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Foreword

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We have two expressions in our family: (1) It's never too cold for ice cream; and (2) You're never too old for the circus. It's on this latter point that I would like to relate my recent experiences to the launch of this new International Journal of Management, Knowledge, and Learning.

Last week, I went with my family to see Ringling Brothers/Barnum and Bailey Circus, billed as 'the greatest show on earth.' Even being middle-aged, I am still enthralled with the circus. It's not just the amazing international acts that form the show – but it is also the precision, logistics, teamwork, and knowledge sharing that creates the backbone and success of this circus.

I began to wonder how the adage 'life is a circus' was started. Certainly, we have multiple concurrent acts happening in our lives all the time. But, more than that, we as human beings and organizations should really emulate the circus for the following reasons. First, the pinpoint precision of catching an acrobat in your arms at the right time is analogous to an organization running on all cylinders, whereby it must be at the right place at the right time in order to outpace its competitors. Second, the logistics behind the circus whereby your eyes are averted to the new act, while the previous act is taken down in order to then create the next act, is a work of art. The music is timed perfectly to each act, and each act is orchestrated to last a set period in order for the show to move in a fluid manner. Organizations should also exemplify the circus' logistics in order to improve productivity. Third, the teamwork displayed in the circus, whether among circus performers or among the handling crew, has such a strong bond that they know if one act fails, the circus fails too. The success of the circus depends upon the synergy created among its performers, handlers, management, and staff. In the same way, an organization needs to develop a strong sense of belonging, community, and commitment in order to survive. Last, we notice that many of the circus acts are families, whereby their knowledge is passed down from generation to generation. Without this knowledge sharing, learning is difficult and could affect on-the-job performance.

Similarly, for organizations to be competitive in the future, knowledge sharing is vital for building a continuous learning culture, improving employee performance, and creating a strong succession planning and workforce development process.

Now, you may think how does the circus as described relate to this new journal? The answer is: for all the reasons previously presented in the last paragraph! With the journal's focus on management, knowledge, and learning, this triad forms the key pillars in which organizations can survive. In much the same way, precision, logistics, teamwork, and knowledge sharing embrace many of the same values that are intertwined with management, knowledge, and learning. For example, knowledge must be gained in order to learn. Learning, if done well, can relate to on-the-job performance, whereby the development of a continuous learning culture is predicated partly on the management practices for building and nurturing that culture. In the circus world, precision, logistics, and teamwork contribute to management and cultural practices. Knowledge sharing contributes to knowledge transfer and creation, as well as to learning, unlearning, and re-learning. Thus, the journal's focus can translate into what every organization needs, whether a sole practitioner, small or medium-sized business, or a multinational enterprise – or even a circus.

So, you may now have a profound appreciation for the circus or you may be wondering if I am 'clowning around.' Certainly, by focusing on management, knowledge, and learning, this new journal is at the intersection of what organizations, even circuses, need to espouse. As the research is published in these areas in this journal, we will have sound evidence on what makes an organization tick. And as we do, we will further appreciate how management, knowledge, and learning form the valuable 'three rings' (in circus parlance) for organizational success.

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Learning from and with Customers with Social Media: A Model for Social Customer Learning

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Social media can enable and significantly increase the collaboration and learning from customers in various ways, for instance by novel social ways of providing and receiving feedback from new products and concepts. We have created a model that can support managers and researchers to better analyse and understand the possibilities of social media approaches especially from the business-to-business (B2B) customer interface standpoint. We used the model to analyse found various types of business-to-business related social media approaches to create new understanding of the scarcely researched field of social media in the customer learning and the customer interface of B2B innovation.

Keywords: innovation, customer, learning, organizational learning, customer learning, social media, business-to-business

Introduction

Organizations have to learn about market needs and technological solutions increasingly quickly if they want to respond to the quick and often unpredictable changes in their business environment. This learning need is caused and driven by frequent scientific and technological breakthroughs and the quickly changing and unpredictable market and customer needs (Akgün, Lynn, & Byrne, 2003).

Much of the customer information gathered by traditional methods, such as statistical surveys, is not adopted and properly used by organizations (Deshpande & Zaltman, 1987). Some reasons for this are that it is not felt as useful by product development or it is not trusted (Gupta & Wilemon, 1988). Additionally, traditional methods are not very well-suited to uncover latent or future customer needs (Matthing, Sanden, & Edvardsson, 2004). Learning from and with customers is more easily said than done. Some foundational background for this challenge is provided by the knowledge of the limitations of customers to imagine and give feedback about something that they have not experienced (Von Hippel, 2005). This means that organizations find serious difficulties for understanding, learning from and meeting the hidden or latent needs of customers by using traditional methods, such as interviews and surveys (e.g. Matthing et al., 2004).

The recent innovation literature has increasingly emphasized the efficient use of knowledge and information not only inside the company borders, but particularly the knowledge locating outside the company borders, such as the knowledge of customers and users, as well as communities formed by customers or suppliers (Chesbrough, 2003). In addition, the co-creation of new knowledge has gained fast in importance (Rowley, Kupiec-Teahan, & Leeming, 2007; Payne, Storbacka, & Frow, 2008).

Various types of collaborative web tools and approaches, such as social media, can enable and significantly increase the collaboration and learning from customers in various ways (Peppler & Solomou, 2011; Albors, Ramos, & Hervas, 2008). Social media can for instance enable the use of the distributed knowledge and the collaborative knowledge creation not only within but also outside the company borders. Importantly, social media can provide quite novel community-oriented and social ways of providing and receiving feedback from new products and concepts (Peppler & Solomou, 2011; Barker, 2008), as well as providing a useful platform for inter-organizational co-creation (Verona, Prandelli, & Sawhney, 2006). Some forms of social media, such as virtual worlds, can also enable customers and companies to receive a real-world experience from products, as well as experiment with novel concepts (Kohler, Matzler, & Füller, 2009; Messinger et al., 2009). All the above novel possibilities are important enablers for efficient individual and organizational learning (e.g. Easterby-Smith, 1997; Von Hippel, 2005).

If social media provide novel possibilities for learning from customers, why are companies then not taking fully the advantage of social media in this respect? A recent survey of social media use in innovation identifies some important reasons that slow down the current adoption of social media in innovation: the lack of understanding of the possibilities of social media in innovation, the difficulties in assessing its financial gains and the lack of suitable case evidence were among the most important reasons for companies not adopting social media (Kärkkäinen, Jussila, & Väisänen, 2010).

Currently, the social media are so novel an area in innovation that managers have difficulties of understanding the possibilities, and due to the large variety of social media approaches, managers and researchers find it hard to understand the commonalities and differences between existing approaches. It is also difficult to understand how the various existing approaches can support learning from and with customers, and to create a larger picture of the possibilities for learning due to the lack of systematic description of current approaches, the fragmented current research, and the lack of suitable models for understanding the possibilities of social media in the specific contexts of innovation, customer interface and organizational learning.

Due to the novelty of social media concepts and approaches in business use, the possibilities of social media are not yet very well understood in the broader context of innovation. Still further, the use of social media in different specific contexts, such as the business-to-business (B2B) sector and in different types of industries, is currently poorly understood. First, since the number of customers is generally much smaller in the B2B sector (Gillin & Schwartzman, 2011), the use of crowdsourcing which is quite commonly used in B2C operations, is limited. Second, in the context of innovations and the B2B sector, legal contracts and IPR issues can become challenges in the free disclosure of product or business ideas in inter-organisational innovation collaboration (e.g. Nordlund, Lempiala, & Holopainen, 2011) and may thus seriously limit the usability of social media between B2B companies and their customers. Third, various issues concerning information security have been raised already in individuals' use of social media, but due to the nature of business-to-business communication, the business-to-business context includes severe information security risks, potentially limiting the use of social media in ways that are not necessarily similarly problematic in B2C social media applications. No studies were found to study the potential of social media more comprehensively in the B2B customer interface especially from the innovation viewpoint, or from the more specific standpoint of customer learning and the creation of customer knowledge and understanding in the innovation context.

Due to the above, our purpose is, first, to create a model that can support managers and researchers to better analyse the important characteristics of current social media approaches, especially from the B2B customer interface standpoint. In order to make the model easy to understand and to be utilized, we point out, illustrate and apply in the model the critical few dimensions needed to understand the major options and possibilities of social media in this context. This will also support the planning and roadmap building of social media use in the customer interface, showing the major directions that can be selected. Second, we use the model to analyse found various types of business-to-business related social media approaches, and create new understanding of the scarcely researched field of the possibilities of social media in the customer learning and the customer interface of B2B innovation.

Learning from and with Customers

One rather common perspective in literature is that organizations learn when their knowledge in the form of rules and standard operating procedures is changed (Argyris & Schön, 1996), i.e. their actual behavior changes. From another perspective, an organization or another entity learns 'if, through its processing of information, the range of its potential behav-

iors is changed' (Huber, 1991), or the organizational mental models and schemas change. A further important feature in organizational learning focuses on the distinction of learning between single- and double-loop learning. The basic premise is that organizations learn and make decisions and adjustments often through the mechanism of feedback (Argyris & Schön, 1996). Furthermore, it can be stated that, basically, organizations learn in two ways: through their own experiences or through the experiences of other organizations (Levitt & March, 1988). Learning from one's own experiences includes experimenting and interpreting the earlier outcomes, while learning from the others means the transfer of knowledge embedded for instance in products or processes, or transferring the knowledge in some other form.

Some foundational generic prerequisites for learning to happen in individual and organizations, commonly present in various models of organizational and individual learning, include real-world experience (Kolb, 1984), feedback from decisions (Sterman, 2000; Senge, 1990; Argyris & Schön, 1996), reflection (Kolb, 1984), socialization (Nonaka & Takeuchi, 1995) and iteration (Easterby-Smith, 1997; Kolb, 1984; Nonaka & Takeuchi, 1995).

Literature on organizational learning (e.g. Argyris & Schön, 1996) emphasizes the importance of feedback for effective learning. Sterman (2000) even goes as far as stating that all learning is based on some sort of feedback. Johannessen and Olsen (2010) point out the importance of feedback in enhancing value creation and propose that when firms and customer can both give and receive immediate feedback, the instant connection between the firm and customer's needs will enhance not only value creation but also innovation. According to Lampela and Kärkkäinen (2008), some of the main factors affecting the feedback related to innovation-related decision making deal with long time delays from decisions to feedback, the long physical distance from decisions to their effects and feedback, the difficulty in differentiating which decisions and other factors really caused a failure or a success in the innovation process or contributed to it in the longer term. Also the misperceptions of received feedback or lacking feedback are important factors. The above factors hinder both learning from customers and markets as well as learning from technological solutions.

There are a number of generic barriers to learning from customers in organizations. One foundational problem in learning from customers is that customers' and users' insights into new product needs and potential solutions are usually severely constrained by their real-world experience, meaning that they are unlikely to imagine or generate very novel product concepts that conflict with the familiar (Von Hippel, 1988). According to Adams, Day & Dougherty (1998), further more detailed major barriers for learning from markets and customer needs include compartmentalized thinking, avoiding ambiguity and inertia. The barriers affect the acquiring, disseminating and using of market information. Such barriers limit or bias the flow of market

and customer need information, as well as the feedback from other departments in the case of product innovation. This has a significant impact in the innovation process, limiting for instance the learning from the market and customer information and feedback (see e.g. Adams et al., 1998).

Customer-related learning can be divided into two major parts: learning from the customers and learning with the customers (e.g. Matthing et al., 2004). The concept 'Learning from and with customers' suggests that customers can become more than just passive informants (Matthing et al., 2004). 'Learning from customers' hints that only the other party, the supplier, learns (receives new information and knowledge about customers' needs and/or changes the mental models), while 'Learning with customers' hints that both the supplier and the customer learn by receiving and adopting novel information and knowledge. For instance Meeus, Oerlemans, and Hage (2001) define a similar concept, interactive learning of a firm as the '(in-)formal exchange and sharing of knowledge resources with suppliers and/or customers that is conducive to the innovation of the firm.' Lubatkin, Florin and Lane (2001) emphasize a strong need for a similar capability using the term 'reciprocal learning,' but they refer to the concept more in the context of alliance partners.

This interactive or both-sided learning can be achieved for instance by means of co-development and co-creation (see e.g. Payne et al., 2008; Prahalad & Ramaswamy, 2004; Rowley et al., 2007), for instance in a common development project. In such a case, the supplier would probably learn from its customer's needs, and correspondingly, the customer would learn about technological ways to solve its own needs. Additionally, both parties might additionally add their absorptive capacity (Cohen & Levinthal, 1990; Lubatkin et al., 2001), which would increase their capability to identify and adopt further need- and solution-related knowledge.

However, an even more interesting case is that, e.g. by means of novel web-based solutions such as social media, the customers may even learn to better understand their own needs and the suppliers learn about novel solutions. Various novel approaches of social media, for instance peer-learning (Rowley et al., 2007), user toolkits combined with user communities (Jeppesen & Frederiksen, 2006) and virtual worlds (Messinger et al., 2009) are able to provide such organizational learning-related benefits. These approaches and their benefits, however, remain so far very little researched and understood, especially in the B2B context (Jussila, Kärkkäinen, & Leino, 2012).

Possibilities of Social Media in Customer Learning

Although the concepts Web 2.0 and social media are often used synonymously, it is useful to differentiate them from each other (Kaplan & Haenlein, 2010). The concept Web 2.0 can be defined as technologies that en-

able users to communicate, create content and share it with each other via communities, social networks and virtual worlds, making it easier than before. They also make it easier to have real life experiences in virtual worlds and to organize content on the internet with content aggregators (Lehtimäki, Salo, Hiltula, & Lankinen, 2009). Social media can be defined 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' (Kaplan & Haenlein, 2010). Further to this, social media are often referred to as applications that are either fully based on user-created content, or in which user-created content or user activity play a significant role in increasing the value of the application or the service. Lietsala and Sirkkunen (2008) define social media being built on the combination of Web 2.0 technologies, content and communities, this definition emphasizing the social aspects, instead of Web 2.0 technologies that may or may not be used in an interactive and social manner.

A large number of generic types of social media-related applications can be identified (e.g., Warr, 2008; Cooke & Buckley, 2008), such as wikis, blogs, microblogs, social networking sites, social content communities, and virtual worlds. Some of the practices are already relatively well established in private and business use, such as participating in wikis, blogging, and social networking, and some are still developing, such as microblogging, or participating in virtual worlds.

In general, social media and Web 2.0 have been noticed to bring several benefits for organizational learning and knowledge management. These include enhancing networking and the use of weak ties (Levy, 2009; Schneckenberg, 2009), facilitating the mobilization of tacit knowledge (Ribiere & Tuggle, 2010; Schneckenberg, 2009), facilitating knowledge acquisition; (Schneckenberg, 2009; Ribiere & Tuggle, 2010; Levy, 2009), organizing knowledge and information (Ribiere & Tuggle, 2010), and enhancing information and knowledge sharing (Levy, 2009). According to the literature, social media provide quite novel and useful ways of interacting and collaborating with customers in the innovation process, as well as for creating new information and knowledge for innovations (Kohler et al., 2009). In brief, new web-based technologies, such as social media, can enable a shift from a perspective of merely exploiting customer knowledge by the firm to a perspective of knowledge co-creation with the customers (Sawhney & Prandelli, 2000).

