Web 2.0-based Webstrategies for Three Different Types of Organizations

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Abstract. Lately, web technology has gained strategic importance. It can be seen in the growing number of organizations that realize the importance of a proper webstrategy in this globalization era, where distributed work environment, knowledge-based economy and collaborative business models have emerged. The phenomenon of web 2.0 technologies has led many internet companies and communities, such as Google, Amazon, Wikipedia, and Facebook, to successfully adjust their webstrategy by adopting web 2.0 concepts to sustain their advantage and reach their objectives. As a consequence, interest has risen from more traditional organizations to benefit from web 2.0 concepts in enhancing their competitive advantage. This paper discusses the influence of web 2.0 concepts in the webstrategy formulation for organizations with differing requirements, characteristics and objectives. The research categorizes organization types into Customer Intimacy, Operational Excellence and Product Leadership, based on the Value Disciplines model.

Keywords: web 2.0, webstrategy, framework, collaboration, business model, value disciplines

1 Introduction

Internet technology makes businesses more productive and more competitive (Palmer, 1997). It allows us to release the valuable information that resides within and make it available throughout the organization. The growth of internet usage has been increasing tremendously in the past years. Illustratively, Internet World Stats (2007) reports that there are approximately 1.25 billion internet users in the world. This statistic shows that there is currently a huge community connected through the internet. It is one of the triggers of the emergence of internet businesses nowadays, where most of the successful ones tend to develop and nurture their web communities. The increasing importance of business communities confirms that there is a shift in

business models from a traditional hierarchical system and competition into more collaboration and social networking, which are considered to be two of the most important web 2.0 concepts (Benkler, 2006, Chatti, Frosch-Wilke and Jarke, 2007, Chesbrough, 2006, Tapscott and Williams, 2006).

Web 2.0 is defined as "the philosophy of mutually maximizing collective intelligence and added values for each participant by formalized and dynamic information sharing and creation" (Hoegg, Martignoni, Meckel and Stanoevska-Slabeva, 2006). An interesting and currently much highlighted prospect for web 2.0 is to aid organizations to enhance their businesses by sustaining their competitive advantage (Gilchrist, 2007). Web 2.0 has been successfully embraced by many of the successful internet companies and communities, such as YouTube, Amazon, Wikipedia, and Facebook. They are able to maintain and nurture their big web communities by applying web 2.0 concepts in their webstrategy (O'Reilly, 2005). The successes of those 'internet'-companies provide potential for traditional companies as well. Hence, the following research question arises: "*how can traditional organizations benefit from web 2.0 concepts?*".

In order to address this question we make a distinction of types of organizations based on business strategies. We also identify the actual web 2.0 concepts. Subsequently we show how we constructed a mapping of most important web 2.0 concepts per type of organization. Subsequently, a webstrategy definition process is described, taking into account the differentiation in types of organizations and the identified web 2.0 concepts.

The next section describes a number of business trends that are related to web 2.0. In section 3 we present the webstrategy framework that allows an organization to define an effective webstrategy. The webstrategy framework is based on the threefold typology of organizations and actual web 2.0 concepts. Finally in section 4, conclusions and future research are presented.

2   Organizational Developments

Organizations nowadays have to adapt to and deal with fast-paced changes in order to effectively continue pursuing their business objectives. Today's dynamic environment pressures organizations to adapt to these changes by reconsidering its structures, processes, and relationships with its clients, competitors, and partners (Gallois, Gardner, Jones and Watson, 2004). Notable changes that have been identified up until now, which are intensely connected to web 2.0 concepts, include the following:

- Globalization is continuously rising. More and more, organizations need to be able to operate in an increasingly complex environment (Chesbrough, 2006, Daft, 2004, Tapscott and Williams, 2006)
- The movement towards a distributed work environment is greater than ever before (Brown, Harper, O'Hara, Perry and Sellen, 2001, Kakihara and Sorenson, 2002)
- There is a shift towards a knowledge-based economy in which knowledge and information are the primary sources of value creation (Jashapara, 2004, Nurmi, 1998).

Organizations are now able to provide their products and services to one global market. In order to outperform their competitors, organizations should think globally and work collaboratively with their chain partners (Tapscott and Williams, 2006). This means that the environment and the work for organizations are becoming more complex and require greater coordination and interaction (Gallois et al., 2004). Advanced technologies enable individuals and organizations to be mobile and to work together while being spatially and temporally decoupled from one another. This mobility development influences not only organizations but also the entire society (Kakihara and Sorenson, 2002). As a result, the changes in the organization's requirements to maintain a high level of communication are inevitable (Nurmi, 1998). Web 2.0 concepts, as one of the IT resources, can be employed to help enable such an organizational environment (Bouman, Hoogenboom, Jansen and Kloos, 2007).

