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THE IMPACT OF SOCIAL MEDIA ON BUSINESS PERFORMANCE

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Abstract

Social media are gaining popularity and are increasingly used in regular operations of many companies, including start-ups, small, medium-sized, and large organizations. The purpose of this research is to explore the impact of social media and to analyze to what extent social media have impact on organizational capabilities and business performance. We develop a research model and two simple propositions based on the resource based view of the firm. We analyze the impact of six social media applications on six business capabilities and on business performance in SponsorPay, a start-up company since 2009 in the on-line game advertising industry. We use a mixed research method including qualitative analysis based on interviews and quantitative analysis based on a survey among 60 employees. We find that the use of social media enhances business capabilities and business performance. The impact is not due to one (out of six) social media tools only, but due to successfully combining the six social media tools into one effective social media ecosystem that enables coordination between internal and external business processes.

Keywords: Web 2.0, social media, Business Performance, Resource Based View, Business Capabilities, Knowledge management.

1 Introduction

Social media tools are gaining popularity and are increasingly used in regular operations of many companies, ranging from start-ups and small and medium enterprises to large corporations (Lee et al, 2008; Osimo, 2008; Andriole, 2010; Bell and Loane, 2010). Despite extensive use of social media, little is known on the specific impact that these tools and technologies have on business process performance (Denyer et al, 2011).

The purpose of this paper is to go beyond the listings of benefits and drawbacks of social media technologies and to analyze to what extent their employment has a measurable impact on business process performance (Bughin, 2009, 2011). The business impact may be due to the impact of social media on management (Birkenshaw and Crainer, 2010), on governance (De Hertog et al, 2011), on knowledge management (Schneckenberg, 2009), on strategic competitiveness (Liu and Liu, 2009).

Emerging technologies gain popularity as tools to enable cooperation among businesses in business networks (Liu and Liu, 2009; Bell and Loane, 2010), whereas the applications market is flourishing (Dutta, 2012). Networked companies that take advantage of the latest social media technologies seem to outperform their competitors and report benefits like lower costs and improved efficiencies (Harris and Rea, 2009; Eisenfeld and Fluss, 2009). In this context it is important to understand the specific impact that social media have on business process performance (Wetzstein et al, 2011). The identification of a direct connection between the two will support the shift towards Enterprise 2.0 – a new business environment in which companies will maximize the benefits they can obtain by integrating social media suites into their daily operations.

The research question in this paper is ‘What is the impact of social media on business process performance?’ The present study aims to better understand the social media environment and the impact of common social media tools used in practice. To answer the research question, we analyze a case and assess how business managers and IT managers in a successful social media based company evaluate this impact.

We explore the impact of social media technologies on intra- and inter organizational processes in the on-line gaming and advertisement industry. We also analyze the impact on business performance. The purpose of the study is to identify linkages between social media and business process performance by taking a closer look at the operations developed by SponsorPay, the company in which we did a case analysis. We first develop our research model and propositions in section 2, describe our method and the SponsorPay case in section 3, and present our results and conclusions in sections 4 and 5.

2 Theory on social media and business impact

In this section we define social media (2.1), refer to the resource based view of the firm and theories on social media impact on organizations (2.2) to develop a research framework and propositions (2.3).

2.1 Defining social media

The term Web 2.0 was coined in 2001 by O’Reilly (2005) in a conference brainstorming session to reflect the transition from the manager generated content era to the user generated era. O’Reilly identifies seven differences between Web 1.0 and Web 2.0: the web as a platform; the harnessing of collective intelligence; the data as the next Intel Inside; the end of the software release cycle; the lightweight programming models; the software above the level of a single device; the rich users’ experience (O’Reilly, 2005). The term was widely adopted and definitions have been formulated for Web 2.0, all emphasizing collaboration and enhanced communication, as well as user involvement.

Harris and Rea (2009) define Web 2.0 as “a perceived second generation of Web development and design that facilitates communications and secures information sharing, interoperability, and

collaboration on the Web”. Bell and Loane (2010) define Web 2.0 as “a set of economic, social, and technology trends that collectively form the basis for the next generation of the Internet – a more mature, distinctive medium characterized by participation, openness and network effects”.