One of the key benefits of social media in customer learning is that they enable unfiltered feedback to be received from customers (Singh, Veron-Jackson, & Cullinane, 2008). Furthermore, social media can provide more rich feedback than traditional media. For example compared to e-mail, virtual worlds provide a hugely more representational-rich environment for com-

panies to have direct and rich interactions with their customers (Kohler et al., 2009; Lee, Cheung, Lim, & Sia, 2006).

Novel modes of interaction that support for instance community-based peer-learning have emerged with internet-based collaboration and social media (Sawhney et al., 2005; Bullinger, Neyer, Rass, & Moeslein, 2010). Importantly, social media can provide quite novel community-oriented and social ways of providing and receiving feedback from new products and concepts (Peppler & Solomou, 2011; Barker, 2008), as well as providing a useful platform for inter-organizational co-creation (Verona et al., 2006). Additionally, even without direct interaction with customers in social media, various analysis tools such as data mining and social network analysis can be utilised for creating customer information and knowledge from social media supported communities.

Introducing Social Customer Learning Model

The four-dimensional Social Customer Learning Model was created in our research group to better understand in which different ways social media have been and can be utilized to learn from customer needs in the B2B-environment. In creating this model the aim was to consider some major characteristics of B2B's related to this respect. We also utilized the empirical study of Kärkkäinen, Piippo, Puumalainen and Tuominen (2001) to check that the most common challenges of B2B's to assess their customers' needs and to get useful understanding about them were taken into consideration in the dimensions. The model was tested and preliminarily validated with 14 B2B-cases to see how the model brings out important differences in social media utilization.

The introduced Social Customer Learning Model includes four dimensions which describe the different major factors affecting the learning from customers. The dimensions are 1) level of information richness, 2) immediacy of feedback, 3) level of interaction, and 4) number of actors. We have selected the critical few dimensions that explain the major possibilities of social media to support learning from and with customers especially in B2B's. They enable affecting the major learning challenges described in the second section. Information richness and immediacy of feedback are related partly to the ability of approaches, e.g. virtual worlds, to provide immediate visual feedback for customers and suppliers, helping them to also reflect on their decisions and iterate the solutions based on the feedback. Partly they are related to the quality and amount of feedback that can be delivered through the social media approaches used. Level of interaction is related mostly to the earlier mentioned one important prerequisite of organizational learning, socialization, as well as to the ways the approaches are used, since social media can be used in various ways from

Table 1 Table Of SCL-Model Dimension Descriptions

Information richness definitions	
Very low: Numerical feedback (data)	1
Low: Textual and numerical feedback	2
Moderate: Textual and visual 2D feedback and/or audio	3
High: Visual 3D and/or video feedback	4
Very high: Face-to-face or virtual face-to-face	5
Immediacy of feedback definitions	
Very slow: History, trends	1
Slow: Asynchronous	2
Moderate: Periodical and consequent	3
Fast: Realtime and consequent	4
Immediate: Realtime and simultaneous	5
Interaction levels	
No direct interaction	1
One-way interaction (broadcasting)	2
Commenting between two parties	3
Deep dialogue between two parties	4
Community interaction	5
Number of actors	
Number of stakeholder groups	1 . . . 5

no direct interaction to intense social community interaction, which is the characteristic feature of social media. Often companies start the use from less interactive, and develop gradually the culture and skills towards more intense interaction. The number of actors refers to how many different actors interact through the communities, which affects the type and depth of customer-related learning that can be achieved. Based on the literature review, the dimensions thus are essential and affect both the type and depth of learning that can be achieved. Next the dimensions are presented and explained (see Table 1).

Daft and Lengel (1984) introduced media richness theory to explain information processing behaviour in organizations. The media richness concept consisted of feedback immediacy, number of cues available, variety of language and personal focus. According to Dennis and Kinney (1998), immediacy of feedback and multiplicity of cues are arguably the most important factors (c. f. Kraut, Galegher, Fish, & Chalfonte, 1992). Kaplan and Haenlein (2010) utilized the media richness theory to classify social media tools. Nöteberg et al. (2003) separated the concept of feedback immediacy from media richness to better explain the use of new technology-based media, as Daft and Lengel's (1984) media richness model did not consider the features of new web-based technologies, such as social media. There-

Table 2 Table of Researched 14 Social Media Tools with SCL Model

Case	(1)	(2)	(3)	(4)
Angel IVR wiki	2	2	5	3
BASF social media newsroom	4	2	2	3
Boeing blogs	2 (2–4)	2 (1–2)	2	3
Bombardier innovation contest	3 (1–3)	2 (1–4)	3	2 (2–5)
Caterpillar on-line community	2 (2–4)	2	5	2
Crescendo virtual 3D design tool	5 (4–5)	5 (2–5)	4	2 (1–3)
Intuit SME blogs and forums	2	2	5	4
Lilly innovation platforms	2	2	5	5
Mydeco social user toolkit for innovation	4 (2–4)	4 (1–4)	4	5 (1–5)
National Instruments Developer Zone	3 (2–3)	2	5	2
SAPiens innovation community	2	2	5	2
Steelcase virtual world design contest	5 (4–5)	4 (4–5)	3	1
Tecnisa innovation community	4 (2–4)	2	5	3 (1–5)
Wells Fargo virtual world	5	5 (4–5)	3	1

Notes Column headings are as follows: (1) Information richness, (2) Immediacy of feedback, (3) Level of interaction, (4) Number of actors.

fore, we divided the larger concept of media richness into two dimensions in our model: information richness (multiplicity of cues) and immediacy of feedback.

Information richness is defined as the ability of information to change understanding within a time interval (Choo, 1991). According to him, communication transactions that can overcome different frames of reference or clarify ambiguous issues to change understanding in a timely manner are considered rich, and communications that require a long time to enable understanding or that cannot overcome different perspectives are considered low in richness. Thus, information richness can be seen to include the number and quality of cues. Face-to-face communication allows the simultaneous observation of multiple cues, including body language, facial expression and tone of voice, which convey more information than only the spoken message (Daft & Lengel, 1984). Virtual worlds, such as Second Life, make it possible to replicate the information richness of face-to-face interactions in a virtual environment (Kaplan & Haenlein, 2010). Thus, interaction in virtual worlds can be considered to convey a very high level of information richness. Less rich than virtual worlds, feedback in the form of 3D images or video in social media can provide a high level of information richness. Text combined with visual feedback, e.g. 2D static images, represents a moderate level of information richness, whereas solely textual feedback can be considered as low level, and finally, only numerical feedback or data is considered a very low level in information richness.

Immediacy of feedback describes how quickly a medium allows users to respond to the communications they receive (Daft & Lengel, 1984), or the user to receive, e.g. visual feedback from his or her decisions. Immediacy of feedback has an impact on the speed of feedback acquired and the speed of learning. Face-to-face is the most immediate form of feedback (Daft & Lengel, 1984), as happens in realtime and simultaneously. Virtual worlds can mimic face-to-face feedback in terms of realtime and simultaneous communication (Kaplan & Haenlein, 2010). It can take longer and be more difficult to understand a message when communication is consequent instead of simultaneous. This can be the case, for example with Skype video, where typically communication takes place consequently. Moderate feedback in social media refers to periodical and consequent feedback, where feedback is not immediate but happens at fixed time intervals, for example a daily notification of new messages in Yammer microblog. Slow feedback in social media either lacks the above types of possibilities of immediate, fast or moderate interaction between the parties, or else such functionality is not utilized in practice. Slow feedback is for example blog or microblog posting between the company and the customer, or between customers, that takes place asynchronously, without notifications from the service. The final level, the very slow type of feedback is the history or trend information that is generated by monitoring or analyzing the social media user data. Such user data can be, for example, how many times a certain content has been liked, viewed, shared, etc.

Multiple studies indicate the importance of customer interaction in understanding customer needs better and support new product development (e.g. Bonner, 2010; Johannessen & Olsen, 2010). The model dimension 'interaction level' describes how a company or customers learn from customer needs by interaction. Rafaeli (1988) categorized interactions to three levels: non-interactive communication, reactive communication and fully interactive communication. Since the new social technologies offer more interactive ways to connect, our interaction dimension consists of five levels, which correspond to the novel interaction possibilities of social media. The interaction levels in this model are: no direct interaction, one-way interaction (broadcasting), commenting between two parties, deep dialogue and community interaction. 'No direct interaction' is possible for example when the company is only monitoring customer behavior and use of social tools. 'One-way interaction' includes broadcasting information from company to customers without any feedback possibilities. 'Commenting' refers to superficial, occasional comments in which the nature of information is not very in-depth. 'Deep dialogue' means two-way interaction including more commenting and exchange of ideas and viewpoints, usually between two parties. Two-way interaction represents an interactive exchange, while ideas

and viewpoints are communicated and analyzed, and feedback is provided (Bonner, 2010). Community interaction refers to conversation between multiple parties, where the exchange of opinions, knowledge and ideas is possible. Community interaction is one way for firms to enable knowledge sharing and co-creation among their business customers (Erat, Desouza, Schäfer-Jugel, & Kurzawa, 2006).

In the competitive business environment the role of networking with supply chain partners has increased in recent years (Cao & Zhang, 2011). Since great diversity of knowledge is distributed across the supply chain, collaboration provides an ideal platform for learning (Verwaal & Hesselmans, 2004). The model dimension 'number of actors' describes how many active stakeholder groups a company interacts with by social media, in order to learn about and to understand the customers' needs. Company's own employees are not included in the number of stakeholder groups since we are considering only external actors in learning from and with the customers. The importance of the number of actors derives from the need to understand widely a company's market and customer needs. B2B companies should take into consideration various parties in the customer chain towards the end user to be able to better understand and also to predict customers' explicit and latent needs (Kärkkäinen et al. 2001). Stakeholder groups considered in our model include direct and indirect customers, partners, research organizations, competitors, intermediaries, end users and external experts.

Case Studies

This section includes more detailed case descriptions of the four case companies' social media utilization. It also provides the case analysis and comparison using the Social Customer Learning Model presented in the earlier section. The four cases were selected by using the maximum variation case selection strategy (Flyvbjerg, 2006). The purpose was thus, first, to test and preliminarily validate the model concerning its ability to point out important differences in various social media approaches, as well as obtain more in-depth understanding about the various ways for utilizing social media in B2B customer interface. The chosen cases were preliminarily deemed to be different from each other on at least one of the model dimensions. In Figure 1 the cases are presented with the developed Social Customer Learning Model. Next, the cases are briefly described and analysed.

Case 1: Bombardier Innovation Contest

Bombardier is a global transportation company operating in two industry-leading businesses, aerospace and rail transportation. Bombardier utilized social media to create a YouRail-competition for creating new innovative

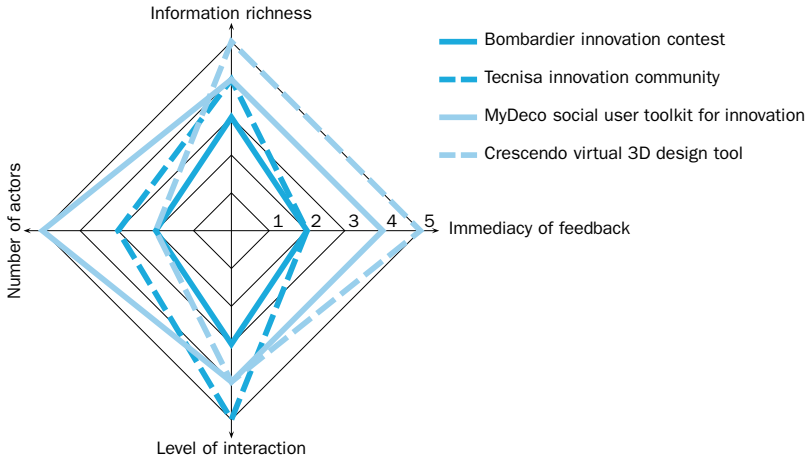

Figure 1 Different Social Media Tools Described with Social Customer Learning Model

interior designs for trains. Bombardier took advantage of the innovative potential not of their direct B2B-customers but of the end-users, for instance train enthusiasts, by calling for submissions world widely to gather first-hand end-user insights by the creation of novel designs, reviewing others designs for ideas, giving the designs ratings, and providing comments (Haller, Bullinger, & Möslein, 2011). The YouRail-website enabled users to create their designs by using a configuration tool as well as to freely create them in a design tool. In addition, the website also contained a user community where registered users could explore all uploaded designs, comment on other users' designs and give them ratings. During a ten-week period, 2232 persons participated in the innovation contest by submitting 4298 designs, as many as 26 617 ratings, and 8582 comments on competing designs (Haller et al., 2011).

Information richness in the YouRail-web site was evaluated by direct and participant observations to be moderate level, since the acquired feedback included photos of designs usually with textual descriptions. The immediacy of feedback for the company was deemed generally to be slow, since the community contributes designs asynchronously to the service. The YouRail user community enabled commenting others' designs, although the level of interaction was mainly limited to single textual comments. With the innovation contest Bombardier could get into touch with and utilize the creative resources of two major stakeholder groups that the company had relatively little earlier understanding about: the end users and other outside experts, such as designers. Both groups provided important novel viewpoints to enable the company to learn from the current customer needs from the user perspective.

Case 2: Tecnisa Innovation Community

Tecnisa is one of Brazil's most profitable constructors, and the company is operating in all areas of the real estate development sector. The company invests significantly in understanding and meeting its clients' needs, while Tecnisa's Ideas-community is one interesting approach in gaining new customer understanding. 'Tecnisa Ideas' is an online innovation community that is open for everyone interested. In the community the users can generate new ideas from small enhancement requests to developing whole new concepts. The ideas can deal with Tecnisa's construction projects, building sites, individual apartments or for instance with just one single feature in a garage. Via Tecnisa Ideas-community, users can create and develop ideas, vote for ideas, leave questions, and participate in idea challenges created by Tecnisa. They can also contact with other users and follow the ongoing discussions about ideas and inspirations.

In the community of Tecnisa Ideas the information richness level was evaluated by direct and participant observations to vary from very low level to high level, since the feedback acquired by users can vary from the number of 'likes' for a certain submission to textual, visual, and even video-based feedback, which is encouraged because it can provide the most informative feedback. However, the feedback immediacy was deemed mainly as slow, since the community parties are mainly interacting with each other by asynchronous means. Via Tecnisa Ideas, users can generate ideas together with other users by asking questions and discussing them with the community users or by proposing enhancement requests for others' ideas. These all enable community interaction. The community connects mainly two groups of stakeholders, end users and designers, with each other and with Tecnisa.

Case 3: Mydeco User Toolkit

Mydeco is the UK's largest homeware and interior design web portal for shopping furniture, planning home decorations and design. Mydeco web portal is linking many consumer and B2B parties within a single community: the web site brings together more than 2000 high street stores, designers and boutiques, while Mydeco also works as a link between home decorators and the furniture manufacturer. Mydeco provides value to home decorators with the Mydeco 3D online designer tool, which both consumers and other designers can use to plan their room decoration. 3D room designer is a user toolkit by which users can design rooms with realistic 3D. It is possible to see other users' 3D designs, as well as review and grade them. Users can also join to community subgroups based on their specific interests, and they can create, comment on and subscribe to user blogs of home decorators or professional designers. It is also possible to use designs that others have

created as a basis of own design, thus enabling learning from peers in many different ways. As a further result, the users also get a cost estimate of the whole design.