Next to that, knowledge is considered as an increasingly important source of wealth creation and competitive advantage for organizations (Chesbrough, 2006, Donaldson, 2001, Tapscott and Williams, 2006). Information is digitized and the revolution of communication technologies has led to many developments where knowledge is captured, organized, stored, shared and evaluated (Sigala, 2007). These facts have tickled our curiosity on how web 2.0 concepts can serve organizations in this knowledge economy and globalization era, in which organizations require to accommodate the increasing needs of collaborative efforts.

3 Webstrategy Framework

This research aims to assist organizations to formulate an effective webstrategy for their businesses. But how do we define a webstrategy? In order to define the term 'webstrategy', we want to know how strategy is described. Porter (1980), and also Ward and Peppard (2003) define strategy as "*an integrated set of actions aimed at increasing the long-term well-being of the enterprise relative to its competitors*". Moreover, James Brian Quinn in *The Strategy Process: Concepts and Contexts* indicates strategy as "*the pattern or plan that integrates an organization's major goals, policies, and action sequences into a cohesive whole*". From these strategy definitions, we define webstrategy within the context of this research as "*The plan of action, involving important elements, revolving around a web environment with regard to web 2.0 concepts, designed and implemented in order to achieve organization's business goals*".

We approach the construction of a webstrategy by explicitly taking six different elements from these definitions: goal, clients, products, time, resources, and tools/channels (Haggie and Kingston, 2003, Ohmae, 1982, Porter, 1980).

We believe that the different types of organizations with differing requirements, characteristics, and objectives require different webstrategies. Therefore we define an organization typology. The organization typology must be able to draw clear distinctions between the different needs of a webstrategy solution that is effective for each organization type. The following criteria have been defined to assist with the selection of an appropriate organization typology:

- The typology must have a clear distinction between the goal and strategy of each of the organization types.
- Each organization type in the typology must have strong and distinct characteristics from one another, to which web 2.0 concepts can be addressed in order to support them.

Based on these criteria, the *Value Disciplines* introduced by Treacy and Wiersema (1993) is selected as the organization typology for this research. The Value Disciplines model categorizes organizations into three types: Customer Intimacy, Operational Excellence, and Product Leadership. This typology will be adopted in the webstrategy framework as the main tool to identify the organization type and formulate a webstrategy accordingly.

The differing requirements of different organization types have led us to think about how a webstrategy could be effectively formulated for the specific organization's situation. In order to perform an effective webstrategy formulation and web 2.0 adoption, we have developed a webstrategy framework. The purpose of the webstrategy framework is to assess the current (as-is) webstrategy of an organization, give the direction of the desired (to-be) webstrategy of the organization, and finally provide advices regarding possible improvements and propose a new effective webstrategy. These phases are executed according to the organization's situation and maturity revolving around the important elements of webstrategy. These important elements include goal, clients, products, time, resources and tools/channels, as earlier identified as elements for strategy.

Fig. 1. A fragment of the webstrategy framework

The webstrategy framework depicted in Fig. 1 incorporates five phases, one additional activity, six webstrategy elements, key tools, and optional supplementary tools. The five phases and the six webstrategy elements are placed on two dimensions in the webstrategy framework. This has been done in order to guide the users to assess

and gather quality information about the organization's situation regarding the six webstrategy elements on each of the phases. This is to ensure that the webstrategy to be formulated is effective according to the specific organization's situation. These five phases function to guide through the whole webstrategy formulation in search for a good solution. These should include internal and external aspects (Ohmae, 1982, Porter, 1980). The webstrategy formulation phases are:

- *Awareness:* In this phase, information on the organization should be gathered. This includes its business strategy, business requirements, maturity compared to its competitors, the industry trends, and their awareness of web 2.0 benefits. The maturity of the organization compared to its competitors is also included. Some example questions which may be asked are:
  - What is the goal of the organization?
  - Who are the clients of the organization?
  - Does the organization want to enhance its existing market and/or product?
  - Is the organization aware of web 2.0 benefits to enhance its businesses?
  - What are the current trends in the industry?
  - What are the major movements of the organization's competitors?
  - What channels are mostly being used by the clients?

- *Anticipation and Assessment (as-is):* The most prominent value discipline is identified, and the current webstrategy and as-is situation of the organization are assessed, as to which and how well web 2.0 concepts and features are being used at present. The potential problems should also be identified. Example questions to be asked include:
  - Is the goal of the organization very hard to achieve without an excellent efficiency within its business processes?
  - Would the organization fail to survive if it did not have excellent relationships with or information about its customers?
  - Does the organization constantly require new knowledge in order to keep innovating?
  - What are the characteristics of the organization?
  - Is the current webstrategy goal aligned with the organizational goal?
  - Does the organization invite its consumers to become prosumers (consumers who also produce), to be involved and collaborate or add value to their business? If so, to what extent?
  - Does the organization have GUI-style web applications with Rich Internet Application functionalities to encourage clients to use them?
  - Does the organization currently use or lease data from other organizations or providers?
  - Does the organization have any web applications that can be accessed from multiple devices? If so, what are the functions of these applications?