Web 2.0 technologies share common characteristics that distinguish them from previous generations of Web development. First, Web 2.0 brings about an emphasis on collaborative learning as well as on user engagement through participation. Second, Web 2.0 is regarded user friendly, as it enables immediate publication and wide distribution of user generated content. The driving force behind the new wave of applications stands in their content and data management systems, as well as in their architecture of participation that encourages user contributions. Further on, the new generation of applications uses web as a development platform. Most Web 2.0 tools are based on the Software as a Service technology (Bell & Loane 2010).

Web 2.0 is social software whose value is derived by its volume of users that are collaboratively creating and sharing content. In the absence of an exact definition, it is difficult to realize a comprehensive list of tools that fall into this category. However, taking into consideration the emphasis put on collaboration, there is common agreement on particular instruments that belong to the Web 2.0 generation of Web development. Among these are weblogs, wikis, RSS technologies, social networks, mashups, podcasts, folksonomies, or virtual worlds.

Web 2.0 and social media have different meanings. Kaplan and Haenlein (2010) define social media as ‘a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content’. In this paper we use Web 2.0 if we address the technology platform, if we need to address tools then we use social tools, and if we need to specifically address applications, we will use social media.

In this research we focus on six Web 2.0 tools that are used in the case organization: Google Apps (including Gmail, Calendar, Docs, Sites), Asana, Pivotal Tracker, Github (github.com/SponsorPay), Zendesk (Helpdesk - helpdesk.sponsorpay.com), Salesforce (CRM). Detailed descriptions on these tools and their functionality is given in section 4.

2.2 Impact of social media on business

We take a resource based view perspective on organizations to explain the impact of social media on firm performance. The resource-based view states that organizations obtain a set of certain resources (like human resources, IT infrastructure, and social media) that are specific to the firm, rare and not capable of easy imitation by rivals. The particular combination of resources forms the basis for firm competitiveness and performance. A distinction can be made between resources and capabilities. While resources serve as basic units of analyses, capabilities are repeatable patterns of action in the use of resources to create, produce, or offer value to a market (Barney 1991). Note that resources (like Web 2.0 tools) may be obtained easily, but that it is not easy to develop business-wide capabilities to use the resources to enhance business performance. So, while resources can be imitated easily, capabilities embedded in business practice are not. We focus on Web 2.0 based capabilities.

Following the resource based view we regard social media in our research model as resources that are used by an organization in particular combinations with other resources, thus forming the resources with specific functions that enable the development of certain capabilities, processes, and strategies. Based on this perspectives we summarize three social media theories (the honeycomb framework, latent factors, and business process performance self-assessment) to specify our research model.

2.2.1 Social media functionalities (Honeycomb framework)

Kietzman et al (2011) present the honeycomb framework to analyze the impact of Web 2.0 tools by distinguishing between seven functional building blocks of a Web 2.0 tool (identity, conversations, sharing, presence, relationships, reputation, and groups) and the impact or implications of these seven functionalities on business capabilities (see Table 1).

Seven Functional building blocks		Impact of the Functionality on Capabilities
Identity	The extent to which users reveal themselves	The company's ability to control data privacy and offer tools for personal branding and self-promotion
Conversations	The extent to which users use the tool to communicate with each other	The company's ability to monitor conversations and to identify adequate moments for starting conversations
Sharing	The extent to which users exchange, distribute, and receive content	The company's ability to manage content and identify the objects having viral potential
Presence	The extent to which users are aware of the presence of one another	The company's ability to create and manage the context by analyzing user availability and location
Relationship	The extent to which users relate to one another	The company's ability to manage network relations by identifying strength of relations and interaction patterns
Reputation	The extent to which users are aware of the social standing of other users	The company's ability to identify metrics that monitor the strength of sentiment of others and the reach
Groups	The extent to which users form communities	The challenge is to identify membership rules and protocols for being part of the group

Table 1: Seven functional building blocks (functionalities) of Web 2.0 tools and their business impacts as defined in the Honeycomb framework (Kietzman et al, 2011).

The emergence of Web 2.0 has brought about competitive advantages to networked organizations: the companies that effectively use social tools for enhancing communication flows, collaboration, and business processes (Bradbury 2010). Moreover, a new classification system has arisen, separating this new type of companies into three distinct categories: internally networked organizations, externally networked organizations, and mixed networked organizations (Bughin 2011). Benefits of Web 2.0 for networked organizations include lower costs, faster product development and innovations. Several models have been developed to analyze and quantify the business impact of Web 2.0 (Andriole, 2010; Birkinshaw & Crainer, 2010; Bughin, 2011; Dutta, 2012). The current paper will use the framework developed by Andriole (2010) in order to analyze Web 2.0 impact on business processes (Figure 1).