By direct and participant observations it was evaluated that Mydeco provides high information richness while the designs can be seen in 3D. The feedback immediacy with Mydeco was deemed to be between very slow and fast. This means that the home decorator can receive visual feedback from his or her experiments relatively fast by viewing them in 3D. However, peer-feedback for designs via e.g. Facebook or feedback to designer companies from their own designs can be moderate, slow or even very slow. Very slow for instance when the number of 'likes' or views of designs is monitored, slow when feedback in the form of comments is received asynchronously and moderate when comments are received periodically.

Mydeco portal provides not only deep dialogue but also community interaction possibilities since users can contact each other by forums and comment on each other's designs. 3D plans can also be shared with others when users are willing to design a room collaboratively. Mydeco makes it easy to involve many stakeholders. Main stakeholder groups involved in the portal are home decorators, professional designers and furniture manufacturers, but also e.g. design magazines and constructors can be easily involved, for instance by the creation of their own room decoration competitions.

Case 4: Crescendo Virtual Design Tool

Crescendo Design is an architecture and design firm which plans houses and some urban planning. They have been utilizing the virtual reality platform Second Life in communicating and interacting with their B2B and consumer clients. Second Life enables meetings with clients virtually, and clients may review the designs from their working place or home. In virtual meetings the company or its clients can test different design ideas in real-time, and customers can see the changes instantly while both receiving and giving instant feedback as they experience the design in an almost real environment. Virtual worlds enable designers and architects to gain valuable insight into the development of new products, when analyzing users' reactions towards virtual prototypes.

By direct and participant observations with the virtual design tool the information richness was evaluated very high and feedback acquisition from fast to immediate, since the interactions in the virtual world are very close to real life face-to-face interactions. Customers can receive and give instant feedback from changes to designs as they can experience the design in virtual reality. The interaction is usually deep dialogue between two parties, where the designer and client or client groups meet virtually and dis-

cuss about the design. As clients can also meet virtually with other experts whose opinion they want, there are mainly two stakeholder groups involved: customers and outside experts.

Discussion and Conclusions

In this study, we have created and proposed a model, the Social Customer Learning (SCL) model to analyse the potential of social media approaches in the customer interface of especially B2B innovation process. We also analysed, iterated and preliminarily validated the model by analysing various different types of B2B approaches.

On the basis of the preliminary testing and validation, the model seemed to be able to support recognizing and bringing forth important customer learning-related differentiating characteristics of the studied social media approaches. Many social media approaches that on the surface level seemed relatively similar were found, through SCL model analyses, to include important differences, for instance concerning the quality and type of feedback concerning customer needs received from the use, as well as the type of interaction supported.

The model can be applied to analyse quite various types of social media applications. The model was designed to be rather generic, and thus, it could be criticized for being too general to be pragmatically useful. However, our aim was to describe and analyse very different types of social media approaches available, from more simplistic and less information rich microblogging and blogging solutions to highly information rich virtual world communities. Thus, such a model had to be designed at a relatively high level of generality. We tested mainly B2B company-oriented customer communities, excluding in this study for instance intermediary organization-types of closed communities such as InnoCentive, which have rather little value in the in-depth customer learning.

On the basis of our analysis of 14 B2B social media cases altogether, and 4 more in-depth analyses, we found interesting rather novel opportunities for customer learning from the use. A large variety of levels of use was discovered in all the four dimensions of the SCL model. No two similar profiles were found in analysing the 4 more in-depth or even the 14 cases of more superficial analysis. This indicates, first, that the model was able to uncover differences quite well, revealing the existing differences. This supports the functionality of the model dimensions and level descriptions. Second, the results reveal that there is a large variety of different forms of existing solutions that can be used in the B2B sector to support learning from and with customers. Thus, we have demonstrated that not only B2C's but also B2B's can really make use of and benefit from social media in their innovation process and customer knowledge creation. Furthermore,

on the general level, our study has demonstrated that various social media approaches can promote the change from merely exploiting customer information and knowledge by companies to actually engaging customers to be involved in knowledge co-creation with their suppliers and peers.

Some of the learning-related benefits were related to learning from customers, and some, on the other hand, to learning with customers. In earlier studies, even if user-toolkits combined with communities and peer-learning have been identified as a novel and very useful social media approach in customer-oriented learning and innovation, the existing examples identified in current studies (e.g. Jeppesen & Frederiksen, 2006; Piller & Walcher, 2006; Franke, Keinz, & Schreier, 2008) have been almost solely intended for consumers and usable as models for the consumer-sector only. Such examples include the cases of Lego and Threadless user communities. In our study, three very different types of possibilities for using user-toolkits (c.f. Von Hippel, 2005) in B2B customer learning were recognized in this study, namely Bombardier innovation contests, Crescendo 3D design tool in Second Life, and Mydeco's 3D social user toolkit for interior design. The analysed profiles of all these three differed from each other very distinctly in all four model dimensions. The ways for peer-related learning and experimentation-related learning through various types of feedback were also quite different from each other, providing interesting models for B2B's that can be applied in different situations and industries. In addition, the number and type of stakeholders of the respective communities and the ways that they interacted with each other, enabling peer-learning differed clearly.

There are various possibilities for benefiting from using the SCL model both managerially and academically. The model can be used, first, for evaluating the major characteristics of existing B2B-related social media approaches in the customer interface of innovation. It can be applied to support the identification of novel social media approaches that might serve as examples and models for creating or facilitating companies' own social media approaches. The model serves also as a basis for building a roadmap for social media adoption: all four dimensions serve as potential directions for extending current approaches and for planning the adoption in reasonably small, manageable steps using also the level descriptions as a guideline. Thus the model may help in avoiding too large or unplanned steps, because the adoption of more complex approaches may take a long time and requires the simultaneous development of new open culture, incentives, processes, skills and information security management. We notice also that the model may help to identify novel possibilities of social media implementation, helping for instance to identify novel combinations of different dimensions and their respective levels.

While ideally, model dimensions should be fully independent, we found that few correlations exist between some model dimensions. These are concerned mostly between the very high level of information richness and the other dimensions, especially the immediacy of feedback. However, the proposed model in our opinion addresses the paper goal better from the specific standpoint of customer-related learning by B2B social media applications than found earlier information richness models, and provides a more descriptive way to analyse and distinguish between different social media approaches, especially in their capability to support customer-related learning, as intended. Still, this matter should be taken into consideration when interpreting the results, and the results should be interpreted more as a means of better understanding, characterizing and distinguishing the major characteristics of B2B social media applications that affect the ability of the applications to support customer-related learning.

Further research includes the more detailed validation of the model with more in-depth analyses of B2B cases, as well as the identification and analyses of further novel B2B approaches. We also consider it interesting in our further research to analyse which kinds of customer learning-related synergies might be approachable by combining for instance user toolkits with various types of community approaches, while the benefits are derived from the combination of for instance experimenting with novel concepts, getting both sensory feedback from 2D or 3D pictures and feedback from peers and respective communities.

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A Composite Strategy for the Legal and Ethical Use of Data Mining

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An increasingly popular business practice, data mining provides for the extraction of information from existing data to identify trends such as consumer purchasing practices and can foster greater efficiency in companies' marketing efforts. There are corresponding costs associated with data mining, as well. The most difficult issue surrounding data mining is that of individual privacy rights and the costs associated with the potential alteration of 'traditional' privacy rights. This paper seeks to review basic definitional information on data mining and provide a strategy for companies' successful, meaningful and ethical use of data mining as presented for meaningful knowledge generation.

Keywords: management, learning, knowledge, data mining, text mining, privacy, ethics, strategy

Introduction

Historically and anecdotally, the 'village gossip' was the best source of a wide variety of information, although not always an accurate one. Currently, society has two much better, more efficient and accurate sources of a much wider spectrum of information: data mining and its natural extension, text mining. The information potentially available to anyone with the right resources ranges from people's name, address and telephone number to their personal financial and medical information (Montana, 2001). 'Seeing' these data is becoming a major component in decision support and the formation of organizational strategies. The 'Age of Information' has transformed society's understanding of the concept of information from its present form of 'something that we ought to know' into its evolving form of 'something we could otherwise never have known or used effectively.' A clear sign that data-recording and evaluation is becoming central to society's operations is the substantiation of a 1999 prediction by professionals at the University of California at Berkeley. They predicted that by the year 2004, the amount of stored information would be double that of the 1999 storage rate; that trend has been confirmed (O'Harrow, 2004).

This paper sets out to define data mining, its purposes, stakeholders

and common usages, and then focus on the ethical issues and burdens of data mining. While much of the literature has focused on the techniques used and the benefits gained from data mining, careful consideration must be given to how that data has been used and cared for. The paper ties existing ethical frameworks to data mining strategies that organizations can use in concert with data usage and technical strategies.

Data Mining: Definitions and Functions

Data mining '[...] attempts to extract even more information from existing data by finding a correlation or trend in the existing data. It is also called knowledge discovery [...] because data miners do not know specifically what they are looking for before they find it. They are seeking to discover new insights from the data in their databases [...]' (Cary, Wen, & Mahatanankoon, 2003). Text mining is a more refined type of data mining, one that allows for more intelligent, refined and efficient searches of textual information. The focus of this paper is on the broader search model of data mining.

Data mining can be defined broadly as the analysis of database information. By its simplest definition, data mining is the set of activities used to find new, hidden, or unexpected patterns in data (Marakas, 1999). Its purposes can be described in a variety of ways. First, 'data mining is the analysis of data to establish relationships and identify patterns' (FindLaw, 2012). Database information mining can also be used to identify specific product information and codes. In addition, the purposes of both cleansing and re-formatting data for future use are served by data mining.

Further, data mining is used as an information extraction activity which has the goal of discovering hidden facts contained in databases. Using a combination of machine learning, statistical analysis, modeling techniques, and database technology, data mining finds patterns and subtle relationships in data and infers rules that allow the prediction of future results. This information can then be used to increase organizational learning and the overall knowledge base. According to a Gartner magic Quadrant Report for Customer Data Mining applications, SAS and SPSS remain leading vendors with Portrait Software and Angoss Software listed as challengers, ThinkAnalytics as a visionary, and Infor CRM Epiphany, Viscovery, and Unica as niche players (Herschel, 2008). This is not an exhaustive list, but the firms that Gartner reviewed were based upon functionality including pulling data from a variety of dissimilar data sources and 'support common CRM decisions such as customer segmentation, cross-sell or customer churn prevention, with data mining-driven-insights' (Herschel, 2008). However, CRMs are not the only use for data mining applications. Olson (2007) describes that data mining can be used in a variety of operational needs including banking and

credit card management, fraud detection, and risk analysis. It can also be used for analyzing market segmentation, customer profiling, evaluation of retail promotions, and credit risk analysis (Two Crows Consulting, 2012). It is this ability to analyze a variety of data sources that allows data mining to produce different outputs than surveying customers, suppliers, and others for a variety of reasons. The first of these as discussed is that data mining produces unexpected results. Surveys, questionnaires, and other types of instruments address a hypothesis or research question that is already known. This is not a bad thing and provides answers for questions and issues that are known. Data mining can answer existing questions and find patterns that will create new questions. It can also generate predictions based on previous patterns (Meidan, 2011). An example of the predictive capability of data mining is bankruptcy predictions using a variety of statistical methods (Olson, 2007).

According to Marakas (1999), data mining processes may be classified by the functions they perform or by the class of application they can be used in. Four categories emerge: classification, association, sequence, and cluster. The most broadly applicable technique is that of classification. This application discovers rules about whether an item or event belongs to a particular subset or class of data. For example, the response of customers to a particular direct mail campaign can be predicted by designating the appropriate parameters in the firm's information database from which the direct mailing campaign information will be drawn.

A second function of data mining is the association function. This approach employs linkage analysis of transactions that have a high probability of repetition. For example, the purchase of two products from the grocery store by the same person at the same time can be associated, such as skim milk and yogurt, peanut butter and jelly. The sequence function of data mining relates events in time. A very good example can be found in the mail catalog industry: when a customer uses a credit card to buy clothes from a certain type of store, data mining allows other, similar companies to be apprised of the purchase. The firm who mined the data about the purchase will then immediately target that buyer. A rational extrapolation of the first purchase is that the consumer may be likely to make similar purchases from other merchants. This function of data mining appears to be the most important reason that businesses use data mining. It is used as a tool for identifying consumers to target in direct marketing campaigns (Cary et al., 2003).

Finally, the fourth function of data mining is simply to identify sets of objects grouped together by virtue of their similarity or proximity to each other. This approach might be used to mine credit card purchase data to discover that meals charged on a business card are typically purchased on

weekdays and have a value greater than $250, whereas meals purchased using a personal credit card occur on weekends and have a value less than $175.

Common Usage and Stakeholders

There are many uses to which data mining can be put. Additionally, there are many stakeholders who both use and are affected by data mining. Data mining tools for these uses include a wide range of analytical activities, including data profiling, data warehousing, online analytical processing and enterprise analytical applications (Agosta, 2004). The most common uses of data mining efforts can be categorized into four areas: efficiency, security, customer-service, and product innovation. It can be used to increase efficiency and enhance security via its ability to detect fraud, waste and abuse; the discovery of patterns of monetary disbursement can reveal both inefficient spending patterns, as well as unauthorized patterns of spending. An example of fraud detection is the use of data mining for forensic investigators within accounting audits (Meidan, 2011). Additionally, efficiency is enhanced by the use of data mining via the better management of human resources; for example, employers may be able to choose better employees for specific jobs than they were able to without the knowledge base provided by data mining. Data mining can be used to improve service performance for customers; patterns of customer choice and spending can help the firm better provide more satisfactory goods and services for customers.

The final category of use of data mining is enhanced product innovation. Like the use of information to provide better customer service, data mining can provide better analysis of scientific and research data. For example, drug and medical research can be greatly enhanced by data mining techniques. Today, thanks to data mining technology, business is easily able to collect volumes of information, store it and access it at any time to mine for the necessary information. Also, this technology has enabled businesses to perform data mining on many types of data, including those in structured, textual, web, or multimedia forms.

In addition, data mining techniques can be implemented rapidly on existing software and hardware platforms to enhance the value of existing information resources and can be integrated with new products and systems as they are bought on-line. When implemented on high performance client/server or parallel processing computers, data mining tools can analyze massive databases to deliver answers to questions such as ‘Which consumers are most likely to be receptive to our advertisements?’ or ‘Which industrial processes are more likely to be most efficient?’ (Cary et al., 2003). Clearly, the ability to answer more effectively and in a more timely fashion questions such as these can only be beneficial to the firm.

