argue that the proper use of web 2.0 technology within an organization (named enterprise 2.0) could indeed lead to superior firm performance. Combining the aforementioned research on organizational learning capabilities we argue that the specific paradigm of *innovation* within its domain should be considered for our theoretical framework, as a logical supplement to the already indentified concepts of "a receptive culture" and "influencing individuals (to share knowledge)". With all these variables on the cultural and learning dimensions of organizations and individuals, we adopt and build upon the rigorous conceptual model of Bock et al. (2005), displayed in Figure 1, that predicts the main variable of "intention to share knowledge" from the variables of "attitude towards knowledge sharing" and "organizational climate" for which "innovativeness" is part of. We propose that this is very well aligned with our own findings from the reviewed literature. This is also directly linked to the field of enterprise 2.0 as the main concept "intention to share knowledge" is also named a key concern in McAfee (2006) on the success factors of enterprise 2.0. We propose this cross-validates the use of the model in the realm of our research. With the adoption of the aforementioned model, we argue that by

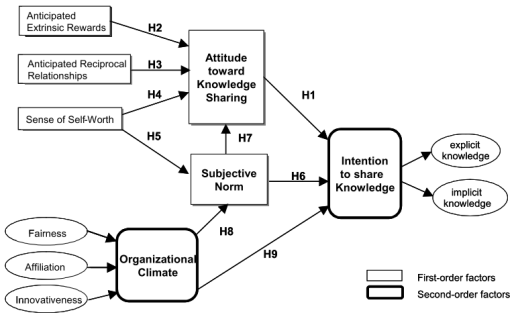

Figure 1: Research model used in Bock et al. (2005)

using the "intention to share knowledge" as the first layer of our framework we have covered the dimensions of *organizational culture* and *organizational learning capability*.

IS acceptance

As we have argued earlier, the correct use of information technology can make a substantial difference in today's competitive and globalized working environment. Not surprisingly about 50% of all new organizational investment since the 1980's can be labeled as such (Westland & Clark 2000). Yet, it is beyond reproach that in order to make those IS investments live up to their promise, they must be accepted and used by employees within the organization. This potential lack of user acceptance is also named one of the reasons so many IS projects seem to fail (Kim & Kankanhalli 2009). IS acceptance is therefore not coincidentally "one of the most enduring research topics" in IS literature argued by Agourram (2009), which has led to a multitude of conceptualizations, models and meta-models.

According to Agourram (2009) probably the most cited model in IS literature on IS acceptance is the DeLone and McLean Model of Information Systems Success, originality published in DeLone & McLean (1992) and slightly adjusted after an ten year period in DeLone & McLean (2003), pictured in Figure 2.

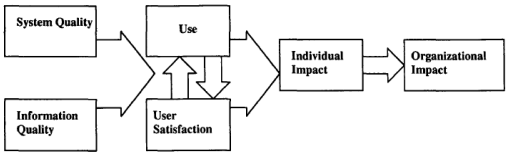

Figure 2: Model of IS Success from DeLone & McLean (1992)

According to their 2003 publication, it has been empirical tested and validated in at least 16 studies during that decade and was cited 285 times in refereed journal papers. Based on the 4 main variables *system quality*, *information quality*, *use* and *user satisfaction* the actual user acceptance of information technology can be determined. For the second layer of our framework we adopt the DeLone & McLean model for IS success because it is has a profound theoretical basis and has been validated in numerous studies. We also propose that is complementary to the already defined variable *intention to share knowledge* of our framework for the obvious reason that the web 2.0 technology itself has to be accepted in order to be of organizational value.