- *Formulation of Direction (to-be):* Based on the organization type, the desired situation is formulated toward which the organization should improve their webstrategy. This direction is provided by the "Webstrategy Direction Matrix" (see

section 5.1), one of the key tools supporting the utilization of this webstrategy framework. Some example questions which may be asked are the following:

– To what extent should web 2.0 concepts be implemented in order to effectively obtain added value from users' participation?
– In order to implement the web 2.0 features listed on the matrix successfully, what knowledge must be obtained and what changes must be performed?

- *Webstrategy Development:* In this phase, the new webstrategy is formulated. It lists the important web 2.0 concepts and features that should be emphasized and applied in the webstrategy, but are missing or are not getting enough attention in the current webstrategy. During the development of the webstrategy, the alignment with the organization's maturity, strategy, processes, goals, capabilities, culture, products, resources, human capitals, skills, knowledge, and industry trends should be taken into consideration to develop an effective and efficient webstrategy (Scheper, 2002). The "Analytical Framework" key tool was developed to aid this phase. The design of the analytical framework is further elaborated in section 5.2.

- *Evaluation:* This phase encompasses the evaluation of the proposed webstrategy's effectiveness, and its alignment with the business strategy. The success of the proposed webstrategy implementation also depends on the support from the management and the organization as a whole. Therefore, it is also important to evaluate the user acceptance toward the proposed webstrategy. Questions which may be asked to evaluate the proposed webstrategy are:

– Is the proposed webstrategy well aligned with the business strategy of the organization?
– Does the proposed webstrategy deliver what it was intended to, and is it able to help the organization to achieve its objectives?
– Does the proposed webstrategy adequately provide individuals, especially the organization's employees and clients, a platform to collaborate and add value to the organization?
– Are the proposed changes acceptable for the organization's employees and clients?
– Is the proposed webstrategy able to improve the advertising and marketing performance of the products?

In the webstrategy framework shown in Fig. 1, we can see the one additional activity that is performed throughout the whole webstrategy formulation process:

- *Feasibility Check:* The feasibility check is performed continuously throughout the whole process in order to identify potential problems in an early stage, thus, save time from analyzing and formulating an ineffective or inefficient webstrategy. Therefore, in every phase, the feasibility with respect to the following aspects should be checked:

– Is it within the organization's budget?
– Does the organization have adequate resources and capabilities?
– Is it aligned with the organizational goal and the business strategy?

- Is the organization or are the products mature enough?
- Does the organization have enough human capital, skills and knowledge required?
- Is it timely feasible?
- Are the employees and clients supportive toward the changes?
- Are the business requirements and web requirements neatly addressed on each phase of the webstrategy formulation?

The *supplementary tools* are optional and can be used to support information gathering and the completion of particular phases. Examples of supplementary tools include Porter's five forces (Porter, 1979, 1980), SWOT analysis, Ansoff's matrix (Ansoff, 1957, 1985), MapIT, Mind-mapping, MoSCoW prioritization tool, and Key Performance Indicators (KPIs). Unlike the supplementary tools, the *key tools* are strictly attached to and must be used along with the webstrategy framework.

3.1   Key Tool: The Webstrategy Direction Matrix

Web 2.0 is not a single philosophy or technology, but rather many that should be considered (Manafy, 2006). Hoegg et al. (2006) present the fundament of web 2.0 as collective intelligence maximization, transparency of the information creation and sharing process, and network effects. Breslin, Decker and O'Marchu denote web 2.0 as social networking communities. However, these terms are leaning toward the seven higher level key concepts that are enunciated by O'Reilly (2005):

1. **The Web as Platform**
   The term "desktop" has evolved to "webtop", where the web is used as a single universal platform that connects and accommodates organizations and individuals to have web 2.0 services. Both web browsers and web servers have been becoming commodities, and value moved up the stack to services delivered over the web platform (Gilchrist, 2007, O'Reilly, 2005).
2. **Harnessing Collective Intelligence**
   The interactive exchange of information and the continuous development and maintenance of a group opinion, which results in a commonly accepted opinion and content (Hoegg et al., 2006). An application should be able to encourage user participation and uniquely leverage the ability of the participants to improve the product or content (Baumann, 2006, Manafy, 2006, O'Reilly, 2005).
3. **Data is the Next Intel Inside**
   Knowledge is power and data is treated as a core competence. Databases are valuable, growing organically in value if constructed and used correctly (Baumann, 2006, O'Reilly, 2005).
4. **End of the Software Release Cycle**
   Software is delivered as a service rather than as a product, it must be maintained, reviewed, and improved on a daily basis. This leads to the need to treat users as co-developers, where some sites are in an almost "perpetual beta" condition (Gilchrist, 2007, O'Reilly, 2005).