Following Oesterle et al (2001) and Van Heck and Vervest (2007) we assume that the set of Web 2.0 functionalities together form an ecosystem of capabilities that support business networking, network effects and increased performance. These authors assume that such network effects and increased performance will only occur if the network has developed Networked Business Operating Logic. This logic allows different business actors to easily connect and create linkages among proprietary and network processes and data. Such logic makes the network smart since it creates the ability to “rapidly pick, plug, and play” business processes to configure rapidly to meet a specific objective, for example, to react to a customer order or an unexpected situation (Van Heck and Vervest, 2007).

Following the same tenet, we argue that effective use of Web 2.0 resources will exist only if Networked Business Operating Logic exists. Such logic (in the Web 2.0 ecosystem) includes the capabilities to link multiple organizational actors, business processes, and information flows thereby creating network effects and finally improve business effectiveness. We thus propose that a set of Web 2.0 tools improves business process performance only if adequate business capabilities exist’.

2.2.2 The impact of social media on business capabilities

Andriole (2010) identifies six latent factors (business capabilities) that are influenced by using Web 2.0 tools, and ultimately affect business performance:

- Collaboration and communication. Web 2.0 tools have the capacity to enhance communication and collaboration within and among organizations, thus fostering the rapid internationalization of companies and the globalization of their business operations (Bell & Loane 2010). The four indicators associated to “collaboration and communication” are (i) the capability to coordinate discussions, (ii) the capability to reach more people faster, (iii) the capability to synchronize projects and tasks, and (iv) the capability to audit communication streams.
- Rapid application development. Web 2.0 tools enhance application development by integrating third-party services and combining existing technologies and applications into new businesses.

These tools engage experts, customers, suppliers, and company employees alike in the product development efforts thus speeding them up. Since customers are also involved in the product development process, the rate of failure is significantly reduced. (Bell & Loane 2010). The three indicators are (i) the capability to modify and to develop applications faster, (ii) the capability to support applications easier, and (iii) the capability to improve requirements modeling.

- Customer relationship management (CRM). Web 2.0 tools reshaped the traditional CRM processes, transforming them into CRM 2.0, by identifying and solving customer service issues, using forums, wikis and others. The four indicators are (i) the capability to mine customer data effectively, (ii) the capability to reach more customers, (iii) the capability to ask for customer feedback, and (iv) the capability to communicate effectively with customers.
- Innovation. Innovation is the direct result of the exchange of ideas between experts, fuelled by user-generated content and mass co-creation (Bell & loane 2010). Web 2.0 tools allow faster innovations to appear on the market by enabling around the clock, across boundaries communication between the persons having expertise in the field (Schenckenberg 2009). Innovation is measured as (i) the capability to syndicate innovation, (ii) the capability to improve success rates, (iii) the capability to increase innovation activities, and (iv) the capability to produce efficiently.
- Training. Web 2.0 tools influence training processes since information is becoming user driven and companies face transitions toward shared data, user generated content, and user experience. As a result, training activities are not bound to a specific geographical location or time frame: webinars take place all over the world and blogs, RSS filters, forums, wikis, and podcasts may enhance the training experience. Applications with an internal focus allow for cheaper and efficient education and training for employees, while externally focused applications allow a company to integrate into the on-line industry and lower costs with training customers and suppliers. The impact of social media on training is measured as (i) the capability to support traditional training, (ii) the capability to modify training content, (iii) the capability to support asynchronous training, and (iv) the capability to codify and distribute training content.
- Knowledge management. Web 2.0 tools may improve knowledge management processes, knowledge exchange, and knowledge creation (Schenckenberg 2009). Web 2.0 tools with an internal focus may enhance the transfer of knowledge between employees, while tools with external focus on two-way communications with customers and suppliers. Knowledge management is measured as the capabilities to (i) share, (ii) retrieve, (iii) organize, and (iv) leverage knowledge.