Although we adopt the DeLone & McLean model we acknowledge other research in the field of IS acceptance. Arguably one of the most thorough studies to other models has been done by Venkatesh et al. (2003) which reviews eight prominent models[1], empirically compare them, construct an unified model integrating elements across the eight and empirically validate the unified model. The resulting unified model leads to the same outcome variable of *user acceptance* but takes other aspects like social influence, gender, age and experience into consideration. Contrary to the DeLone & McLean model the resulting unified model has not been adopted as widely as the former based on our review findings on the subject. And, for our specific domain of interest, in reviewing enterprise 2.0 literature (Frappaolo et al. 2009; McAfee 2006; Sutter 2009) we found no reference to those fine-grained elements of user acceptance. We therefore argue that on top of the already defined elements the addition of the overall variable of user acceptance derived from DeLone & McLean (1992) will suffice.

In our literature research we also found scholars who propose that with such modern technology like web 2.0, traditional models for IS success, like the one we adopt, are no longer applicable. Cummings et al. (2009) emphasizes that web 2.0 technology cannot be viewed as a traditional IS application, on which most models are based: researchers should take a different approach focusing more on elements of collaboration and willingness to participate. We argue that by not only using the IS acceptance model of DeLone & McLean (1992) but also using Bock et al. (2005) for the mentioned dimensions of culture and intention to share knowledge, we indeed leverage both research areas resulting in a rigorous and more complete theoretical framework than using either one by itself.

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[1] In Venkatesh et al. (2003) the Delone & McLean (D&M) model is not part of the 8 reviewed models. In an e-mail correspondence with the author, we asked why it was not included. The author argues that it is more a framework that a model. He find this view substantiated by that fact that during the aforementioned decade scholars have tested different parts of the D&M 'model', consistent with the believe that these studies have created *actual* models based on a D&M 'framework'. Although we do not dispute this fine line, we believe that because so many scholars have positively verified the D&M 'model' this forms a solid base for further research nonetheless.

Web 2.0 capabilities

Now that we have reviewed the aspects of *organizational culture*, *organizational learning* and *IS acceptance*, the missing link is the actual information technology used in an enterprise 2.0: web 2.0. According to O'Reilly (2005b), the term itself is credited to Dale Dougherty, partner of O'Reilly Media, Inc, who used it to describe new internet initiatives by companies who survived after the .com crash in the beginning of the 2000's. While the visual artifacts or web 2.0 technology like wiki's and blogs may have become the vanguard of enterprise 2.0 in today's corporate environment, we argue that it are the underlying capabilities that differentiate it from earlier forms of web technology. In our literature review we find that although the definition of web 2.0 seems often debated as pointed out by Sutter (2009), its capabilities are less disputed in literature. Nath et al. (2009) name the "rich user experience" as a key element, along with "peer-to-peer interactions that foster collaboration". This collaborative element of web 2.0 technology is also described as "the efficient sharing of knowledge" by Blinn et al. (2009) and as "a high degree of user participation" (Sutter 2009).

In more general terms Pleil (2006) uses 5 categories for the web 2.0 functions: authoring, sharing, collaboration, networking and scoring. This is not unlike the much cited 6 categories proposed by McAfee (2006) who uses the acronym SLATES for describing the six components of enterprise 2.0: search, links, authoring, tags, extensions and signals. Observing "the state of enterprise 2.0" Hinchcliffe (2007) extends the SLATES framework to 10 elements by adding social, emergent, network-oriented and freeform aspects and creates a new mnemonic, FLATNESSES. This is pictured in Figure 3. We will use this FLATNESSES framework as the third layer for our enterprise 2.0 framework. Although the FLATLESSES framework itself is not as much cited as the SLATES framework from McAfee (2006), based on our literature review we argue that this extended FLATNESSES framework (1) uniquely captures both the necessary technological aspects of web 2.0 and the underlying capabilities and (2) compliments the organizational and learning aspects of our first layer by providing linkage through the elements of people, social and emergence.

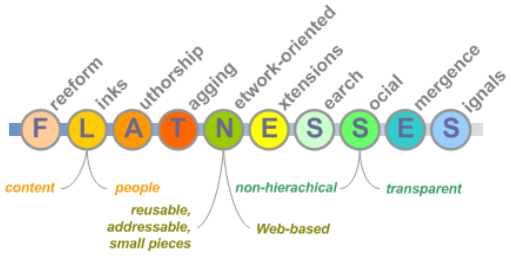

Figure 3: Capabilities from Hinchcliffe (2007)

With the inclusion of this third theoretical layer of web 2.0 capabilities we have identified the elements to construct our resulting enterprise 2.0 framework. Based on the aforementioned literature we propose the following three-pillar framework, shown in Figure 4.