5. **Lightweight Programming Models**
   Programming models should allow for loosely coupled systems, allowing syndication rather than mere coordination (Gilchrist, 2007, O'Reilly, 2005). Therefore, remixability, web services, and mash-ups play an important role.
6. **Software Above the Level of a Single Device**
   Software for devices other than computers (multi-channel). Applications are independent of the devices used to access them, and mobile applications are not degraded versions of what happens on the PC (Baumann, 2006, Gilchrist, 2007, O'Reilly, 2005).
7. **Rich User Experiences**
   Web 2.0 gives users an experience closer to desktop applications than traditional static web pages (Manafy, 2006, O'Reilly, 2005). Rich Internet Applications (RIAs) are important for user satisfaction by bringing desktop abilities into the web browsers.

This matrix is one of the key tools involved in the webstrategy framework, which will be used in the Formulation of Direction phase. The purpose of this matrix is to give the meaningful and accountable direction of the web 2.0 concepts which an organization should focus on. This direction consists of the different significance and effectiveness of each web 2.0 key concept for an organization to sustain or even enhance its competitive advantage, depending on its type. We will now look into the construction and validity of this matrix.

3.1.1 Methodology
The matrix was developed with the characteristics of each organization type on one dimension (Haggie and Kingston, 2003, Treacy and Wiersema, 1995), and the seven web 2.0 key concepts on another dimension (O'Reilly, 2005).

Table 1. Matrix composition

Organization Types and its Characteristics	Web 2.0 Key Concepts						
	1	2	3	4	5	6	7
Customer Intimacy							
- *Build bonds with customers*	c1						
- *Understand customers*	c2						
- *Tailor its products and services*	c3						
- *Customer loyalty is the greatest asset*	c4						
Operational Excellence							
- *Improve operational quality*							
- *Improve efficiency*							
- *Ease of purchase*							
- *Low prices*							
- *Hassle-free services*							
Product Leadership							
- *Keep innovating*							

-	*Creation of new knowledge*							
-	*Require highly creative environment and culture*							
-	*Ability to bring/commercialize new ideas to market quickly*							
-	*Have state-of-the-art products or services*							

In order to fill in this matrix, 12 expert interviews have been conducted with web 2.0 experts. Even though the 12 experts have various experience, specialization and industry focus, all of them have strong interest and good understanding, knowledge, and experience on web 2.0 projects.

The duration of each expert interview was ranging between 90 and 120 minutes. During the interview, additional information was provided to ensure that the concepts being discussed were exactly and correctly understood by both the experts and the researcher. During this session, the experts were required to complete this matrix by giving a score for each concept toward every characteristic of each organization type. The relationship between the concept and the characteristic is '*how important is this concept for helping the particular organization type to support the corresponding characteristic?*'. The score ranges between 1 – 5, where 1 indicates 'least important' and 5 is interpreted as 'extremely important'.

The analysis was performed in two ways by investigating the *averages* and the *frequencies*. The analysis on average values was performed by taking into consideration the standard deviations and potential outliers. The steps taken are:

1. The sum scores of the characteristics of each organization type per concept are calculated for every respondent. Since the number of characteristics, and thus the sum of maximum scores, of the customer intimacy organization is not the same as the other two types, therefore, the scores were calculated in percentages in order to make comparable measurements among the three organization types, i.e. $(c1+c2+c3+c4)/(c1_{max}+c2_{max}+c3_{max}+c4_{max}) * 100$.
2. From the previous calculations, the average scores of the sum, of the twelve respondents, on each concept per organization type are calculated to draw the final result. The higher the average score, the more important the concept is.

The second analysis is focusing on the frequency. The steps taken are:

1. The average scores of the characteristics of each organization type per concept are calculated for every respondent.
2. The average scores are categorized into 1-2, 2-3, 3-4, and 4-5, and certain points are assigned to each category. The points assigned to the categories are 1 point, 2 points, 3 points, and 4 points respectively.
3. The frequencies of the average scores in all categories are analyzed by calculating the points that each concept obtained on each organization type. The higher the point, the more important the concept is.

3.1.2   Results

The mean values of the twelve respondents over all concept-organization type combinations are presented in the table below.

Table 2. The mean values of all web 2.0 concept-organization type combinations

Mean Value	Web 2.0 Key Concepts						
N=12	1	2	3	4	5	6	7
Customer Intimacy	70.4	76.7	62.7	56.3	55	80	72.5
Operational Excellence	71.3	60	58.2	58.3	63.3	69.2	60.8
Product Leadership	66.3	78.3	53.5	79.3	78.7	70	64

After the data collection and data analysis on the averages are completed, the results show that concept "software above the level of a single device" (6) and "harnessing collective intelligence" (2) turned out to be the most important concepts for customer intimacy organizations to sustain their competitive advantage and deliver business values. Both score at 80 and 76.7 respectively on this analysis (see table 2). Harnessing collective ideas of what the customers really need, as well as an excellent quality of information about the customers, can be very crucial for this type of organization. These would allow the organization to understand their customers better and be able to tailor its products and services according to the customers' needs, thus improve customer loyalty. By allowing the customers to access and use their web applications from multiple devices, the harnessing collective intelligence activities will be maximized. This allows the organization to get input from users who would not have been able to contribute if the software was only accessible through one device. Some experts also argue that multi-channeling, together with the "rich user experiences" concept such as RIA (Rich Internet Application), would improve the user-friendliness of the applications, which will lead the organization to build bonds by having more returning customers and improve customer loyalty.