These six latent factors all relate to organizational capabilities, influenced by social media use: the capabilities (i) to collaborate and communicate, (ii) to rapidly develop applications, (iii) to manage customer relations, (iv) to innovate, (v) to train, and (vi) to manage knowledge. We use the model of Andriole (2010) to assess the six organizational capabilities using the 23 indicators summarized above.

Based on the resource based view of the firm, the use of social media technology resources may enhance organizational capabilities, and, ultimately, business performance.

2.2.3 The impact of social media on business performance

Business Process Performance (BPP) is the efficiency with which companies transform the available inputs into outputs (Brocke and Rosemann 2010). Traditionally, business process performance is analyzed by establishing a set of Key Performance Indicators (KPIs) associated with each process of the company. The management board sets target values for each KPI and compares these targets to actual and historical values (Swabey, 2009; Wetzstein et al, 2011). Several methods for measuring Business Process Performance exist, including the Balanced Scorecard (Kaplan & Norton, 1993), the self-assessment (Hakes 1996), the traditional controlling approach (Harrington 1991), process performance measurement systems (Brocke & Rosemann 2010), workflow based monitoring (Hakes 1996), and statistical process control (Juran & Gyrna 1988). In this research we use the self-assessment method (Hakes, 1996) since it easily fits to our survey based case approach.

2.3 Research model

Figure 1 summarizes our research model on the impact of Web 2.0 technologies on latent factors and of these factors on business performance.

Proposition 1a builds on section 2.1 and assumes that ‘use of multiple Web 2.0 tools covering a set of functionalities enhances latent factors Networked Business Operating Logic’.

Proposition 1b builds on section 2.2 and assumes that “using Web 2.0 tools influences latent factors (business capabilities)”. These latent factors represent the business capabilities ‘knowledge management’, ‘Rapid Application Development’, ‘Customer Relationship Management’, ‘Collaboration and Communication’, ‘Innovation’, and ‘Training’, as identified by Andriole (2010).

Proposition 2 builds on section 2.2 and assumes that “enhancing business capabilities influences business performance”.

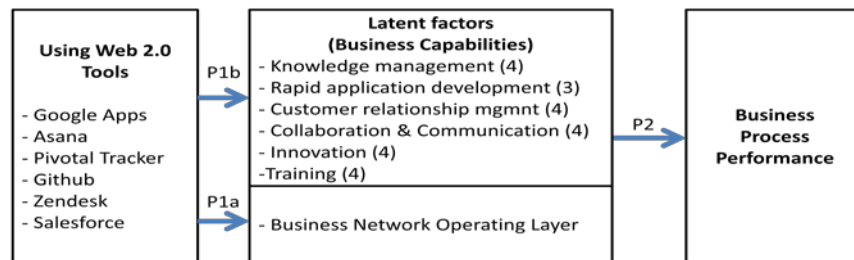


Figure 1. Research model on the impact of Web 2.0 tools on business performance (numbers between brackets indicate the numbers of indicators to assess a capability).

3 Method

Our research method is qualitative and quantitative and consists of a retrospective analysis of one case, based on interviews with actors involved in the company, experiencing and reacting to the effects of the social media use (Klein and Myers, 1999). In-depth analysis of one case is an appropriate research strategy when it is difficult to separate a phenomenon (social media effects) from its context (business processes, knowledge management, collaboration, innovation, training) (Yin, 1994). Myers (2007) distinguishes between three types of qualitative research in information systems (positivist, interpretist, and critical) and four research methods (action research, case study research, ethnography and grounded theory). Our research is not action research because we did not participate in the design and development of social media in use, and our findings did not influence the design during the period investigated. Our case study research can be regarded as positivist but critical (Mingers, 2001).

To answer the research question (what is the impact of social media on business performance) and to find empirical evidence for the two propositions, we use a mixed research method, including qualitative and quantitative analysis. Each latent factor in the research model is assessed using the indicators listed above using Likert scales (1-5). We assess business process performance using the self-assessment approach BPP in our survey question 8 (see Table 2). We have multiple respondents in this company, but still, our analysis is based on the observations in one company, one case.

3.1 Data collection

A questionnaire was sent to all employees of Sponsor Pay in order to be able to understand the way in which the Web 2.0 technologies are perceived and how their impact in terms of improving business processes is regarded by company employees. 60 respondents out of a total of 120 employees participated in the survey. The survey questions are summarized in Table 2.