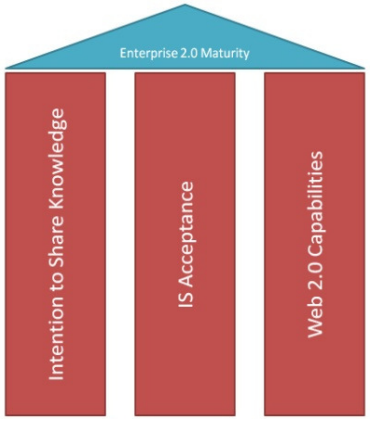

Figure 4: Our enterprise 2.0 framework

3 OPERATIONALIZING THE FRAMEWORK

In the previous section we defined the three capabilities of our enterprise 2.0 framework*: Intention to Share Knowledge*, *IS Acceptance* and *Web 2.0*. As this framework primarily emerges from literature, it should be suitable for practitioners as well to fulfill its promise as a guiding instrument. In order to do so we operationalize it by defining the specific underlying aspects of these three capabilities in a way that makes the framework both measurable and applicable in a real world situation. To make sure that generalizations can be made about the selected constructs, we argue that they need to be representative of the concepts used. We therefore primarily adapt them from prior studies in a pursuit to ensure content validity.

In operationalizing our first capability, *Intention to Share Knowledge*, we build upon the research model presented in Figure 1 that captures the dimensions of organizational culture and learning capabilities. Bock et al. (2005) have field-tested this model and found (strong) support for its hypotheses on the relationship between attitude toward knowledge sharing and organizational climate. For our measuring instrument for *Intension to Share Knowledge*, we therefore adopt their two constructs and corresponding questions that deal with this specific aspect.

Regarding *IS Acceptance*, the DeLone & McLean (1992) model of IS Success has been empirical tested and validated in at least 16 studies over a ten year period in various industries. We leverage on those studies by selecting their validated constructs and measure them as follows. First, the ten questions on *Information Quality* and the eight questions on *System Quality* are taken from Seddon & Kiew (1995). Second, the questions on the aspect of *Use* are taken from Doll & Torkzadeh (1988, 1998). Fourth, regarding *User Satisfaction* we base our questions on Deng et al. (2008). Because the original DeLone & McLean theory and the 16 follow-up studies group the 4 dimensions of IS Success together as an undividable entity in order to assess IS Success we also follow that practice.

The third pillar of our framework, *Web 2.0*, has far less scientific validated research available. We operationalize it by using the 10 identified capabilities from Hinchcliffe (2007). Although scholars are starting to define its purpose and definition, we found almost no measuring instruments available that have a theoretical basis. Therefore, after researching Stocker et al. (2007), Sleen (2009) and Microsoft (2006), we have taken 15 questions from Microsoft (2006) to assess the elements of the Hinchcliffe (2007) framework we use.

Based on the above literature we have operationalized our Enterprise 2.0 framework from Figure 4 with the aforementioned constructs. Table 1 provides a overview of our complete operationalization. We propose that by using the aforementioned research as a step stone for our framework operationalization it is both useful for practitioners as well as grounded on existing theory. The details of all questions used in measuring the variables for our research are presented in Appendix A. Because the variety of questions adopted we argue that alignment of the question types is necessary to come to an unified standard. In order to do so we harmonize all questions to a 7-lickert scale because its "straightforward rescaling and arithmetic adjustment" possibilities (Dawes 2008).