In order to understand the benefits and burdens of data mining more

fully, one must recognize those who are most closely affected by its use. In this review, it is imperative that the interests of stakeholders be considered; an ethical analysis of data mining must begin with the identification of the key stakeholders affected by data mining practices and a description of how the stakeholders may be positively or negatively affected. 'A stakeholder is any individual, group, organization, or institution that can affect, as well as be affected by, an individual's, group's, organization's, or institution's policy or policies' (Wood-Harper, Corder, Wood, & Watson, 1996, p. 9). These include, but are not limited to, customers/clients of the data warehouse, data warehouse management, subjects of information searches, shareholders of all companies affected by the firm's behavior, employees of the various firms involved, the community, society at large, and current and future financial backers of the firm. Other stakeholders include professional associations, governmental regulatory agencies, competitors, and information suppliers. In the consideration of data mining, several constituents are more important than others (Payne & Landry, 2005). Some stakeholders are more important than others because the positive or negative effects of actions done upon various stakeholders can differ greatly. The magnitude of harm that might be felt by the stakeholder if the data mining process was not executed in an ethical fashion could be great. For example, the public image of the firm collecting the data can be significantly harmed if consumers feel that the collection of the data was an egregious violation of their privacy. On the other hand, stakeholders such as professional associations monitoring the use of data mining or future financial backers of a project may not suffer the same degree of harm: in this case, the data miner might be less likely to be perceived as the *bad guy* in data mining efforts.

Business Benefits and Ethical Burdens of Data Mining

There are large numbers of uses to which business entities put data mining. These uses correspond to the many benefits accruing therefrom. Commercial information services have been in existence for decades, providing services regarding financial information (O'Harrow, 2004). Use of data mining in this area has arguably reduced the number of financial failures among unsuitable borrowers. Another benefit of data mining is that derived from better marketing practices. 'Data mining and direct marketing are beneficial to the business community because they enable businesses to identify more accurately the target audience for their product or service, thereby reducing marketing costs' (Morse & Morse, 2002, p. 77). Corporations can use mathematical and statistical techniques to determine salient behavior patterns that were previously hidden in large databases compiled by the business (Markoff, 1999; Morse & Morse, 2002).

According to Morse and Morse (2002), there are two major benefits that

Figure 1 Pressures Felt by Stakeholders of Data Mining Techniques (adapted from Payne and Landry, 2005)

accrue as a result of data mining. First, the discovery of relevant data and behavior patterns allows marketers to better learn and understand the interests and purchasing behavior of consumers. This benefit is the foundation of the second benefit: the more accurate knowledge marketers have about their consumers, the less money they will have to spend either in identifying the consumer or in identifying the consumer's consumption habits or patterns. '[B]usinesses can save money on marketing while increasing their customer base substantially' (Cary et al., 2003, p. 158).

While businesses are using data mining for improving service, detecting fraud, analyzing scientific information, and, *inter alia,* managing human resources, it can be concluded that vast amounts of data, including personal information, can be collected, organized, and manipulated easily in the firm's efforts to uncover hidden consumption patterns and predict future trends and results. Thus, although there are many significant benefits to be derived from data mining, there are also serious drawbacks to unlimited or unregulated use of data mining. Incorrect conclusions can be drawn from data, data can be used for other than the original purposes for which they were collected and privacy rights can be violated. Additionally, data mining can create inferences that reveal information that the subject of the information does not want or choose to reveal: information that could be harmful if known to the wrong person. Further, costs of data mining must include those attributable to the improper or even incorrect collection and use of the data. 'Data mining is not carried out with scientific rigor. The quality

or randomness of the original data is not strictly verified and therefore the significance of inferences drawn from the data must be in question (Cary et al., 2003, p. 161).'

The potential costs of data mining and text mining can be substantial and unexpected. These costs can be both tangible and intangible and result from consumer opposition to data mining practices that may be seen as unethical. However this is not a new issue. For example, Lotus Corporation had to abandon a potentially lucrative product called Households when public outrage about privacy right violations caused their stock to fall. Households was designed to search for customers' profiles according to data provided by Equifax, a credit reporting agency. The public forced the company to scrap the product because they believed that their privacy rights were being violated (Invasion of privacy, 1993).

Concerns over privacy rights violation in general give rise to two more potentially costly problems of data mining. First, the subject of the information search does not have control over his own data, yet it is he that will suffer from the inaccurate or incorrect assessment of the data. Second, the gatherer of the information must give heed to his responsibility to keep the gathered information secure. 'If companies are going to gather and infer sensitive data about individuals they must make a reasonable effort to protect it from unauthorized access and from unethical use by employees or outside agents (Cary et al., 2003, p. 162).' This problem is compounded by the use of mobile devices to connect to data repositories within the enterprise and more sophisticated attacks from around the world (Higgins, 2007) which provide conduits to steal data. These problems are encompassed in the larger question of privacy rights of those about whom the information is gathered. The question is then begged: how can the technology of data mining be used without violating privacy rights?

The increased use of data mining raises many concerns regarding privacy. There is a growing concern among consumers that the right to privacy is being eroded by the increased sophistication of data collection and mining practices by both corporations and government entities. Exacerbating the consumers' concern is the question of ownership of the consumers' personal data. These ethical questions need to be identified and addressed by businesses and the government whenever they create new applications of data mining. This essay focuses on business rights and responsibilities surrounding data mining, rather than governmental uses of data mining. Business is confronted by many ethical questions in the use of data mining. These questions should be considered at all stages of the process, from when the original data is collected to when the insights gained from data mining are put to use.

Companies today are gaining more of the consumer's personal identifi-

able information (PII) without the average consumer even being aware of the collection or transfer of this data. An efficient method of data collection is through the use of the Internet. Technology has made it possible to electronically monitor a person's interests, beliefs, purchasing habits, the kind of people they talk to and type of lifestyle they lead. One method of data collection on the Internet uses cookies to assign customer identification numbers. This identification number is linked automatically with the company database. A cookie is placed in each individual's computer every time he visits a website. Cookies track website destination and the frequencies with which sites are visited. Additionally, at all purchase sites, including the tangible ones at the mall, electronic databases record and track purchases, consumer names, addresses, credit card information and so on. Registration forms are being used through the Internet as well in the search for information. The information provided by the consumer in the registration form is kept, stored, retrieved and used as deemed needful by the data warehouse or purchaser of the information from the data warehouse (Morse & Morse, 2002).

Ethics concerns arise through the use of these data collection methods. Depending on the method of data collection, the individual is not aware that he is subjecting himself to being monitored, he has not been asked for his consent to the search nor does he know where this information will go. Some companies collect information only for the government and some sell the information to other companies. To further intensify the problem, the individual is not given any choice about future uses of the data that he provides.

Several ethical issues are inherent in the collection and mining of personal data: privacy, consent, ownership, and security. Many consumers feel that their privacy is violated when the provision of information is a requirement for purchasing and that information is utilized in ways to which they did not explicitly consent. The companies claim that the information they are gathering is a public good gathered in a public sphere and that therefore privacy is not being violated (Cary et al., 2003). However, the question is whether the information derived from the data is private. Such information about the customer is not actually supplied by the customer (Wahlstrom & Roddick, 2000). In addition, the information may have been required in order for the customer to make purchases and that practice alone raises privacy issues. Further, firms do not make a sufficient effort to inform the user of the current or future uses of his data. The user or customer is not provided the opportunity to provide informed consent. Consumers may not be aware that the company may combine the approved information with public information and prior information gathered to create a profile of the customer.

Another concern is in the type of data being collected. Some types of personal information are seen as being more sensitive than others (Cary et al., 2003; Wahlstrom & Roddick, 2000). Many consumers are unaware that credit history, financial information, employment history, and possibly some medical information are routinely sold. They would be equally surprised to know that they had unknowingly abdicated their ownership rights by allowing cookies to reside in their computers or by completing required registration forms. Privacy rights have been linked to many other rights deemed to be essential to the development of a well-balanced individual and society (Levine, 2003). These rights then must be given the appropriate level of respect. Again, the question remains as to what actually is the appropriate level of respect.

One final ethical issue surrounding data mining is the security of the data collected and mined. If anyone is going to gather and infer sensitive data about individuals, they must make a reasonable effort to protect it from unauthorized access and from unethical use by employees or outside agents. The questions that arise here are: how well are the privacy laws written and how well is the law actually followed?

Ethical Data Mining Suggestions and Strategies

There are two categories of tools that can be used to assure the appropriate use of data mining: technological tools and managerial tools of business ethics. Technological tools include things like anonymity tools and security measures like data encryption that prevent or secure information from being used without proper consent. This paper focuses on the other category of measures that can be taken to make sure that data are mined and used in an ethically and societally appropriate manner, the managerial tools.

Three proposals to preserve privacy rights are reviewed here. The first proposal, Montana's (2001), is more legalistic in nature, guiding firms in the development of policies designed to prevent legal or public image problems associated with privacy violations. The second (Cary et al., 2003) and third (Raiborn & Payne, 1990) approaches are more general in a managerial sense, providing guidelines which, if followed, should not only preserve the legal and public image integrity of the firm, but should also enhance the firm's ability to defend its actions ethically.

All three approaches towards fairly and legally using data mining as a business tool can ultimately be described as having three main thrusts: customer orientation, adherence to sound ethical, and legal principles. These thrusts are relatively straightforward. The customer orientation stresses the importance of keeping the consumer happy by preserving his legal and perceived privacy rights. The adherence to sound ethical and legal principles provides the firm the foundation to defend itself, again, both ethically and

legally, in the event of some question of its use of data mining. Finally, drawing on the proposals to legally and ethically mine data, this paper presents a code of ethics that should be applicable in any situation, including those fraught with questions of privacy rights.

> Privacy was a sensitive issue long before the advent of computers. Concerns have been magnified, however, by the existence and widespread use of large computer databases that make it easy to compile a dossier about an individual from many different data sources. Privacy issues are further exacerbated (by how easy it has become) for new data to be automatically collected and added to databases (Cranor, 1999, p. 29).

Providing a pragmatic approach to the privacy problems generated by the use of data mining techniques, Montana (2001) suggests that the firm follows a strategy consisting of engaging in five actions to avoid legal trouble or public image damage. First, particularly in the customer orientation, the firm considering using data mining should consider the expectations of the persons whose information they are collecting and/or using. Cavalier disregard for the consuming public's expectations is likely to lead to dissatisfaction, a growing refusal to be used in this manner and a backlash of public policy in the form of the development of new and more restrictive laws governing the collection and/or use of data. Montana's second suggestion is one of adherence to sound ethical principles. It is for the firm to develop a privacy policy that clearly and immediately explains to the user whose information is collected what, the information will be used for and what it will not be used for. This suggestion incorporates advice about the collection of consent from the user to use the information: it should not be such a draconian consent or registration form that the reader is likely to give consent to a use he does not expect without even realizing it. The third suggestion put forth by Montana has attributes of adherence to both ethical and legal standards. A firm should not resort to the use of complicated and *legal latin* type language and policies about the collection and use of the data. Confusing the consumer with legalese designed to provide loopholes for the firm is again likely to lead to an unpleasant backlash of consumer anger. Finally, Montana's final two suggestions are grounded in adherence to sound legal principle. Montana's fourth suggestion is that the firm fully understand its responsibility to abide by the law as it relates to the nature of the information collected and / or used. For example, there are stringent laws in place protecting the privacy of medical and financial information; the firm must respect the person's privacy rights as legally protected privacy rights. Finally, it is suggested that firms collecting and/or using data maintain constant vigilance with regard to the law and public

Table 1 Montana's Suggestions for Fair and Legal Use of Data Mining

Principle/ orientation	Suggestions
Customer	Consider consumer expectation: • Respect consumer view of what is proper or improper use of personal data.
Ethics	Develop a privacy policy: • Clearly and immediately state what the firm will do with the information collected • Do not use draconian measures to create legal loopholes
	Follow internal practices honestly and without 'splitting legal hairs:' • Arcane legal machinations will annoy consumers
Legal	If information used is the subject of legal protection, adhere strictly to the privacy law: • Personal medical and financial information is inviolate
	Follow changes in law and public opinion: • Law and attitude change rapidly

opinion. Legally and managerially, compliance with what is legislatively and societally mandated is a business necessity. Montana's four suggestions are shown in Table 1.

Cary et al. (2003, p. 163) have developed a strategy containing ten practices that would aid in the legal and ethical development and use of data mining systems:

> The power and sensitivity of public opinion [...] dictates that corporations act to self-regulate their practices related to the handling and use of personal data. Following existing laws and regulations alone will not be enough to protect a corporation from the risk of damage from a negative public perception of their practices.

The authors here clearly understand that compliance with the letter of the law alone is not sufficient to prevent consumer dissatisfaction at the least and legal action at the most. The first strategic category for the development of an ethical data mining system is that pertaining to the customer. The first suggestion in this category is that the firm consider the expectations of the customer when beginning a new project that requires data collection or use. It is immaterial whether the firm is actually complying with the law if the consumer feels that his privacy rights have been violated. The development of a customer-oriented privacy policy is a closely related suggestion: consumers believe that to divulge private information is their choice and, as such, their wishes with regard to privacy should be respected. The firm should alert the consumer as to the uses to which the information will be put so that the consumer can then make a better informed choice about disclosing the information. Finally, the customer driven principle requires

that the firm give more control to the consumer over what happens with the information collected. To achieve this, full disclosure and honesty is vital when gathering the information itself and when obtaining the consumer's consent to use the information subsequently.

Cary et al. (2003) also present suggestions that fall into the strategic category or principle of ethics. There are several of these suggestions. First, the spirit of the privacy policy must be followed, not just the letter of the policy or the letter of the law. '[R]egardless of the depth or breadth of a legal(istic) code, every immoral or illegal behavior cannot be proscribed. Thus, the spirit of the law is always broader than the letter of the law' (Raiborn & Payne, 1990, p. 17). Second, the quality of the source data should be checked: data mining of wrong or inaccurate data can cause serious harm to reputations that could lead to other types of harm. As a custodian of the information, the firm arguably has a fiduciary duty not to disseminate incorrect or false information. Additionally, a corporate code of conduct should be developed to establish appropriate standards for practices and treatment of consumers. For example, such a code can prevent potential harm from accruing in the first place from the dissemination of inaccurate information. Finally, the firm should perform an ethical audit of the uses to which its data is put. This audit can help identify any ethical or legal concerns that may arise when data is used in new or questionable ways. It can protect the firm from public outrage or legal action by providing proactive guidance to prevent problems from happening.

There are three legal principles projected by Cary et al. (2003) as shown in Table 2. First, the firm should research and understand all laws that may pertain to its activities, especially the law concerning information that may be considered sensitive, like financial or medical information. Additionally, legal procedural matters should be on the firm's *radar screen:* there may be federal, state, local, and even international law that impacts the legality of the use of certain information in data mining operations. A second suggestion with regard to the legal principle of data mining policy is the requirement that the firm stay current on new legal and public policy developments, as well as new attitudes towards the collection and use of data. Finally, access to the data warehouse is of paramount interest here. Although after the terrorist attacks of 2001, the Fourth Amendment Search and Seizure provisions have changed to reflect a greater need of the government to know of criminal activity, there are still well-established and recognized legal protections for privacy. Thus, the security of the data storage should be under constant surveillance.