The 60 respondents are classified in two groups (technical employees and business employees) based on their job specifications and business units they work in. Employees in the Advertiser Team, the

Publisher Team and Marketing are coded as “business”. System developers, product managers and technical supervisors are coded as “IT” employee.

1.	In which department do you work?
2.	How long have you been working at the company?
3.	Which Web 2.0 tools do you use on a daily basis (Google Apps (Gmail, Calendar, Docs, Sites), Asana, Pivotal Tracker, Github (github.com/SponsorPay), Zendesk (Helpdesk - helpdesk.sponsorpay.com), Salesforce (CRM), Other (please specify)
4.	How much does the tool improve your work? (scale 1-5)
5.	To which business capabilities do you believe Web 2.0 technologies contribute most? (Knowledge management/ Rapid application development/ Customer relationship management/ Collaboration and communication/ Innovation/ Training)
6.	Which Web 2.0 technologies have contributed the most to the business capabilities? (for each capability, arrange in order of contribution: Google Apps/ Asana/ Pivotal Tracker/Github / Zendesk / Salesforce)
7.	How satisfied are you with using Web 2.0 tools in your company? (scale 1 (low) -5 (high))
8.	Rate how much your work has improved or has become more difficult since the introduction of the tool (worse - neutral - better 5 points scale)

Table 2. Summary of the survey questions. Note that questions 4, 5, and 6 have been asked for each of the six Web 2.0 tools and each of the seven business capabilities).

To validate the survey findings, we did five interviews with senior managers of the company: the Chief Technology Officer, the Product Manager – Mobile, the Chief of Product, the Marketing Director, and Director Advertiser Relations. The interviews are based on the following open questions: (1) what are your tasks and what tools do you use to perform these tasks, (2) describe the impact of the tools on your work and on company performance, (3) which tools and technologies have you avoided and why, (4) what is your company’s greatest success with Web 2.0 technologies, what is the biggest disappointment, (5) what will be the role of Web 2.0 applications in the next three years?

We analyse the SponsorPay case. SponsorPay is a German start-up company in the Web 2.0 dominated field of in-game advertising in the on-line B2B2C gaming industry. We introduce the company and the industry below.

3.2 The Sponsor Pay Case in the online entertainment industry

Online entertainment is a fast growing industry as illustrated by the social games introduced by Facebook, Google, Amazon, Intel, Microsoft, and Apple. For instance, Apples App Store in 2012 represents a six billion US\$ market for 25 billion app downloads with a yearly growth of 25%. It is not hard to realize that having more than 100 million users of these social games creates an immense business opportunity for on-line, in-game advertising. SponsorPay operates in this new advertising market as a start-up company since 2009, headquartered in Berlin with offices in San Francisco, New York, London, Paris, Istanbul, and Tokyo. SponsorPay has 120 employees in 2012.

SponsorPay offers an in-game (web and mobile) advertising platform, aiming at user acquisition and brand engagement on the side of advertisers and for content monetization on the side of publishers. The overall structure of the business network is given in Figure 2 and includes the following entities:

- Advertisers can be direct advertisers or advertiser networks aiming to promote an offer (e.g. a survey, sale, registration, or an application install). Advertisers pay to SponsorPay to have their offers reaching a target audience. Advertisers may ask for advanced targeting features like geographical, demographical or application-level focus. Advertisers receive reactions to offers, which are then converted into sales leads. Users who end in such leads receive in-game rewards, and are called ‘incentivized traffic’. Their motivation to complete an offer is to receive extra free coins in the game instead of intrinsic preference for the brand, product, or service.
- Publishers are game creators (like EA Mobile and Zynga) that integrate the SponsorPay products into their game applications, thus enabling traffic (users) to see and interact with the advertised

offers. Publishers promote the advertiser offers in the games. Publishers are rewarded with a fixed fee (set by the advertiser) for each successfully completed offer. Publishers receive real currency (euro or dollars) in exchange for rewarding users with virtual currency inside the game.