Intention to Share Knowledge	**IS Acceptance**	**Web 2.0 Capabilities**
Organizational Climate	Information Quality	Freeform
Attitude Towards Knowledge Sharing	System Quality	Links
	Use	Authorship
	User Satisfaction	Tagging
		Network
		Extensions
		Search
		Social
		Emergence
		Signals

Table 1: Operationalization of our framework

Comment [JV3]: There are 5 questions in appendix A for Intention to Share Knowledge, though there are only 2 constructs in table 1. How do the questions relate to the constructs?

4 VALIDATING THE FRAMEWORK: CASE STUDIES

In a future phase of our research we will conduct multiple case studies to validate our framework by demonstrating its "utility, quality and efficiency" (Hevner et al. 2004) in an organizational environment. In order to eliminate the organization type as a moderating variable as much as possible we argue that the case studies should be conducted within the same organizational segment. Based on the following considerations we propose to focus our research on local government organizations:

- As noted by Massa & Testa (2009) knowledge management adoption varies with its organizational environment. Among others, these factors comprise the used vocabulary and understanding of knowledge management, the focus on operational versus strategic instruments and the maturity of computer based systems and techniques. Also literature suggests that the management of knowledge is more critical in specific sectors due to a need for increased innovativeness (Ruizmercader et al. 2006).
- Because of their role in society local government agencies not only might have an intrinsic motivation to embrace social aspects in IS applications but also a drive coming from legislation (Woods 2007). We argue that this aspect gives both academics and practitioners a conveniently arranged playing field.
- Research focusing on Dutch government agencies acknowledge this drive and identifies obstacles such organizations face implementing social software aspects (Wamelen & Kool 2008). In the relatively scarce literature on actual case studies on the topic we argue that their research is a welcome lever for further studies.

With this focus on local government organizations it should be straightforward to conduct a series of case studies that will meet the aforementioned validation goals of our theoretical framework in a real world situation. Based on the findings in these studies the model can be fine-tuned, enhanced or taken to another organizational segment if needed.

5 PRILIMINARY CONCLUSION

Research has shown that social platforms have gained presence within the corporate world the last decade. Its goal of facilitating knowledge workers with the use of specific software applications (called *enterprise 2.0* in this paper) opens up the path to create a theoretical framework based on the well studied areas of organizational learning, organizational culture and IS acceptance.

The present research-in-progress aims to harmonize the scattered theory and emerging research on varies aspects of the enterprise 2.0 domain in order to determine the elements that should be included in our framework. First, in the introduction of this paper, we acknowledged the scarceness of scientific studies in this field and provided justification from the literature to resort to the more mature field of knowledge management as first steps of our theoretical analysis. Based on this initial review we distilled the elements *organizational culture*, *organizational learning capabilities* and *IS acceptance* as guiding points for further exploration. Second, by researching both *organizational culture* and *organizational learning* and cross-checking the findings with enterprise 2.0 literature, we adopted the framework of Bock et al. (2005) that provides validation for the concept of *intention to share knowledge* crafted from *organizational climate* and *attitude towards knowledge sharing*. Third, analyzing the theoretical basis for *IS acceptance* we proposed to include the key elements *system quality*, *information quality*, *use* and *user satisfaction* of DeLone & McLean (1992) to provide a foundation for the acceptance of information technology, which is an important characteristic of web 2.0 applications. Fourth, examining the actual technology itself, we focused on the underlying capabilities that web 2.0 provides. This led to the inclusion of the 10 element framework of Hinchcliffe (2007) as our third theoretical layer. As a result, we were able to successfully operationalize our proposed enterprise 2.0 framework using literature from those fields of research.

The remaining case studies are proposed to be conducted within local government organizations based on their unique characteristics. Our project aims to gain more insight into the many new aspects of

enterprise 2.0 and to determine the ontological dimensions of an integrated model to predict, guide and measure its maturity that is both grounded in theory and applicable in practice.

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APPENDIX A: ENTERPRISE 2.0 MATURITY QUESTIONAIRE

On the following scales, please circle the number which best reflects your overall feeling with the statements below.