Furthermore, concepts "end of software release cycle" (4) and "lightweight programming models" (5), scoring at 56.3 and 55 respectively, were found to be the least important concepts when focusing on the webstrategy of customer intimacy organizations in order to deliver business values.
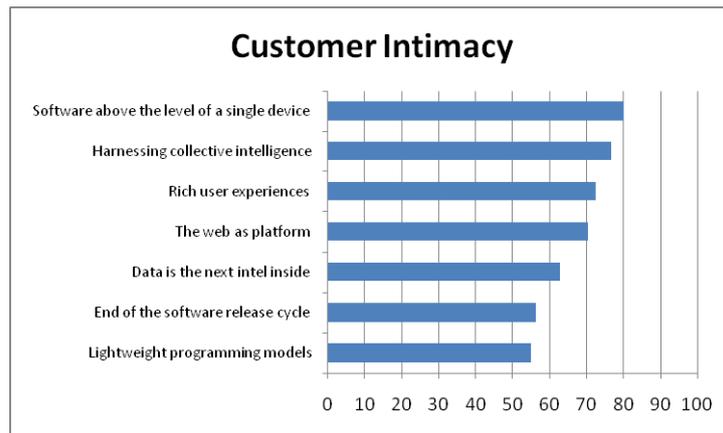

Fig. 2. The importance of web 2.0 concepts for customer intimacy organizations

While concept "software above the level of a single device" (6) with its score at 69.2 turns out to be one of the most important web 2.0 concepts for operational excellence organizations, concept "the web as platform" (1) scores slightly higher according to the experts at 71.3. The two concepts directly and significantly support all of the main characteristics of operational excellence organizations, and hence, sustain their competitive advantage. Operational quality, efficiency and hassle-free services can be improved by using the web as a single universal platform where most of the business activities take place. This excellent operational efficiency sometimes allows this type of organization to skip the middle-man in reaching its customers or to obtain other benefits, which results in low prices. The direct contact between manufacturer and the customers is mostly done on the web, where the "software above the level of a single device" concept becomes important. By providing more possibilities to have this type of contact (or to access the web applications) through multiple devices, the ease of purchase and hassle-free services are significantly improved. Customers who are not always sitting in front of their computers can now purchase products or obtain services through their mobile phones, PDAs, or other devices from anywhere at any given time.

Furthermore, the result also shows that the five remaining web 2.0 concepts are almost equally important to be implemented in the webstrategy for the prosperity of operational excellence organizations, with scores ranging from 58.2 to 63.3.
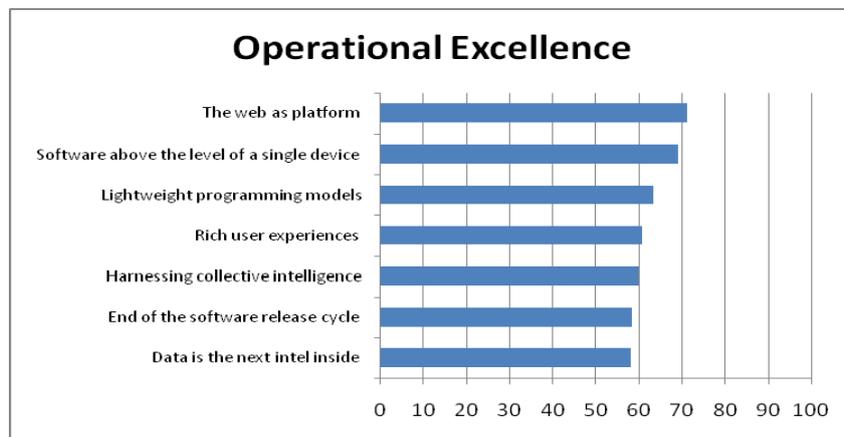

Fig. 3. The importance of web 2.0 concepts for operational excellence organizations