- Publisher Applications (like Angry Birds and Farmville) are the actual games that users play. Applications are 'owned' by publishers and can be web-based or mobile (Android or iOS).
- Users are the players of the games and complete the advertiser offers in exchange for receiving virtual currency bonuses inside the games. Users complete offers which may require various actions ranging from installing an application, giving personal information, answering a questionnaire, entering an e-mail address to purchasing a product. Users receive virtual currency.
- Virtual currency: Applications usually have an in-game economy based on a virtual currency. Users will receive coins (or similar virtual denominations) for completing offers, equal in value to the Euro amount set by the advertiser for that offer at an exchange rate set by the publisher for that applications. For instance, an advertiser offers one Euro for successful completion, out of which the publisher will receive 0.5 Euro (after chargeback and commission). If the publisher's application has an exchange rate of 1000 coins for 1 euro, the reward for the user completing the offer will be 500 coins.

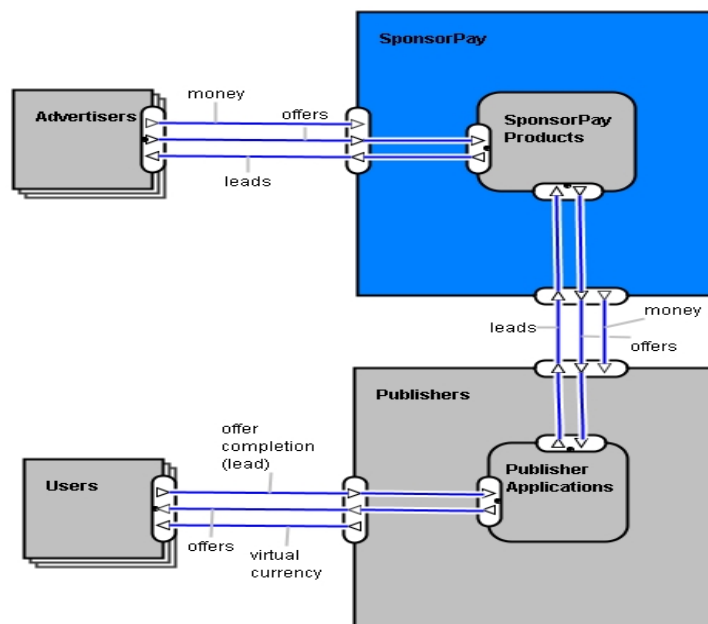


Figure 2. The Sponsor Pay business network (E3 Value model (Gordijn and Akkermans, 2001)).

- SponsorPay products are the software services which allow users to see offers, interact with them and finally get rewarded with in-game currency. The services also process the interactions with Publishers and Advertisers. The most popular product is the Web Offerwall that contains a list of offers from which users can choose one or more to complete. The mobile version of the Offerwall often offers application installs (“install and open application X to receive N coins”) for other mobile applications. BrandEngage is a new (video) product that allows deeper brand engagement. It is targeted at direct advertisers (like Nike, Coca-Cola, Samsung) that look for personal connections with users. In BrandEngage, users are supposed to watch a short video (1-3 mins) and receive the reward upon the completion of the video. A BrandEngage campaign usually includes additional steps (3-4 steps with Next and Back buttons) to drive the ‘engagement’: Facebook like button, Twitter share button, short question about the video, etc.

4 Results

We first report on our qualitative findings on the use of Web 2.0 tools in SponsorPay (4.1), then the quantitative findings validated in our final interviews (4.2 and 4.3).

4.1 Six Web 2.0 tools in the SponsorPay ecosystem

The SponsorPay Web 2.0 ecosystem consists of six Web 2.0 tools that are used as follows.

Google Apps for business is a cloud-based service that provides independently customizable Google products under a custom domain name like gmail, gdocs, calendar, sites, docs, or drive:

- Gmail is the backbone of all communication and collaboration in SponsorPay. All employees have their e-mail client open 100% of the time. Gmail is also the place where employees receive notifications from all other applications. Even though e-mail is asynchronous technology, the continuous on-line presence of employees synchronizes communication and allows receiving answers in seconds. SponsorPay also uses gmail as task manager. Prioritization of tasks is done by starring and labelling e-mails. By integrating all other Web 2.0 applications in SponsorPay, gmail is the core Web 2.0 tool in the company.
- Google Docs is the document collaboration tool that allows multiple users to view and edit all of its internal and external documents. People are linked to a document in seconds and instantly receive e-mail notification. Google Docs supports multiple file formats (Excel, Word, PowerPoint) and local files can be converted to be accessible on-line.
- Google Calendar is used to organize and plan tasks per day/ week, including functionalities to invite people to events, to send reminders, and to check availability of employees.
- Google Sites is a (static) website creator tool that allows users to create websites without having any prior knowledge of programming or web design. Google sites are used in SponsorPay as a basic knowledge management tool, with different available sites such as general, product, advertisers, publishers, customer support, and marketing. The sites aggregate information such as company rules, procedures, questions, and user problems.