The third approach utilized here is that designed by Raiborn and Payne (1990); they designed a methodology for creating a corporate code of ethics that was comprehensive, clear, and enforceable. Using the standards of be-

Table 2 Suggestions by Cary et al. for Fair and Legal Use of Data Mining

Principle/ orientation	Suggestions
Customer	Consider consumer expectation: • The company should be able to predict consumer perception about potential privacy violations
	Develop a customer-oriented privacy policy: • Provide the consumer with a privacy policy meant to adequately inform the consumer about the current and future uses of data
	Give consumers more control over their information • Consumers with more control over their data will perceive a greater control over and respect for their privacy
Ethics	Follow the spirit of the privacy policy: • Abiding by the spirit of the policy engenders a relationship of honesty and trust important to the consumer
	Evaluate the quality of the source data: • Use of accurate information is vital to the correct dissemination of data • Intentional harm cannot accrue as a result of the dissemination of correct information
	Develop a corporate code of conduct: • Acceptable standards for use of information and treatment of consumers are accessible for use
	Perform an ethics audit to identify new uses of data mining: • Review potential risks of new uses of data mining with regard to legal and ethical ideals
Legal	Research and understand laws/legal procedures surrounding data mining: • Privacy laws must be followed • Federal, state, local and international legal procedure should be honored

havior and the values they suggested, it is possible to create a workable code of ethics. It should also work to help establish a good data mining policy. The four values presented in their model are integrity, justice, competence, and utility. The value of integrity implies that one will act with sincerity, good faith, and honesty. The value of justice requires that fairness and equity are incorporated into the decision-making process. Competence imposes the responsibility to be capable, knowledgeable, and competent in the execution of one's actions. Finally, the value of utility requires that one have a complete understanding of the elements involved in decision-making and that social utility is a consideration.

The four standards of behavior are the theoretical, the practical, the currently attainable, and the basic standard. The theoretical standard reflects the highest standard of ethical behavior: this is the spirit of morality. The second level of ethical behavior is the practical level; it is the acknowledgement that the highest level of ethical attainment may not be possible in the world we live in. It reflects the use of extreme diligence in ethical decision-

Table 3 Raiborn and Payne's (1990) Codal Provisions Adapted to the Categories of Consumer, Ethical and Legal Strategies for Ethical Data Mining

Principle/ orientation	Suggestions
Customer	• The data collected, stored and shared should be accurate
Ethics	Integrity at the theoretical or practical level: • Customers should be fully informed that the data mined on them is being mined • Customers should knowingly and willingly consent to such data mining
	Utility at the theoretical or practical level: • The data mined/utilized should be utilized for reasonable purposes • The data mined/utilized should be utilized for the purposes for which it was intended to be used
Legal	Justice at the theoretical or practical level: • Fairness and equity are to be incorporated into adherence of the law

making: the decision maker should be as ethical as possible in the circumstances. The level of currently attainable ethical behavior recognizes the society, through the idea of the public policy, and has certain minimum requirements for morality; here, the decision-maker does not strive to achieve heights of moral behavior, he merely seeks to satisfy the basic societal moral standard of behavior. Finally, the basic standard of behavior is that of the basic legal standard of behavior; in this instance, the spirit of the law is not a part of the potential solution. Table 3 depicts the manner in which the Raiborn and Payne model can be adapted to the issues of data mining.

Impacts on Knowledge and Learning

Organizations need to be faithful stewards of data by acknowledging the benefits and issues of creating and maintaining knowledge repositories such as data mining. The data needs to be collected in an honest and ethical manner. The data must then be maintained in such a way that there is data integrity and that the data is safe from data leakages. However, just having the data collected in an honest and ethical manner and protected from prying eyes is not enough.

Organizations need to have procedures in place where organizational learning can take place and data and information can be synthesized into knowledge. This synthesis can take many forms, such as learning who our customers are, why our customers do business with us and why they stop doing business with us. It can also examine and learn from the behaviors of customers and others in the data repositories. Table 4 provides a summary of the three ethical frameworks discussed so far. The three principles or orientations examine the Customer, Ethics, and Legal implications for data

Table 4 A Composite Strategy for the Legal and Ethical Use of Data Mining

Principle/ orientation	Montana's suggestions	Suggestions by Cary et al.'s	Raiborn and Payne's suggestions
Customer	Consider consumer expectation	Consider consumer expectation; develop a customer-oriented privacy policy; give consumers more control over their information	Competence at the theoretical or practical level
Ethics	Develop a privacy policy; follow internal practices honestly	Follow the spirit of the privacy policy; evaluate the quality of the source data; develop a corporate code of conduct; perform an ethics audit to identify new uses of data mining	Integrity at the theoretical or practical level; utility at the theoretical or practical level
Legal	Adhere strictly to the privacy law; follow changes in law and public opinion	Research and understand laws/legal procedures surrounding data mining	Justice at the theoretical or practical level

mining. Are there things that the organization can do, or behaviors that the organization may engage in that could persuade customers to give more meaningful data? The opposite is also true. There may be behaviors that the firm may engage in that cause customers not to give meaningful data. The key for the firm is to learn what these activities are and position data gathering activities in such a way that meaningful data are collected. Once this knowledge is acquired it must be shared among the organization for and permeate the organization culture on what are and are not best practices for data mining.

Conclusion

It is not enough just to develop data mining strategies that include the informational benefits and the techniques used. The strategy should also assure that both legal compliance and ethical behavior in the collection and use of data includes consideration of three main principles: a customer orientation, adherence to the spirit of the law, and adherence to the letter of the law. Businesses and consumers can have both interests served and served well, with integrity through the appropriate use of data mining techniques. The organization must also examine who the stakeholders are and how they are affected by the data collection and usage within the system. The strategies reviewed in this paper, the Montana model, the Cary et al. model, and the Raiborn and Payne model all suggest that, in the proper legal, ethical,

and managerial structures, data mining and the uses to which information collected thereby can be used in a way that is legal, respectful of people's privacy and advantageous to the business firm using the information.

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Prevention of White-Collar Crime by Knowledge and Learning in Business Organizations: An Empirical Study of Chief Financial Officer Management

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Knowledge and learning are important in combating financial crime generally and white-collar crime in particular. The purpose of this research is to generate insights into prevention approaches in practice that may reflect on a contingent approach. The five hundred largest business companies in terms of annual turnover were identified in Norway for our empirical study of white-collar crime. A paper letter was mailed to the chief financial officer (CFO) asking him or her to fill in the questionnaire to be found on a web site using a password found in the letter. The open-ended question in the questionnaire to CFOs about prevention of white-collar crime was formulated as follows: *How can white-collar crime best be prevented in your company?* Survey results indicate an even distribution of respondents emphasizing control and respondents emphasizing influence. This empirical research steps back from many best practice articles and provides insights into preferences of chief financial officers on how to prevent white-collar crime in the company.

Keywords: white-collar crime, CFO, auditing, internal control system, knowledge, learning

Introduction

An important consequence of the dark side of leadership is the potential of white-collar crime by executives (Fleet and Fleet, 2006; Furnham, 2007; Ouimet, 2010). White-collar crime is not as visible as conventional crime and detection is difficult. For instance, in a homicide case, there is generally a body and forensic evidence. In the case of financial crime, Hansen (2009) argues that accounting and computer forensics are currently the investigator's best tools in detection and implemented in most white-collar investigations in recent years. Applications of science and technology to white-collar crime cases is increasing, and advances in technology have led to a greater dependence on expert testimony in white-collar crime cases, keeping in mind that expert opinion cannot be given with absolute certainty.

Perhaps, Hansen (2009) argues, due to the financial resources to defend

their cases available to elite individuals and corporations who are brought to justice, plus aversion to negative publicity, plea bargaining prior to charges is more intense as compared to that in conventional crime cases. Formal charging is more likely to be viewed as a failure by prosecutors, because of the larger number of resources that prosecutors have to be diverted to prosecute white-collar crime cases. Also due to the greater stigma attached to jail or prison time for elites, they may be reluctant to negotiate a plea bargain if incarceration is included in the deal. On the other hand, it is not unusual for convicted defendants to suddenly decide to cooperate in investigations in order to receive leniency at sentencing.

Regulation played a major role in the waves of white-collar crime that have struck many developed economies. During the 1980s, deregulation in many countries led to creative financial schemes, some legitimate, but others clearly criminal. Insider trading was rarely investigated or prosecuted by regulatory agencies, even though it was and is illegal. Deregulation is viewed as a culprit in allowing bad accounting practices, including the practice of hiding losses or debts, as in the case of Enron, as well as overstating profits and assets. By regulation in response to major corporate crimes, it is like closing the barn door after the sheep have all escaped. It is a difficult task to rein in malfeasance, particularly if the monetary reward continues to outweigh sanctions (Hansen, 2009).

Self-regulation as a strategy for private industries is dependent on the actions each business is willing and able to take to prevent white-collar crime. Therefore, this paper addresses the following research question: *How will the chief financial officer (CFO) prevent white-collar crime in his or her business organization?* Results from a survey of CFOs in Norway are applied to answer this research question.

Managerial auditing is important in combating financial crime generally and white-collar crime in particular. The purpose of this research is to generate insights into prevention approaches in practice that may reflect on a contingent approach to managerial auditing.

Self-Regulation

According to Hansen (2009), self-regulation does not appear to be a solution either. Much of evaluation, either by external groups or internally, is ceremonial. For example, managers at a technology company may have only a rudimentary knowledge of chemistry, biology or computers, but employ technological experts to do the core work of the company. In other examples, there is a conflict of interest, as in the case of Arthur Andersen who served as both auditor and paid consultant to Enron. In addition, certifiable standards have not proven to be successful. One reason is the frequent disconnect between certification and consistent compliance.

Self-regulation in terms of private policing of economic crime does not appear to be a solution to Williams (2005) either. He identified five barriers to this kind of governability:

1. *Secrecy, low visibility and discretionary justice* lead to informal negotiations, easy termination, loose coupling between investigations and formal legal frameworks, and potential privileges for some individuals but not others.
2. *Multiple legal standards and forum shopping* lead to legal and procedural standards that tend to vary on a case-by-case basis depending on the specific legal avenue or forum that is selected.
3. *Multiple legal actors* with distinct credentials and qualifications apply a variety of different professional and quasi-professional codes, standards and obligations.
4. *Multiple stakeholders and interest groups* tend to have conflicts of interest. However, to speak of accountability and governance, one is inevitably required to adopt a particular point of view.
5. *Public-private dichotomy* leads to a liberal legal tradition, where the distinction between public and private remains an enduring feature of legal thought. It hinges on two related principles that bear directly on the activities of internal investigators. The first is that corporations enjoy the same legal rights as individuals and are thus defined as private legal actors. The second is that there are fundamental limits to the authority and jurisdiction of the state that preclude unnecessary interventions and incursions into the private realm.

Similar to both Hansen (2009) and Williams (2005), Schneider (2006) studied privatizing economic crime enforcement by exploring the role of private sector investigative agencies. A financial investigative agency refers to an accounting-based, private sector organization that provides investigative, risk management, consulting and litigation support services addressing economic crime.

A special kind of self-regulation is self-protection, where protection is potentially achieved by educating actors. An example is investor protection by weaknesses of initial public offerings (IPO). Solaiman (2009) argues that it is generally understood that investment knowledge empowers investors to protect themselves from the culpability of issuers, their professionals and intermediaries who are called gatekeepers. Investors' ability to make prudent investment judgments for allocation of resources is regarded as an important element in every market economy.

In addition to self-protection, Solaiman (2009) argues there is a need for regulators in protecting investors. Investor protection by securities reg-

ulators can be divided into two: indirect and direct protection. The former refers to empowering the investors to protect themselves, whilst the latter concerns protection by regulator through making, administering and enforcing.

Private policing of financial crime will have to build on organizational justice as perceived by organizational members. Scott, Colquitt, and Paddock (2009) find that a quarter century of research on organizational justice has revealed a great deal about how employees react to justice rule adherence and violation on the part of their managers. Employees evaluate justice along a number of dimensions: fairness of decision outcomes, fairness of decision-making processes, adequacy of explanations, and perceived sensitivity of interpersonal communication.

These dimensions are part of what Rodell and Colquitt (2009) call anticipatory justice: distributive justice, procedural justice, informational justice, and interpersonal justice. The effects of anticipatory justice have been explored in the context of organizational change. Change is a natural component of employees' working lives, and employees may experience a variety of changes during their organizational tenure, ranging from large-scale changes such as organizational relocations or mergers, to new policies such as fringe benefit bans.

As part of anticipatory justice, Zapata-Phelan et al. (2009) studied procedural justice and intrinsic motivation among employees. What stands out most from the results of their study is the significant relationship between procedural justice and intrinsic motivation. The relationship was supported using a self-report measure as well as reference motivation to both specific tasks and multifaceted tasks in terms of overall job duties. Such relationships will tend to influence the role and performance of financial investigative agencies.

Schneider (2006) recommends that public policies and programs be developed that nurture an increased and more formal role for financial investigative agencies within the context of a partnership with government agencies. In Norway, a public debate in the media indicated that the role of financial investigative agencies should be reduced and more resources should be made available to the police (Føler meg rettsløs, 2008).

Research Design

The five hundred largest business companies in terms of annual turnover were identified in Norway for our empirical study of white-collar crime. A paper letter was mailed to the chief financial officer (CFO) asking him or her to fill in the questionnaire to be found on a web site using a password found in the letter. 50 respondents first filled in the questionnaire, representing a response rate of ten percent. After a reminder was mailed to the sample, 61

more respondents filled in the questionnaire, representing a response rate of 22%. In addition, there were 28 incomplete responses, thereby creating a total of 28% response rate.

The survey research was carried out from January to March 2010. Average number of employees in the responding companies was 1,671 persons. The largest responding company had 30,000 employees. All letters were mailed to the CFO, and most of the respondents were CFOs, while some were CEOs and financial controllers.

The average age of respondents was 46 years, and they had on average 4.8 years of college and university education after high school. Most of the respondents were men, as there were only 19 women among the 111 complete responses.

The open-ended question in the questionnaire to the CFO about prevention of white-collar crime was formulated as: *How can white-collar crime best be prevented in your company?*

A total of 91 respondents provided answers to this open-ended question. Responses were classified by applying content analysis (Riffe and Freitag, 1997). In the first round of text reading, potential topics were identified.

Two main topics were identified. The first group of responses is concerned with the ability to control by means of efficient and effective control routines, transparent guidelines, reactions and consequences for offences and misconduct. This main topic is labeled the reactive strategy in prevention of white-collar crime.

The other group of responses is concerned with the ability to influence by means of values and ethics, recruitment and hiring processes, attitudes of integrity and accountability, and visible and determined leadership. This other main topic is labeled the proactive strategy in prevention of white-crime.

Based on the discussion of self-regulation in prevention of white-collar crime, we conceptualize self-regulation as consisting of both the reactive as well as the proactive strategy. Thus, self-regulation consists of control and influence.

Research Results

As mentioned, the open-ended question in the questionnaire to the CFO about prevention of white-collar crime was formulated as: *How can white-collar crime best be prevented in your company?* Examples of control statements provided by respondents include:

- Good internal control.
- Banks have a relatively strong regulation regime, external + internal auditor, finance authorities, compliance and risk controllers, control

committee, auditing group and money laundering regulation.
- Good control routines and internal procedures.
- Access control and reliable approval procedures.
- Control routines with division of responsibilities.
- Efficient systems and routines, regular internal controls.
- Implement effective control systems.

Examples of influence statements provided by respondents include:

- Continuous work on culture – values – ethics, show zero tolerance in relation to misconduct.
- Openness with contacts and financial information.
- Attitudes of honesty and accountability as a culture in the company at all levels.
- An explicit and visible leadership that monitors the organization.
- Good hiring procedures.
- Focus on ethics, where management is a good example in all situations.
- Build common culture, behavior, set of values and company identity.