Product leadership organizations require constant innovation, new knowledge, and a creative environment. Fig. 4 suggests that concept "end of the software release cycle" (4), scoring at 79.3, is indeed one of the most important web 2.0 concepts for product leadership organizations. In fact, "end of the software release cycle" resembles relentless innovation. By focusing on this concept in its webstrategy, this type of organization would be able to improve its ability to bring and commercialize the new ideas or products to the market quickly, and thus receive early feedback from the consumers. The application of this concept with its continuous and rapid updates

would push product leadership organizations to keep innovating and getting early evaluation on their new invention by the market before any of their competitors bring similar ideas to the market. Moreover, the experts believe that concept "lightweight programming models" (5), scoring at 78.7, is also an important concept to support the development of state-of-the-art products, along with concept "harnessing collective intelligence" (2). Lightweight programming models allow the organization to be agile and quickly adjust their software and products according to the latest trends and innovation in the market. According to the experts, concept "harnessing collective intelligence" that scores at 78.3 directly addresses most of the product leadership organizations' characteristics. For example, Procter & Gamble and InnoCentive show how this concept may help the organizations build a highly creative environment that allows continuous creation of good quality of innovation and new knowledge through harnessing collective intelligence in the community.

As depicted in Fig. 4, concept "data is the next intel inside" (3) appears to have the least significance (scores at 53.5), compared to the other web 2.0 concepts, to be implemented in the webstrategy of product leadership organizations to sustain competitive advantage and deliver business values.
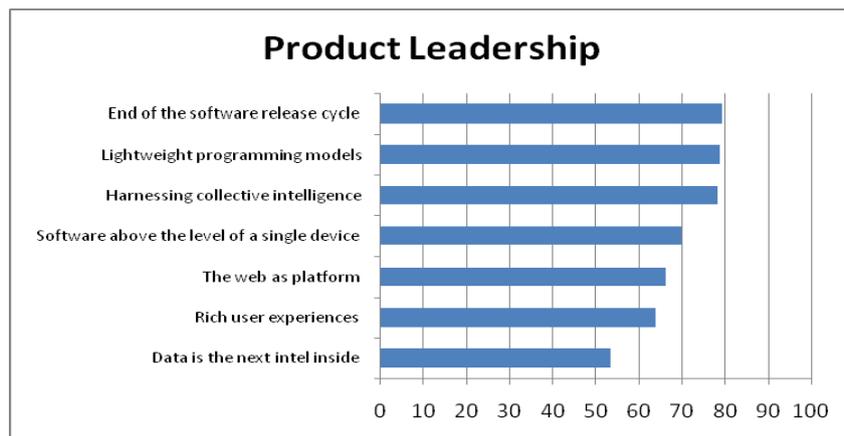

Fig. 4. The importance of web 2.0 concepts for product leadership organizations

Fig. 5 presents an overview of the importance of each web 2.0 concept to different types of organizations. It shows that according to the experts, "harnessing collective intelligence" (2) is a very important concept for the success of customer intimacy and product leadership organizations. Next to this, "end of the software release cycle" (4) and "lightweight programming models" (5) concepts appear to be valued the most by product leadership organizations compared to the other types of organizations. Expectedly, "software above the level of a single device" (6) and "rich user experiences" (7) are shown to deliver most values for customer intimacy organizations. Moreover, the "the web as platform" (1) concept scores slightly higher on operational excellence organizations, while the "data is the next intel inside" (3) concept scores higher on customer intimacy.
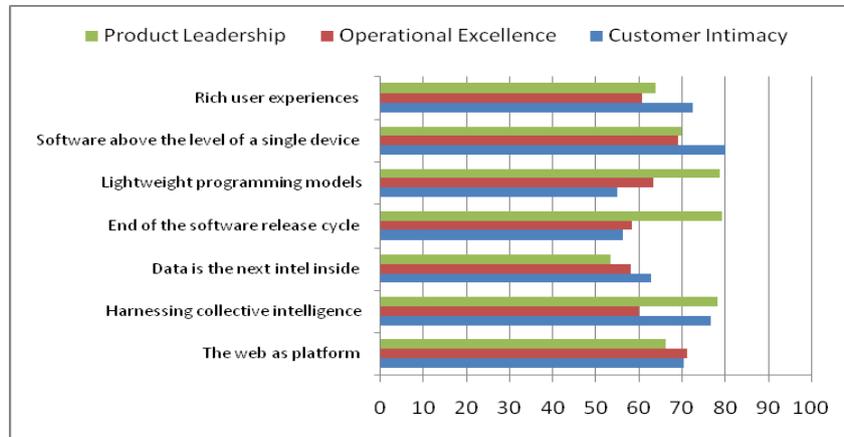
Fig. 5. The result of the average analysis

The same interpretation can also be seen in the result of the frequency analysis in table 3.