Asana is a collaborative task management tool to keep track of day-to-day to-do lists per project by instantly assigning tasks to people. Asana offers functionalities like task grouping and sorting or subscriptions (receiving alerts of progress per project or task). Asana is used in the SponsorPay marketing department, where the team leader assigns tasks and deadlines to the designers. This also allows tracking the workload per employee and per department. Asana has also been tried in the Product team. However, since product managers usually work independently, the collaborative nature of the tool was not needed. Some product managers prefer alternative task management tools.

Pivotal Tracker is a project management tool to support the SCRUM method (an agile project management approach for software development). Pivotal Tracker is the major tool of product management and IT operations and the central place where project managers, IT developers and quality assurance engineers collaborate. Pivotal Tracker also acts as a archive of comments and attachments, thus representing the product life cycle story from conceptualization to final deployment.

Github is a tool for social coding and code versioning and it is free to use in open-source projects. Github is the largest software repository in the world. It enables remote teams to contribute code into one standardized code base by using advanced algorithms of file comparison and merging based on the git system. Functionalities like user comments, code viewer, activity feed, history, list of commits, pull requests, and email notifications make Github a popular place for code-sharing for both open source and enterprise projects. SponsorPay developers use Github as enterprise account for private code. All SponsorPay code is managed by Github which has increased the efficiency of IT developers.

Zendesk is a ticket (request) management system for large organizations. It has a user friendly interface for viewing and managing tickets, including tracking ticket progress and performance. Zendesk is a (Software as a Service) platform that can be integrated with the existing IT infrastructure

of a company by using a custom domain and Google Apps login. The sponsorpay.zendesk.com site is accessible at helpdesk.sponsorpay.com and the login is directly done by using the @sponsorpay.com email address. Another feature of Zendesk is the e-mail notification for each ticket assigned to or by an employee (the employee receives specific details by e-mail and the e-mail can be replied directly).

Salesforce is a popular on-line CRM platform. Salesforce presents itself as the sales cloud for the social enterprise, and offers services such as data.com where companies can buy business contacts. SponsorPay uses Salesforce as the CRM system after repeatedly trying alternatives such as Sugar CRM and Highrise. With a continuously growing sales team across many locations, SponsorPay needs a CRM tool to enhance coordination and sales performance.

Summarizing, Sponsorpay uses this set of six tools to support all business processes among the 120 employees, the customers, and the providers. Our interviews clearly indicate that together, the six tools form the social media ecosystem that enables Sponsorpay to run and coordinate its intra- and inter-organizational business processes. All business processes in Sponsorpay are supported and coordination among processes is fully based on the wide set of functionalities offered by these tools. The six tools all cover specific functionalities of the honeycomb framework, as listed in Table 3. These findings indicate empirical support for proposition 1a.

Functionality	Google Apps	Asana	Pivotal tracker	Github	Zendesk	Sales-force	Total per feature
Identity is revealed	1	1	1	1	0	1	5
Conversations are supported	1	0	1	1	1	1	5
Sharing of content	1	1	1	1	0	0	4
Presence of users notified	1	0	1	0	0	0	2
Relationships can be established	1	0	1	1	0	0	3
Reputation of users is known	0	0	0	0	0	0	0
Groups can be created	1	1	1	1	1	1	6
Total per tool	6	3	6	5	2	3	

Table 3. Web 2.0 tools characterized using the Honeycomb framework

4.2 The impact of Web 2.0 tools on Business Capabilities and Performance

Table 4 shows the impact of Web 2.0 tools on six business capabilities. The highest impact is on the Collaboration and Communication process, the lowest on the Innovation process (ANOVA, P<0.001), where IT employees report higher impacts than business employees (T-test, P<0.001)

Latent factors (Business Capabilities)	Web 2.0 Impact on Performance according to		
	All managers (N=60)	Business (N=30)	IT (N=30)
Knowledge management	3,50 (0,93)	3,40 (0,81)	3,60 (1,04)
Rapid application development	3,00 (1,10)	2,70 (1,12)	3,30 (1,02)
Customer relationship management	2,95 (1,08)	3,00 (1,29)	2,90 (0,84)
Collaboration and communication	4,35 (0,73)	4,30 (0,79)	4,40 (0,67)
Innovation	2,90 (1,15)	2,80 (1,19)	3,00 (1,11)
Training	3,05 (1,25)	2,70 (1,44)	3,40 (0,93)
TOTAL	3,29 (1,17)	3,15 (1,25)	3,43 (1,06)

Table 4. The contribution of Web 2.0 tools to six business capabilities, evaluated by 30 business managers and 30 IT managers.