Among the initial responses of 47 completed questionnaires for this question, the following distribution was identified:

- *Control.* 25 out of 47 respondents would focus on controlling and auditing, thus 53% for control.
- *Influence.* 22 out of 47 respondents would focus on influencing and behavior, thus 47% for influence.

This is an interesting result as there is almost an even distribution between the two main themes, where half of the respondents emphasize control, while the other half emphasizes influence.

After a reminder was mailed to non-respondents, a total of 47 completed questionnaires were received, which is exactly the same number as in the first round. The distribution among chief financial officers in terms of responses to the open-ended question was as follows:

- *Control.* 20 out of 47 respondents would focus on controlling and auditing, thus 43% for control.
- *Influence.* 27 out of 47 respondents would focus on influencing and behavior, thus 57% for influence.

We find an even distribution among control and influence, but the majority in this second round emphasizes influence to prevent white-collar crime. In

total, the following distribution for all 94 respondents that filled in this open-ended question was as follows:

- *Control.* 45 out of 94 respondents would focus on controlling and auditing, thus 48% for control.
- *Influence.* 49 out of 94 respondents would focus on influencing and behavior, thus 52% for influence.

In terms of self-regulation, respondents who emphasize influence are slightly more than respondents who emphasize control.

Discussion

White-collar crime contains several clear components (Pickett and Pickett, 2002):

- *It is deceitful.* People involved in white-collar crime tend to cheat, lie, conceal, and manipulate the truth.
- *It is intentional.* Fraud does not result from simple error or neglect but involves purposeful attempts to illegally gain an advantage. As such, it induces a course of action that is predetermined in advance by the perpetrator.
- *It breaches trust.* Business is based primarily on trust. Individual relationships and commitments are geared toward the respective responsibilities of all parties involved. Mutual trust is the glue that binds these relationships together, and it is this trust that is breached when someone tries to defraud another person or business.
- *It involves losses.* Financial crime is based on attempting to secure an illegal gain or advantage and for this to happen there must be a victim. There must also be a degree of loss or disadvantage. These losses may be written off or insured against or simply accepted. White-collar crime nonetheless constitutes a drain on national resources.
- *It may be concealed.* One feature of financial crime is that it may remain hidden indefinitely. Reality and appearance may not necessarily coincide. Therefore, every business transaction, contract, payment, or agreement may be altered or suppressed to give the appearance of regularity. Spreadsheets, statements, and sets of accounts cannot always be accepted at face value; this is how some frauds continue undetected for years.
- *There may be an appearance of outward respectability.* Fraud may be perpetrated by persons who appear to be respectable and professional members of society, and may even be employed by the victim.

Self-regulation in the form of corporate governance cannot alone prevent

white-collar crime. Governance in the form of clear policies and procedures, formalized cross-company communication, along with performance-based salary for board members and employees reduces incidences of white-collar crime within corporations. An ethical issue is whether there should be a material reward for not committing a crime. Such a reward policy might be perceived as paying drug dealers for not selling drugs, if the same strategy were to be applied to ordinary criminals. Also it insinuates that board members and corporate executives are not well compensated already, which is not the case in many industries that are plagued with white-collar crime, including the financial sector (Hansen, 2009).

Policing financial crime – according to Pickett and Pickett (2002) – is concerned with whistle blowing and detection, roles of shareholders and main board and chief executive officer and senior executives, investigations, forensics. Policing financial crime – according to Levi (2007) – is concerned with the organization of policing deception, the contexts of police undercover work, covert investigations of white-collar crime, prosecution and relationship to policing fraud. Covert activity is restricted mainly to the informal obtaining of financial information or the official obtaining of information about suspected bank accounts without the knowledge of the account-holder.

Another limitation of self-regulation is 'know-nothing' CEOs. Hughes, Louwers, and Reynolds (2008: 115) argue that much of the national media in the US has paid attention to corporate scandals where 'know-nothing' CEOs and complacent/conflicted auditors missed the accounting frauds:

In each case, 'revelations' abound as to lax corporate control environments and defective or non-existent audit procedures that prevented identification of potential abuses.

Furthermore, internal auditors' performance may largely depend on their moral decisions when faced with ethical dilemmas. Woodbine and Liu (2010) found that the moral choice of internal auditors can be explained by the leadership style, personal needs strengths and demographic variables.

Conclusion

49 out of 94 responding CFOs in Norway would prevent white-collar crime by influencing the organization in terms of culture, values, behavior, leadership and ethics. 45 out of 94 responding CFOs emphasized control in terms of internal and external control, guidelines and procedures, audits and accounting. In the self-regulation circle, slightly more respondents emphasized influence rather than control. Future research might explore the interactions between control and influence. Implications for a contingent approach in managerial auditing need to be explored in future research.

Furthermore, future research might be expanded to make sure that

the entire variety of white-collar crime is considered by respondents. This could be done by structuring the questionnaire into additional sub-questions linked to the original open-ended question.

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Who Is Running Online Education Programs?

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Successful online education programs are paramount at higher education institutions. In a recent study to examine the state of online educational commitment in higher education there was a diverse variety of academic and administrative occupations. The wide range of occupations provided a view into institution-wide creative endeavors proposed to broaden the teaching and learning objectives of higher education. Principles, themes, implications and important aspects of online teaching and learning programs and their administrators from state and private four-year institutions with existing programs were explored. A major theme that emerged from the occupations was a student-centered approach to teaching and learning.

Keywords: administrators, distance education, higher education, knowledge, learning, management, occupations, online education, teaching

Introduction

In an original study which examined distance education programs and their commitment to online teaching and learning in higher education, respondents to a survey identified their employment titles from a diverse and surprising variety of occupations.

The wide range of occupations exposed a vacillating and technology-driven domain of online teaching and learning that trumps other teaching and learning genres. Institution-wide creative endeavors proposed to broaden the teaching and learning objectives of online education programs in higher education seemed ambiguously extant in the occupational titles. This naming convention comprised deeper implications than mere occupations and may, perhaps, have extolled the virtues of online teaching and learning, as the result of which much foresight and prudence of academicians occurred toward online education. A major theme that emerged was the student-centered approach to teaching and learning.

The Purpose of the Study

The purpose of the study was to investigate occupations of those administering online education programs in higher education. Themes, implications and important aspects of online teaching and learning programs from state and private four-year institutions with existing programs were explored.

Literature Review

Online education administrators' occupations were so varied in nature that the literature review builds a foundation from which this variation of roles can be better understood. Marcus (2004) stated that researchers have not been able to define all the various aspects of an online education leader. Online education administrators frequently come from diverse faculty. Care and Scanlan (2001) posited that the experiences of traditional leaders in distance education are not yet understood. Managers and coordinators of online education programs are different from traditional leaders, administrators, faculty and staff (Dede, 1993). More recently, online teaching and learning has evolved into an enormous industry, replete with challenges not fully understood and practices not completely experienced. Distance education is no longer an isolated program for continuing education but an entity to be absorbed into every field of study in education and almost every enterprise of industry.

Early research, in online education, indicated that the lack of institutional commitment was one of the biggest complaints (Shea, Motiwalla, & Lewis, 2001). The Institute for Higher Education Policy performed an analysis of online teaching and learning research literature and found it had not kept pace with online education use (Merisotis & Phipps, 2000); additionally, leadership had not emerged as an effective aspect. Lee (2001) posited that higher education institutions have rarely been scrutinized for specific leadership in the areas of online education. Beaudoin (2002) believed that leadership in online education was obscured. McLendon and Cronk (1999) argued that not much had been written about academic management and administration of online education programs.

Oftentimes, the online teaching and learning program director position is a temporary assignment; after a few years of service, another faculty member may receive the assignment. Online education administrators may face steep learning curves and feel overwhelmed with administrative duties as they integrate themselves into the field of online teaching and learning (Wright & Howell, 2004), now deeply immersed with technology.

More recent research indicates that commitment to online teaching and learning research has improved (Ding, 2005). Furthermore, and more recently, both quantitative analyses and qualitative analyses, in particular regard to interaction, has ensued (Grandzol & Grandzol, 2010). Managers of online education were cautious in the beginning of the 'new' online movement. Researchers sifted through the online teaching and learning studies searching for validity and reliability. Regardless of the robustness of research in online teaching and learning, or the lack thereof, some skilled faculties rate their experiences with online teaching and learning as posi-

tive (Wiesenmayer, Kupczynski & Ice, 2008; Ward Ulmer, Watson & Derby, 2007).

Much research on perceptions of online students has revealed positive student experiences. The US Department of Education released a report, based on data collected between 1996 through 2008, which concludes that online students perform better than face-to-face. Online students ranked in the 59th percentile in tested performance, compared with the average classroom student scoring in the 50th percentile (Means, Toyama, Murphy, Bakia, & Jones, 2010).

The responsibility of course administrators is the most important factor in the short-term success of online education (Brooks, 2003). Current research has yet to define what an online teaching and learning leader is made of; however, Marcus (2004) indicates that online education leader characteristics and their requirements and actions define the effective online education leader.

Methodology

The instrument was designed using a modification of Dillman and Bowker's (2001) 14 principles of design of Web surveys. Questions were aligned on the survey based upon Babbie's (1998) recommendation for the optimal survey design. A 7-point Likert-type scale was used for the response key of the 27-question survey. The reliability of the instruction is based upon Nunnally's (1978) notion that a 7-point scale or higher is more likely to reach the upper limits of reliability. Ensuring a high degree of construct validity, the instrument was reviewed for content, clarity and brevity by a panel of seven PhD faculty members from two universities and who served in various university departments: Continuing Education, Agricultural Education, Workforce Education and Development, and Human Resources. Since this instrument was not first a paper-based instrument but was designed specifically for the Web, its reliability and validity was strengthened.

A pilot of the instrument was sent to 32 randomly selected institutions from the 2005 Petersen's Guide to Distance Learning Programs. All respondents declared themselves as responsible for online teaching and learning programs.

A census was used for obtaining the data for this study since the entire population was identified and available for participation (Robinson, 2005). The researcher obtained respondents from e-mail requests. Along with the linked survey, the name, title, organization, email, and comments were requested. The reporting phase of the online survey involved extracting the data from two hypertext pre-processor databases designed by an instructional technologist. Data were collected in 2006, and research took place from a non-participating university in 2007.

Table 1 Hierarchy of Administrator Occupations, Their Frequencies, Percentages, and Overall Percentages

Administrator Occupation ($n = 74$)	Frequency	Percent	Overall
Vice Provost	1	1.35	0.82
Vice President	1	1.35	0.82
Associate VP	1	1.35	0.82
Director	44	59.46	36.07
Associate Director	5	6.76	4.10
Assistant Director	7	9.46	5.74
Registrar	1	1.35	0.82
Manager	6	8.11	4.92
Coordinator	4	5.41	3.28
Instructional Designer	1	1.35	0.82
Academic Advisor	1	1.35	0.82
Administrative Assistant	1	1.35	0.82
Graduate student/assistant	1	1.35	0.82
Total	74	100	60.66

Survey Participants

The criterion for selection of the participants was specific to the institution and not the individuals. Individuals responsible for online teaching and learning programs represented institutions of different sizes and types and came from different departments and colleges of the institutions surveyed. Noteworthy in this study, and the focus of this paper, were the variety of titles that individuals responsible for online teaching and learning programs identified themselves as holding in their prospective online teaching and learning occupations.

Out of 4,800 online learning programs listed in Peterson's Guide to Distance Learning Programs (Oram, 2005), state and private four-year institutions with existing online teaching and learning programs were surveyed. In order to better manage the study, only those universities and colleges in the Carnegie basic classification offering undergraduate and graduate degrees served as the study population ($n = 374$). The Carnegie classification 2005 update is the sixth revision since the first edition in 1970. Carnegie classifications were obtained from a Web site sponsored by the 2005–2006 Carnegie Foundation for the Advancement of Teaching (2005). Three basic classifications of institutions were used in this study: (a) Classification I: Research Universities; (b) Classification II: Master's Colleges and Universities; and (c) Classification III: Baccalaureate Colleges. Within three basic Carnegie classifications, 374 institutions were identified. The final usable sample obtained was $N = 127$ with an overall response rate of 34 percent. Not all respondents reported their occupations.

Table 2 Hierarchy of Educator Occupations, Their Frequencies, Percentages, and Overall Percentages

Educator Occupation ($n = 48$)	Frequency	Percent	Overall
Dean	7	14.58	5.74
Associate Dean	3	6.25	2.46
Assistant Dean	3	6.25	2.46
Chair	3	6.25	2.46
Professor	15	31.25	12.30
Associate Professor	8	16.67	6.56
Assistant Professor	3	6.25	2.46
Adjunct Professor	1	2.08	0.82
Adjunct Faculty	1	2.08	0.82
Communications Specialist	1	2.08	0.82
Instructional Technologist	3	6.25	2.46
Total	48	100	39.34

Findings

Occupations were separated into two categories: Administrator Occupation and Educator Occupation ($n = 122$). Presented in Table 1 are the most frequently listed administrator occupations ($n = 74$), percentages, and overall percentages. The most frequent occupation from the list of titles was identified as 'Director' ($n = 44$) following or preceding various descriptive labels. This finding was not a surprise as educational programs are largely run by directors.

Table 2 presents the most frequently listed educator occupations ($n = 48$), percentages, and overall percentages. The most frequent educator occupation was 'Professor' ($n = 15$). One title was considered miscellaneous: Esq.

Table 3 presents nine occupational descriptive terms preceding or following and/or associated with occupations listed in Tables 1 and 2. The occupation descriptive terms when ranked evolved as representing possible themes, premises or principles in online teaching and learning. The term of 'learning' appeared most often ($n = 27$, 21%), and the term of 'distance' appeared next most often ($n = 25$, 20%).

Results and Discussion

A major theme of today's online teaching and learning is the social presence theory and a focus on students that we have never seen before. Kember (2009) describes a university-wide endeavor to promote student-centered learning in which he warns that programs that rely on 'didactic forms of teaching run the danger of reinforcing the preference for passive forms of learning' (p. 12). The descriptive term 'learning' appeared most often

Table 3 Ranked occupational descriptive terms, frequencies, and percentages

Term	Frequency	Percent
Learning	27	25.71
Distance	25	23.81
Online	16	15.24
Technology	12	11.43
Instructional	10	9.52
Services	5	4.76
Design	4	3.81
Continuing	4	3.81
Teaching	2	1.90
Total	105	100

(n = 27) in the list of titles, while the term 'teaching' occurred only twice. Based on these occurrences, research literature and online teaching experience, the major premise that emerged was a theme that encompasses the student-centered approach to learning. Assessment is learner-centered, thus evaluation of student learning is promising and achievable through online education.

The term 'learning,' deemed as knowledge creation, comprises an assertion that involves the philosophy of constructivism. Duffy and Jonassen (1992) touted that constructivism is the new theory that is being used for representing the knowledge construction process in online education. Constructivism offers a promising new approach to teaching which offers students the opportunity to build knowledge on what they already know. The research indicates using constructivist methods, in online teaching and learning, furnishes a more experimental learning environment in which the student can develop critical-thinking skills and improve the transfer and retention of knowledge (Ward, 2001). Interactive constructivism provides a basis that 'our views regarding learners and learning communities are always ambiguous and ambivalent constructions that need to be kept open for further deconstructions and reconstructions' (Neubert, 2010, p. 502).