Table 3. The result of the frequency analysis

Organization Types (Average Score Categorization)	Web 2.0 Key Concepts (Frequency)						
	1	2	3	4	5	6	7
Customer Intimacy							
1-2 (x1 point)	1	0	1	0	3	0	0
2-3 (x2 points)	1	1	3	9	2	0	1
3-4 (x3 points)	6	3	5	2	5	6	6
4-5 (x4 points)	4	8	3	1	2	6	5
Total Points	37	43*	34	28	30	42*	40
Operational Excellence							
1-2 (x1 point)	0	1	0	0	0	0	1
2-3 (x2 points)	2	3	6	7	3	3	5
3-4 (x3 points)	5	6	4	3	8	4	4
4-5 (x4 points)	5	2	2	2	1	5	2
Total Points	39*	33	32	31	34	38*	31
Product Leadership							
1-2 (x1 point)	0	0	2	0	0	0	1
2-3 (x2 points)	1	1	4	0	0	2	5
3-4 (x3 points)	10	5	5	6	4	8	4
4-5 (x4 points)	1	6	1	6	8	2	2
Total Points	36	41*	29	42*	44*	36	31

* The most important web 2.0 concept for corresponding organization type.

The results of both the average and the frequency analyses are complementary to each other, thus a reliable conclusion was drawn as illustrated in table 4.

Table 4. The mapping of the 7 web 2.0 concepts toward organization types based on their importance level in delivering business values.

Organization Type	Very Important	Important	Less Important
Customer Intimacy	- Software above the level of a single device (6) - Harnessing collective intelligence (2)	- Rich user experiences (7) - The web as platform (1) - Data is the next intel inside (3)	- End of the software release cycle (4) - Lightweight programming models (5)
Operational Excellence	- The web as platform (1) - Software above the level of a single device (6)	- Lightweight programming models (5) - Rich user experiences (7) - Harnessing collective intelligence (2) - End of the software release cycle (4) - Data is the next intel inside (3)	
Product Leadership	- End of the software release cycle (4) - Lightweight programming models (5) - Harnessing collective intelligence (2)	- Software above the level of a single device (6) - The web as platform (1) - Rich user experiences (7)	- Data is the next intel inside (3)

3.2 Key Tool: The Analytical Framework

The analytical framework is developed to investigate the information gathered from the previous phases of the webstrategy framework, and is to be used in the "*webstrategy development*" phase. This systematic tool gives guidelines on how the new webstrategy should be formulated and proposed, based on the internal and external aspects of the organization. The components of this analytical framework have been derived from best practices in the professional advisory services industry and are validated by twelve experts.
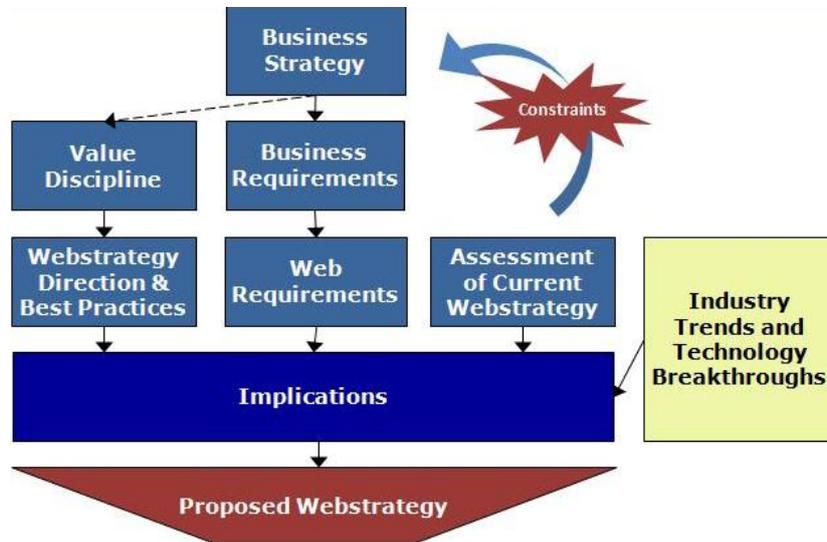
Fig. 6. The analytical framework

Some deliverables are expected to be created by utilizing this analytical framework. These deliverables are essential in formulating an effective webstrategy:

- *Business Strategy*: The business strategy of the organization can be identified by analyzing the information gathered in the first phase of the webstrategy framework, namely "*awareness*". In this phase, general questions about the organization are asked, including questions on its business strategy. This is usually the long term business plan of the organization to achieve its long term goals. The business strategy of an organization often significantly relates to its value discipline.

- *Business Requirements*: After the identification of the organization's business strategy, there is a need to list its business requirements. Business requirements are usually derived from the business strategy, however, these can also be derived in combination with key stakeholders wishes and research outside the company. Business requirements constitute a specification of what the business wants and describe in business terms what must be delivered or accomplished to provide value. With the identified business strategy, along with the additional information obtained in the phase "*awareness*" of the webstrategy framework such as key stakeholders wishes, the business requirements of the organization can be formulated.

- *Web Requirements*: Web requirements are translated from the business requirements of the organization, and usually contain the necessities of web-related technological capabilities in order to support the business and achieve its objectives. Next to the business requirements, additional information can also be asked to aid the identification of web requirements.