Table 5 shows the average impacts of the six Web 2.0 tools on the six business process areas. The impact is measured on seven point scales, where seven is the highest (rank) impact and one the lowest. Google Apps has the highest impact (ANOVA, P<0.01) on Knowledge Management, Customer Relations Management (CRM), Collaboration and Communication, Innovation and Training.

The impact of Google Apps and Github for Rapid Application Development is only recognized by the IT employees, which is not very surprising since business employees do use these tools intensively for software development.

Web 2.0 tool	KM		Rapid App Dev		CRM		Coll & Com		Innovation.		Training	
	B	IT	B	IT	B	IT	B	IT	B	IT	B	IT
Google Apps	6,60	5,80	2,30	4,70	5,90	6,10	6,70	5,50	4,40	5,30	5,30	6,00
Asana	1,60	0,70	2,20	0,60	1,10	1,00	2,40	1,00	3,10	0,90	2,00	0,77
Pivotal Tracker	1,30	3,00	2,40	4,40	0,60	1,50	1,70	4,10	1,90	3,70	1,70	3,07
Github	1,30	5,20	2,60	5,30	0,50	1,70	0,60	5,10	2,00	5,40	1,20	4,57
Zendesk	1,60	2,40	1,40	2,50	1,50	3,00	0,50	2,20	1,30	2,70	0,70	2,20
Salesforce	3,07	0,70	1,10	0,40	4,40	1,30	2,60	0,90	1,20	0,80	0,70	1,00

Table 5. Impact of six Web 2.0 tools on business process capabilities (scores indicate the average rankings of Business and IT Managers)

Summarizing Tables 4 and 5, we conclude that there is empirical evidence to support proposition 1b, indicating that the use of social media significantly enhances business capabilities.

4.3 The impact of Business Capabilities on Performance

Finally, we evaluated the impact of social media on business process performance by asking 30 business and 30 IT employees to indicate the impact of the tools used by SponsorPay on a four point Likert scale (ranging from -1 (bad) to 2 (good)). The average score for all 60 employees is 0.8, indicating significant improvement due to social media use ($p < 0.01$). Business employees evaluate the impact of social media at 0.4 ($p < 0.01$) and IT employees score 1.2 ($p < 0.01$). IT employees evaluate the impact of social media significantly higher than the business employees (ANOVA, $p < 0.01$).

These quantitative findings were supported by the responses of the managers in the five interviews. Another observation based on Table 5 is that one social media tool (Google Apps) appears to play a key role, since it is listed as having the highest impact in 9 out of 12 rankings. This observation is acknowledged in the interviews. The interviews indicate that this key role of Google Apps is because of its linking role among the other social media tools, indicating that success depends on establishing successful linkages between the social media and the business capabilities.

5 Conclusions and Further Research

The goal of this research is to better understand the social media environment and the impact of common social media tools used in practice. To achieve this goal, we use the resource based view of the firm as the theoretical base and to distinguish between “social media use”, “social media triggered organizational capabilities”, and ‘business process performance’. We specified three relatively simple propositions, linking social media use, capabilities, and performance. We found that a combination of inter-linked social media form a social media ecosystem that enhances business capabilities (proposition 1a). We also found empirical evidence that supports the propositions and conclude that (in this case study) the use of social media enhances business capabilities. We also conclude that enhanced business capabilities lead to improved business process performance.

Our study has important limitations. First, our case study was done in on-line advertising in the on-line gaming industry, which is of course heavily based on using social media. Impact of social media in other industries must be analyzed in future research. Second, we analyzed only one young, start-up organization. More organizations of different nature and size need to be analyzed. Third, we assessed business process performance using a simple self-assessment tool. More indicators of performance should be included in further research.

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