Part A: Intention to Share Knowledge taken from Bock et al. (2005)

	Strongly agree								**Strongly disagree**
1. I will share my work reports and official documents with members of my organization more frequently in the future		1	2	3	4	5	6	7	
2. I will always provide my manuals, methodologies and models for members of my organization.		1	2	3	4	5	6	7	
3. I intend to share my experience or know-how from work with other organizational members more frequently in the future.		1	2	3	4	5	6	7	
4. I will always provide my know-where or know-whom at the request of other organizational members.		1	2	3	4	5	6	7	
5. I will try to share my expertise from my education or training with other organizational members in a more effective way.		1	2	3	4	5	6	7	

Part B: IS Success taken from Seddon & Kiew (1995), Doll & Torkzadeh (1988, 1998) and Deng et al. (2008)

In this part we use the generic term 'system' for the enterprise social software applications in the organization.

System Quality	**Strongly agree**								**Strongly disagree**
6. The system is easy to use.		1	2	3	4	5	6	7	
7. The system is user friendly.		1	2	3	4	5	6	7	
8. Compared to other computer software, the system is easy to learn.		1	2	3	4	5	6	7	

Information Quality	**Strongly agree**								**Strongly disagree**
9. The output is presented in a useful format.		1	2	3	4	5	6	7	
10. The information is clear.		1	2	3	4	5	6	7	
11. The system provides sufficient information.		1	2	3	4	5	6	7	
12. The system provides up-to-date information.		1	2	3	4	5	6	7	
13. The information content meets my needs.		1	2	3	4	5	6	7	

User Satisfaction	**Strongly agree**								**Strongly disagree**
14. Using the system in my job enables me to accomplish my tasks more quickly.		1	2	3	4	5	6	7	
15. Using the system improves my job performance		1	2	3	4	5	6	7	
16. Using the system in my job increases my productivity		1	2	3	4	5	6	7	
17. Using the system makes it easier to do my job		1	2	3	4	5	6	7	
18. Overall, I find the system useful to my job.		1	2	3	4	5	6	7	

Use	**Strongly agree**								**Strongly disagree**

19. I use the system to make sense out of data.		1	2	3	4	5	6	7	
20. I use the system to improve my decision making processes.		1	2	3	4	5	6	7	
21. I use the system to coordinate my work activities with others.		1	2	3	4	5	6	7	
22. I use the system to plan my one work.		1	2	3	4	5	6	7	
23. I use the system to coordinate with superiours and subordinates.		1	2	3	4	5	6	7	
24. I use the system to service people (internal or external).									

Part C: Web 2.0 capabilities taken from Microsoft (2006)

	Strongly agree							**Strongly disagree**
25. I can quickly find the right information to do my work effectively		1	2	3	4	5	6	7	
26. I am aware of the specific knowledge and expertise of my colleagues		1	2	3	4	5	6	7	
27. I can select which information I wish to receive and how that information is organised		1	2	3	4	5	6	7	
28. All information in my organisation is accessible and easy to share		1	2	3	4	5	6	7	
29. I can easily communicate and cooperate with my colleagues, regardless of my location		1	2	3	4	5	6	7	
30. I can easily exchange information and knowlegde with my colleagues		1	2	3	4	5	6	7	
31. I can view and adjust the work of my colleagues digitally		1	2	3	4	5	6	7	
32. I can easily follow the status of current activities		1	2	3	4	5	6	7	
33. I only need to enter the same information once		1	2	3	4	5	6	7	
34. It is easy to find information concerning our customers, suppliers and partners		1	2	3	4	5	6	7	
35. Our systems ensure I can do my work properly and efficiently		1	2	3	4	5	6	7	
36. In my organisation we work digitally whenever possible		1	2	3	4	5	6	7	
37. I have access to the network and our systems regardless of the time or location		1	2	3	4	5	6	7	
38. When I am not at the office, colleagues and customers can still reach me		1	2	3	4	5	6	7	
39. I can do my job regardless of time or location		1	2	3	4	5	6	7	
40. I always have access to the Internet		1	2	3	4	5	6	7	