- *Value Discipline*: Even though it is not always the case, the value discipline of an organization often can be seen in its business strategy. For example, an organization with the strategy of understanding the customers' needs and tailoring

its products according to these needs is usually a customer intimacy organization. However, sometimes this reflection is not that clear. The value discipline of the organization should be identified in the second phase of the webstrategy framework, which is "*anticipation and assessment*". In this phase, questions concerning the focus of how an organization, in its markets, has increased the value offered to customers over the long term are asked. The answers to these questions would provide adequate information of the organization's value discipline, thus, the organization type.

- *Webstrategy Direction & Best Practices*: The identification of the organization type allows us to use the matrix key tool to give the webstrategy direction. With the help of this matrix, the webstrategy direction can be derived as to which web 2.0 concepts are essential in delivering business value to the organization. In this step, some best practices available for this particular organization type can also be included. This deliverable refers to the "*formulation of direction (to-be)*" phase of the webstrategy framework.

- *Assessment of Current Webstrategy*: This deliverable can be produced from the information that is previously gathered in the "*anticipation and assessment (as-is)*" phase of the webstrategy framework. This should include not only the assessment of the current webstrategy, but also the impact on the business strategy. Any (potential) *constraints* from the current webstrategy that limit or do not support the effectiveness of the organization's business strategy are listed here.

- *Industry Trends and Technology Breakthroughs*: This deliverable concerns more of external influences, such as the trends in the industry (product and service trends, market trends, and movement trends of the competitors) and the technology breakthroughs (any emerging technologies) that currently penetrate and are able to deliver business values to the organization.

- *Implications*: Taking into consideration the four deliverables, which are "*webstrategy direction & best practices*", "*web requirements*", "*assessment of current webstrategy*", and "*the industry trends and technology breakthroughs*", the webstrategy implications are derived. These implications involve internal as well as external influences. Specific situations and conditions of the organization, such as the maturity of the organization compared to its competitors, the maturity of the products/services, the availability of resources, human capitals, skills and knowledge should also be taken into account. These implications must give clear ideas on which the formulation of the actual webstrategy to be proposed will be based.

- *Proposed Webstrategy*: This deliverable formulates the actual webstrategy to be proposed to the organization. The proposed webstrategy should be aligned with the organization's business strategy, capabilities, and goals. Note that the formulation process is based on the implications derived from the previous deliverable, in which internal (*webstrategy direction & best practices, web requirements,* and *assessment of the current webstrategy*) as well as external aspects (*industry trends and technology breakthroughs*) are intensively considered. Thus, the proposed webstrategy, with the current capabilities of the particular organization, is expected

to effectively address the issues that the organization has, deliver the business values to the organization, and improve its business performance.

4   Conclusions

In this twenty-first century, where the knowledge-based economy has emerged, information and communication technologies are crucial to the success of organizations. Business models have started to shift toward collaboration and community involvement. Organizations create pores to allow information and knowledge to flow in and out of the organization, which would stimulate creation of knowledge and innovation. This approach is effectively gained through web 2.0 technologies and their underlying concepts, which value collective intelligence and collaboration.

For an organization to successfully adopt web 2.0 concepts into its webstrategy, there are a number of aspects which need to be considered, including the value discipline which best describes its organization type and the unique value that is to be delivered in the long term. The webstrategy of the organization requires to be able to sustain and even improve this unique value to the next level in order to outperform its competitors. Therefore, the categorization of web 2.0 concepts based on their effectiveness in addressing the issues and delivering business values to specific organization type was emphasized.

An effective webstrategy should consider its alignment with the organization's business strategy, objectives, resources and capabilities, as well as with the industry trends and technology breakthroughs. This research has sought to consider these elements and the alignment in formulating an effective webstrategy with the adoption of web 2.0 concepts for different types of organizations. The webstrategy framework and its key tools were introduced and the explanations of the fragments were provided. The differing needs of web 2.0 solutions for different organization types were also presented. The webstrategy framework as described in this paper can assist in formulating an effective webstrategy by incorporating the appropriate web 2.0 concepts to effectively deliver business values for the organization.

One of the interesting follow-up studies would be to improve the analytical framework by incorporating more interaction rather than merely a logical flow diagram. Some interim components can also be included into the analytical framework in order to deal with some short-term goals and deliverables. This would strengthen the supporting evidences upon which the webstrategy formulation is based. However, the complexity level of the framework should also be taken into account. A framework that is too complex may discourage its utilization and create complication in the formulation process as well as the results. Another recommended research would be to further include external aspects of business environment. Since this research and the framework are focusing on web 2.0 that values collaboration, globalization and collective knowledge, therefore the study on external aspects can be extended, for example to know how influential these external aspects to the internal aspects of an organization, and eventually to its webstrategy formulation.

Finally, the validity of web 2.0 concepts for webstrategy definition has been validated by twelve experts. Yet, the research can be extended with e.g. a case study. Such a study could demonstrate the further practical value of the webstrategy.

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