Kang and Gyorke (2008) compared Moore's transactional distance learning theory with cultural-historical learning theory to posit that transactional distance learning 'isolates learners from their multi-society contexts' (p. 212). Meeting students on their own terms, and scaffolding what students already know with what the instructor can build upon combined with quality interactivity provides what students need. Moller, Foshay and Huett (2008) stated that 'our educational system is producing learners who prefer to interact with the content and the instructor, but not each other' (p. 72). Students with the proclivity to become online learners want to be the willing receptacles of information but long for personal interactions, thus the

emergence of the social presence theory. They want relevant learning that is applicable in the workplace, and facilitation and support of their own discoveries to then remix and share (Berry, 2010).

A trifecta theme that emerged from the occupations was the terms 'distance' (20%), 'online' (13%), and 'technology' (9%), with a total of 53 occurrences (42%). The iconic beginning event of technology changed the way in which online teaching and learning administrators envisioned education from a distance using the Web, the Internet and Course Management Systems (CMS). Online education has introduced many students to technology in such a way that they might not have had the opportunity to experience before. For example, MS Word's Track Changes feature provides opportunities for students to collaborate and instructors to grade papers. Fragmented research began to appear in abundance in the area of online teaching and learning and the practices surrounding the impact that technology has had on education. Researchers passed harsh judgment on the literature in online education because of the weakness in research rigor (Gunawardena & McIsaac 2004). In 2003, distance learning educators were negligent in providing sufficient attentiveness as to how research methodology and the research paradigm should be used in online teaching and learning according to Simonson, Smaldino, Albright, and Zvacek (2006).

Just one year prior, Kelly (2002) observed that rules were changing in higher education regarding online teaching and learning, corporate degrees and dot.coms in education and training. In a Delphi study of 103 online teaching and learning experts, roles and competencies of online education professionals within the United States and Canada were identified: (1) Interpersonal Communication, (2) Planning Skills, (3) Collaboration/Teamwork Skills, (4) English Proficiency, (5) Writing Skills, (6) Organizational Skills, (7) Feedback Skills, (8) Knowledge of the Online Teaching and Learning Field, (9) Basic Technology Knowledge, and (10) Technology Access Knowledge (Thach & Murphy, 1995). Kelly's (2002) first role and competency, Interpersonal Communication, suggests a significant connection to the theme of social presence theory, which is so important to online teaching and learning today. Online education administrators must consider adding to professional development programs techniques of how to better interact with online students to incorporate that important teacher/student connection. Hall (2010) adds inter-subjectivity to the interactive theory as the next tier in increasing the quality of course-based, online learning. Hall defines the idea of interaction as a process and a key point in distinguishing interaction from inter-subjectivity. Inter-subjectivity is the product of knowledge construction resulting from the coordination of multiple perspectives among learners. Inter-subjectivity can occur when students are engaged in quality-designed discussion boards, wikis, blogs, clickers, journals, Twitter and Facebook ac-

tivities or live lectures using Skype, uStream, DimDim or Adobe Connect Pro, for example.

The less frequent listed descriptive terms were 'services' ($n = 5$), 'continuing' ($n = 4$), and 'teaching' ($n = 2$). Peripheral services for online education can include library or bookstore services, and non-degree coursing through continuing education. Twenty-first century teaching is undoubtedly moving away from the teaching-centered education approach. This study found the term 'teaching' appearing the least number of times.

Instructional Design

While the term 'instructional' appears ten times in the list of occupations, the title 'instructional design(er)' appears only four times. Issues about how to design distance learning systems remain open (Salas & Cannon-Bowers, 2001). Concerns in online teaching and learning lie in whether foundational online instructional design theory is being piloted and applied appropriately to course material before it is utilized (Cook-Wallace, 2007). Some argue that instructional design and the technology of online courses are not as important to study as online pedagogy. However, to evade the foundation of instructional design with respect to online teaching and learning would be tantamount to abolishing online education research rigor. Moller et al, (2008) indicate that most online training programs lack effectiveness because of the lack of basic principles of instructional design. The likely reason is that the administrators of e-learning, 'have never encountered a product built according to sound instructional design principles' (p. 71). Gayton (2009) reported that all administrators ($n = 16$) in his study of eight randomly selected institutions had never delivered an online teaching and learning course. Regardless of the container of online education such as Blackboard (most popular), Moodle, Joomla, and eCollege among other CMS's, instructional design helps deliver online teaching and learning programs when instructional designers are major contributors.

Role of Online Education Administrator

Online education administrators frequently come from diverse faculty ranks with no more than a scant amount of technology skills, yet they are responsible for the delivery of online teaching and learning using the latest technology. Online teaching and learning imparts new roles for administrators, professors, and staff to assume. Traditional faculty members who choose online teaching will require a shift in their role from teaching (Appana, 2008) to mentor, instructional designer, manager, and technologist. How they use course materials, whether royalties can be kept and by whom, and the potential of intellectual property and patenting of research, are only a few of

the additional challenges. Rekkedal (1994) recommends that professionals and managers in online education generally should have 'some training in research methods, statistics and basic problems concerned with generalizations, validity and reliability of results from empirical research' (para. 64). Therefore, a framework for online teaching and learning involving planning, designing, delivering and assessing can be established, whereas such frameworks are currently lacking in online teaching and learning according to Gaytan's (2009) study.

Training

One of the many challenges for online education administrators is the allocation of time necessary for faculty to prepare to teach online. It is estimated that approximately one year of preparation is necessary for those faculty staff who have not yet taught online. Seasoned educators may tend to avoid transitioning a course to online because of the trepidation of utilizing technology, and the pedagogical challenge of repurposing a face-to-face, well-worn course to an online format. Faculty resistance to teaching online is not new (Morgan, 2003). A recent report indicated that over 70 percent of respondents in a survey study agreed that faculty resistance to teaching online is the major factor 'that impedes institutional efforts to expand online education programs' (Green and Wagner, 2011, para. 9).

Few universities 'offer training on how to actually teach an online or hybrid course with strong pedagogy' (Cole & Kritzer, 2009, p. 36). Online teaching and learning administrators must assist faculty staff in regaining pedagogical skills for online teaching and learning. It is unchartered territory for many administrators and educators who find themselves assigned to positions that involve online pedagogy. However, those skills are similar to traditional pedagogical skills. Findings from experienced, award-winning South Dakota e-learning instructors provide effective pedagogical practices that include fostering relationships, engagement, timeliness, communication, organization, technology, flexibility and high expectations (Bailey & Card, 2009).

An important event in online education today is the transition from small scale experimental courses to large scale operations (Paulsen, 2003). The very foundation of higher education may soon be placed upon online learning pedagogy. The preparation activities should require that faculty take an online course geared toward social presence theory. Gaytan (2009) reported that most faculty training involved learning how to use the technology. Online faculty staff need help to envision, design, and facilitate online courses. Furthermore, faculty development will need fine tuning of pedagogy while the migration from the teacher-centered approach to the student-centered approach continues to emerge.

Trends

Hannum (2009) suggests the phrase 'distance education' has morphed into distributed education or distributed learning. Allen and Seaman (2010) report that 66 percent of all reporting institutions state that 'online learning was a critical part of their institution's long term strategy' (p. 2). Yet, there has not been as much attention to identifying what constitutes structural arrangements to support online programs and online teaching and learning at higher institutions. Marek (2009) suggests a model of institutional support that includes faculty course release, program level training and support, and structured mentoring.

Paolucci and Gambescia (2007) analyzed 239 universities in which at least one graduate degree was fully online. They identified the range of general administrative structures used by universities in which online degree programs are offered. The researchers then categorized the range of options used for the general administration of online education programs as either internal or external. Six structures were identified, three as internal: Academic Department, Continuing Education/Professional Studies and Online Teaching and Learning Unit. Three external structures were identified: Alliance, Outsource, and Consortium. Consortiums can pool academic resources such as libraries, laboratories, and research funding. The University of Louisiana Lafayette (n.d.) features a website with statements regarding institutional context and commitment to distance learning with a university vision statement, and a commitment to academic quality and rigor in electronic environments. Their Office of Distance Learning website also features a Sloan Consortium community member logo. Finally, Paolucci and Gambescia's (2007) study revealed that 62 percent of institutions use academic departments to deliver online teaching and learning and 90 percent to deliver their graduate online programs. A more recent trend is the use of online education divisions as the preferred internal administrative units.

The US Department of Labor (O*NET, 2010) lists Distance Learning Coordinator as one of the Bright Outlook occupations under the category of 'rapid growth, new and emerging.' The occupation of Online Distance Coordinator is projected to grow 20 percent or more over the period of 2008–2018. O*NET describes Distance Learning Coordinator job tasks of day-to-day operator of distance learning and scheduler of courses. The title represents an occupation for which data collection is currently underway, an indication of the vagueness of this newly developing occupation.

Recommendations

The most effective way to improve the quality of learning, according to Al-Fadhli (2009), is through distance education. Quality of online education and appropriate research of online education is a principal concern. Han-

nafin, Hannafin and Gabbitas (2009) encourage online teaching and learning administrators to research and focus on 'design and performance questions using methods that extend and refine research, theory, and practice' (p. 781). For example, the impact on student retention of course material is not fully understood (Lei & Gupta, 2010). Organizational structures for online teaching and learning do not necessarily support student learning outcomes (Gaytan, 2009). Gaytan also reported that because of the lack of interactivity in online education, the quality of education was not as high as in traditional education. Donavant (2009) warns administrators and trainers to avoid placing courses online just because of rising cost or other impediments. Professional development education must be multifaceted to benefit the needs of online instructors.

Researcher's Online Teaching Experience

'The job of a teacher is to be faithful to authentic student learning' (Alber, 2011). This statement embodies my 12 years of online teaching experience in higher education. The online students each chose their fate of my online business communication course, unaware of the rigor involved, but it is rigor that is so important for a prestigious institution of higher learning. Over my years of teaching online, I learned that each student's needs became many student needs. From either frustration or procrastination on their part, or precision writing requirements on my part, I learned the differences of online versus face-to-face student needs. Online students want lots of flexibility, they rarely read their textbooks, and they mostly access the assignments and exams without much, if any, preparation. Whether they experience technology problems from a video business presentation assignment or from writing from their own statistical findings, authentic student learning mediates from timely and gently written emails, announcements and assignment feedback with an upbeat tone. They need multiple opportunities to revise, rewrite and re-evaluate their work, for this is where the authentic student learning occurs.

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The Relationship between Knowledge Management Practices and Technological Innovation: A Conceptual Framework

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This research paper aims to establish a conceptual framework that links the different dimensions of knowledge management, namely knowledge acquisition, knowledge dissemination and knowledge application, with innovation performance, particularly focusing on technological innovation (i.e. product and process innovation). This study seeks to benefit the top management team of any organization that desires to enhance and improve their level of technological innovation through the effective implementation of the relevant KM dimensions The findings of this study conclude that the effectual use of knowledge management practices is believed to unlock the technological innovation of a firm.

Keywords: knowledge management, knowledge acquisition, knowledge dissemination, knowledge application, technological innovation, process innovation, product innovation

Introduction

Organizations today operate in a competitive and globalized business environment. In order to compete with their rivals, many organizations have turned to the use of Information Technologies (IT) to improve their business operations (Vaccaro, Parente, & Veloso, 2010). However, it is no longer sufficient for organizations to solely improve on their business operations and reduce costs (Chong, Chan, Ooi, & Sim, 2011). Organizations nowadays are increasingly focusing their attention on improving their innovation performances – new product performances or the ability of a company to develop new products/services as a response to market needs (Vaccaro et al., 2010). Innovation is one of the key business strategies for companies in the manufacturing industry. The manufacturing industries have traditionally competed on operating with lower costs. However, operating at a lower cost is not a long term sustainable business strategy (Chong & Ooi, 2008). Instead, organizations such as Apple Computers have shown that innovation is the way to move forward. Innovation in manufacturing companies has

been studied by past researchers such as Prajogo and Sohal (2003) and Singh and Smith (2004).

Given that the research on the topics of innovation is increasing, many researchers and practitioners are now looking at some ways in which organizations are able to improve their innovation performances. Past studies in the manufacturing sectors have focused on whether the implementation of Total Quality Management (TQM) practices is able to improve the innovation of organizations (Hoang, Igel, & Laosirihongthong, 2006; Lorente, Dewhurst, & Dale, 1999; Prajogo & Sohal, 2001, 2003; Singh & Smith, 2004; Lee, Ooi, Tan, & Chong, 2010). However, more recent studies have also focused on other operation management areas such as Supply Chain Management (SCM), and looked at whether a better SCM can lead to improved innovation performances. One key finding from Chong et al. (2011) revealed that it is the implementation of Information Technology (IT) tools in the SCM that have a significant relationship with the innovation performances of organizations. Cantner, Joel, and Schmidt (2009) also found that IT is able to facilitate innovations in organizations in the context of inter-firm collaborative relationships. Such collaborative relationship brought by IT is also proposed by Chong, Ooi, Lin, and Teh (2010). Knowledge Management (KM) tools are also one of the key IT tools that are able to improve organizations' innovation performances through increasing research and quality collaborations in companies, and facilitating the exchange of knowledge. The ability to share and store knowledge by KM tools provides the potentials to improve the innovation performances of organizations.

Although the idea of KM implementation and its influence on innovation performances of organizations have been proposed (Chong et al., 2010), there are limited empirical examinations that investigate the relationships between an organization's KM process and its innovation performance, in particular technological innovation (i. e. product and process innovation). Although Vaccaro et al. (2010) conducted an empirical examination on KM tools and innovation performance of organizations, their study focused on an organization's reliance on KM, and neglected the actual KM practices implemented by the organizations. Understanding this relationship will help organizations better plan their KM implementations which may improve their innovation performances. Furthermore, most studies on innovation performances have focused on product innovation, neglecting process innovation. Companies are now paying more attention to both product and process innovations, also known as technological innovation. The implementation of technological innovation is believed improve a company's competitive advantage (Chuang, 2005; Cooper, 1998; Damanpour & Gopalakrishnan, 2001). Therefore, it would be important to investigate technological innovation from the perspectives of both product and process innovations. In order

to bridge the gap in existing literatures, this study aims to examine the relationships between the KM processes implemented by organizations (e.g. knowledge acquisition, knowledge sharing and knowledge application), and their relationships with technological innovation (e.g. product and process innovations) of firms.

Literature Review

Knowledge Management

Ways of managing knowledge in the organization are very important for survival in today's competitive environment, and in that the concept of knowledge management is created. The term knowledge management is still vague, as revealed in the literature (Tiago, Couto, Tiago, & Vieira, 2007). Different researches have interpreted knowledge management differently as shown in Table I. According to Beckman (1999), definitions of knowledge management are very subjective. He further went on to relate knowledge management to experience.

Knowledge management is a process of managing information within the company for the company's gain (Roy, 2002). According to Wen (2009), knowledge management is creating, acquiring, sharing and utilizing knowledge in the organization to enhance performance. Darroch and McNaughton (2001) as cited in Darroch and McNaughton (2002, p. 11) defined knowledge management as

> The management function that creates or locates knowledge, manages the flow of knowledge within the organization and ensures that the knowledge is used effectively and efficiently for the long term benefit of the organization.

Schulz and Jobe (2001) defined KM as the transformation of tacit to explicit knowledge to enhance the flow of organizational knowledge. Knowledge derived from human sources is circulated within the organization. Knowledge can be categorized as tacit knowledge and explicit knowledge according to Nonaka and Takeuchi (1995). Tacit knowledge serves as the base to develop organizational knowledge (Nonaka & Takeuchi, 1995) and cannot be easily explained; while explicit knowledge is structured in nature (Mårtensson, 2000). Explicit knowledge can be easily codified and communicated (Alavi & Leidner, 2001).

In this study, three most important processes consisting of knowledge acquisition, knowledge sharing and knowledge application will be the central element of the knowledge management process (Darroch & McNaughton, 2003; Liao & Wu, 2010). Lin and Lee (2005) revealed that these knowledge management processes are vital for the adoption of new technology. Furthermore, Becerra-Fernandez, Gonzalez, & Sabherwal (2004) share a

Table 1 Previous Literatures That Have Defined the Knowledge Management Process in Different Approaches

Past literatures	Definition
Awad and Ghaziri (2004)	Capturing, organizing, refining, transferring
Darroch and McNaughton (2003)	Knowledge acquisition, knowledge sharing, knowledge application
Shankar, Singh, Gupta, and Narain (2003)	Knowledge responsiveness, knowledge acquisition, knowledge dissemination, knowledge application
Hlupic, Pouloudi, and Rzevski (2002)	Knowledge generation, knowledge codification, knowledge transfer
Oluic-Vukovic (2001)	Gathering, organizing, refining, representing, dissemination
Schwartz and Te'eni (2000)	Acquisition, organization, distribution
Nonaka and Takuechi (1995)	Socialization, Externalization, Combination, Internalization

similar perception in which knowledge management and innovation is related, particularly process innovation. First of all, knowledge acquisition is important because gathering knowledge from suppliers, internal employees and customers remains the top priority for organizations to ensure continuous improvement. This accumulation of information can increase an organisation's understanding of their employees' skills and experiences, enabling the firm to better produce products that can meet customers' satisfaction (Yang, 2008). This step is particularly important as the knowledge of customers' needs and wants, which are in terms of tacit knowledge, can be accumulated, thus ensuring that quality assurance is met in every aspect.

Secondly, knowledge dissemination also plays an important role in the KM process. Employees' participation is believed to enhance the transformation of knowledge to organizational level, ensuring that quality is maintained within the organization (Yang, 2008). Primarily, organizational knowledge is acquired through individuals. Through the dissemination and transfer of knowledge, organizational capabilities can be developed (Kogut & Zander, 1993; Endres, Endres, Chowdhury, & Alam, 2007). Only when employees participate and contribute to the sharing of knowledge can the quality improvement in a firm be maximized (Hsu & Shen, 2005).

Lastly, knowledge application is facilitated by knowledge dissemination. The higher activity of knowledge dissemination or sharing in an organization will enhance the utilization (application) of knowledge. Darroch (2003) emphasized that the application of knowledge goes along the line of being responsive to knowledge collected and shared. For example, as organizations gather knowledge from customers and respond to it by producing products according to their customers' preferences, such knowledge application will help improve the overall company processes. Schwartz and Te'eni (2000)

also stressed that knowledge application contributes to the way the organizations manage their KM. Besides, as stated by Alavi and Leidner (2001), knowledge application is a crucial process that enhances organizational performance, in which knowledge is effectively transformed into action. Furthermore, the time taken to respond to such knowledge is essential, as knowledge that is applied quickly improves a firm's competitiveness (Darroch, 2003). Therefore, due to the ambiguity and uniqueness of knowledge dissemination and application to a firm, and the fact that knowledge has become integrated into the company processes, this will impact upon a firm's creation of sustainable competitive advantages (Day 1994; Grant, 1996; Fahey & Prusak, 1998; Teece, 1998, 2000).

In the words of Darroch (2005), a firm that can manage these three knowledge management components well is more innovative. As knowledge is an intangible asset that is close to impossible for competitors to access and copy, it the provides company with a greater potential to develop its own competitive advantage (Kogut and Zander, 1992; Nonaka and Takeuchi, 1995; Foss, 1996).

Technological Innovation

Innovations promote changes. According to Lagrosen (2005), it is the key that unlocks growth possibilities, creating new markets, ensuring organizational long-term success and crafting out a competitive edge that is unbeatable (Corso, Martini, Paolucci, & Pellegrini, 2001; Du Plessis, 2007). Nonaka (1994) describes innovation as a process of generating new knowledge to solve problems. Innovation is defined by Lundvall and Nielson (2007) as an addition of new knowledge. Chen and Tsou (2007) defined innovation as the initiation, adoption, and implementation of new ideas or activities, and it 'entails identifying and using opportunities to create new products, services, or work practices' (Chen & Tsou, 2007).

Three categories of innovations that have received most consideration (Damanpour, 1991) are administrative and technical, product and process as well as radical and incremental (Damanpour, 1991; Wan, Ong, & Lee, 2005). Technical innovations refer to improvement towards the products, services or processes; administrative innovations refer to improvement in the organizational structure and administrative processes within the organization which are directly related to management (Damanpour & Evan, 1984; Lund & Gjerding, 1996).

Product innovations portray new products to the consumer in the marketplace; while process innovations depict new aspects of the production or service operations, for instance, materials or equipments used in the operation (Laursen & Foss, 2003; Laursen & Salter, 2006). In this research study, these two common forms of innovations, also known as technological

innovation (TI) have been adopted (Chuang, 2005; Cooper, 1998; Damanpour & Gopalakrishnan, 2001) as the dependent variable for the research model. The rationales for adopting TI are threefold. Firstly, according to Cooper (1998), these two forms of innovations have the capability to solve problems, improve performance, add value and develop the competitive advantage of a firm; hence it is recognized as the most significant form of innovation. Secondly, in the creation of new high-end products, many manufacturing firms have been relying heavily on technological innovation to achieve great results (Bi, Sun, Zheng, & Li, 2006). Thirdly, these two types of innovations have been related to the changes in the current products and processes in accordance with the technologies that are available (Roberts, 2007; Bi et al., 2006). Therefore, this research will measure technological innovation by looking at both the product and process innovations of firms.

Hypothesis Development

Relationship between Knowledge Management and Technological Innovation

Knowledge or tacit knowledge is an intangible asset – hence is difficult for the competitors to duplicate – serving as a competitive advantage for the innovating organizations (Darroch & McNaughton, 2003). Effective use of knowledge management will produce several advantages, such as enhancing the firms' ability to produce more knowledgeable products or services to the marketplace and introducing new products or services as well as increasing the firms' ability to produce. Therefore, knowledge management plays a pivotal role in promoting innovative performance (Johannessen, Olsen, & Olaisen, 1999; Wiig, 1999; Scarbrough, 2003; Lin & Lee, 2005).

According to Darroch and McNaughton (2003), the relationship between KM and innovative performance is not well proven. As a result, Darroch (2005) initiated an empirical study in New Zealand, gathering 443 samples from medium-to-large organizations. The result turned out to be favourable with the previous conceptual writings, in that a positive association between KM and innovation is found. The additional finding, however, failed to justify a link between innovation and firm's financial performance.

Another study has been done by Huang and Li (2009) in the attempt to understand the mediating relationships among social interaction, knowledge management, and innovation performance by conducting a survey among 176 Taiwanese firms. The finding revealed a positive relationship between KM with administrative and technical innovation. KM is also preceded by social interaction, and the authors believe that these two constructs have an impact towards innovation.

A firm practising KM is said to be a learning organization, in which this

learning capacity is proven to be more innovative than in average firms (Lundvall & Nielsen, 2007). Based on the large collection of Danish samples size ($n = 2007$), it is found that product innovation increases in probability as the firms organize themselves to become a higher level learning organization.

In fact, KM and innovation are well explored but, as pointed out by Darroch and McNaughton (2003), are 'not well proven' due to loosely defined KM; and also, different types of innovation were captured, e.g. product and service innovation. Therefore, interpretation of the effective knowledge management towards innovation performance should be taken with caution. For example, the innovation study by Darroch (2005) includes both radical and incremental innovation; meanwhile Tseng (2009) utilized a number of patents registered as the way to measure the firm's innovation. Another problem is that most empirical studies do not reveal the types of firms investigated.

Though such distinction somehow creates inconsistency in comparing previous studies, it should nevertheless not deter one from making a possible link between KM and innovation. Instead, using different KM and innovation measures will provide greater generalizability. For the purpose of this study, KM is represented by knowledge acquisition, dissemination, and application. Extant literature in the light of KM elements towards innovation is further explored in the next section.

Relationship between Knowledge Acquisition and Technological Innovation

Knowledge acquisition is the process of obtaining knowledge externally and making it appropriately for succeeding use (Holsapple, 2003). Hence, the knowledge generated externally will serve as the firm's competitive advantage. The acquired knowledge will combine with the existing knowledge to create new knowledge, for instance, new processes (Aranda & Molina-Fernandez, 2002).

It was proven in many research studies that knowledge acquisition has a positive relationship with innovations (Li & Calantone, 1998; Darroch & McNaughton, 2002). Tsai (2001) and Caloghirou, Kastelli, and Tsakanikas (2004) revealed that absorptive capacity has a positive relationship with the creation of new products, in which it incorporates knowledge acquisition. Absorptive capacity indicates the ability of the organization to acquire, incorporate information and make use of the information (Cohen & Levinthal, 1990). Organizations which are involved in absorptive capacity will possibly be able to enhance knowledge acquisition (Jantunen, 2005).

Caloghirou et al. (2004) also examined the relationship between internal capabilities and sources of external knowledge towards innovative performance of the organizations. The result has shown that internal capabilities,

absorptive capacity and sources of external knowledge are essential to increase innovative performance.

However, knowledge acquisition alone may be secondary in promoting innovation activities. Studies have proven that knowledge acquisition has an indirect role in generating innovation performance (Darroch & McNaughton, 2002; Jantunen, 2005). Jantunen (2005) has concluded in his research that knowledge acquisition and innovative performance do not have a significant relationship. However, it is believed that firms that practice knowledge acquisition are predicted to have a positive relationship with innovative performance. Thus, the formulated proposition is as follows:

P1 *Knowledge acquisition will positively affect technological innovation.*

Relationship between Knowledge Dissemination and Technological Innovation

Knowledge dissemination, also known as the sharing and transferring of knowledge, represents the exchange of information, expertise or knowledge between members within the firm (Bartol & Srivastava, 2002, Lin, 2007). In other words, knowledge sharing represents the convenience of accessing knowledge among the employees. Knowledge sharing contains two portions: knowledge donating and knowledge collecting. Knowledge donating indicates offering knowledge; whilst knowledge collecting refers to the process of collecting knowledge among the employees (Van den Hooff & Van Weenen, 2004; Lin, 2007). Literatures have identified knowledge sharing as an important factor to enhance innovation performance (Calantone, Cavusgil, & Zhao, 2002; Scarbrough, 2003) since the knowledge sharing process increases the accessibility of knowledge within the firm.

Good communication and interaction between organizational members can enhance knowledge sharing (Alavi & Leidner, 2001). Hence, the success of knowledge sharing depends on the individual's willingness to share knowledge (Chen & Huang, 2009), which is used to generate mutual learning and value creation. Consequently, effective conversion of organizational members' knowledge and expertise into explicit products or services (Nonaka & Konno, 1998; Yang, 2008) stimulates innovations (Chen & Huang, 2009). Firms with effective knowledge gathering and integration will be more distinctive in nature and pose a greater difficulty for competitors to duplicate, thus upholding the higher firm innovation performance potential (Lin, 2007).

Previous studies of knowledge dissemination and innovations demonstrate a mixture of results. For example, Hong, Doll, Nahm, and Li (2004) concluded in their study of the automotive industry that knowledge sharing enhances process performance. Furthermore, studies also found that

knowledge sharing is positively related to the firms' capability to innovate (Calantone et al., 2002; Lin, 2007). However, Inkpen and Dikur (1998) pointed out that the distance between organizational members may inhibit the process of learning and sharing knowledge. Thus, network expansion is necessary for individuals to expose themselves to new ideas. Employing IT does increase knowledge transfer and sharing among organizational members, in particular those beyond the formal interaction process (Alavi & Leidner, 2001).

A study was conducted in the United States involving US manufacturers and services that examines the link between the transferring of tacit knowledge to the innovation capability. The researchers highlighted that tacit knowledge transfer is positively related to innovation capability of the firms. Increase in this capability will increase the innovative performance of the firms (Cavusgil, Calantone, & Zhao, 2003). In another study focusing on the flat panel display industries, Spencer (2003) revealed that firms that practices knowledge sharing have higher innovative performance. These firms will be able to generate more value to the firm when they share R&D knowledge together with the innovation system. Lin (2007) concluded that both components of knowledge sharing, which were knowledge collecting and donating were positively related to the firm's innovative capability which contributed towards innovative performance.

In another survey conducted in New Zealand, involving 443 firms that contain more than 50 employees, the relationship between knowledge management and types of innovation are examined, which are radical and incremental innovations. Three components of knowledge management, namely knowledge acquisition, knowledge dissemination and responsiveness to knowledge are examined together with innovation. However, knowledge dissemination was found to provide indirect support towards innovation (Darroch & McNaughton, 2002). This is further proven by Jantunen's (2005) study that surveyed 217 Finnish firms, which concluded that knowledge dissemination does not have a significant relationship with innovation performance. It was further argued that organizations which implement all the elements in the knowledge management processes will be able to utilize that knowledge for innovation activities. Besides, Moorman and Miner (1997) revealed that high memory dispersion, which represents sharing of organizational knowledge among members, distracts creativity or inhibits new ideas during a high degree of changes in technological environment. Thus, knowledge dissemination is expected as one of the knowledge management processes that can enhance innovative performance. The following proposition is formulated:

P2 *Knowledge dissemination will positively affect technological innovation.*

Relationship between Knowledge Application and Technological Innovation

Knowledge application is described as developing the knowledge acquired, enabling knowledge to be more effective so to increase its worth. According to Cegarra-Navarro and Martínez-Conesa (2007), it incorporates the information acquired from both the acquisition and distribution stages, which are then integrated into the daily business processes, which will then lead to an increase in the economic effectiveness and efficiency of a firm's operations. In other words, the knowledge that resides in the organization will be exploited to generate products, services or processes. Hence, knowledge application will be useful and significant to generate value for the organization (Bhatt, 2001).

The application of the knowledge provides a more powerful distinctive competency for the firms (Alavi & Leidner, 2001). Firms that engage in knowledge application can realize superior performance. Application of the specialized knowledge can enhance organizational competency by reducing the possibility of imitation (Grant, 1996). In other words, knowledge application produces superior value for the firms, such as firms' innovation or profitability (Johannessen et al., 1999; Lin & Lee, 2005).

Darroch (2005) did a business case study in New Zealand for the role of knowledge management within firms. The purpose of the study is to empirically investigate the linkage between knowledge management, innovation and the performance of firms. 443 survey data were collected from the CEOs coming from firms with more than 50 employees. Using structural equation modelling analysis, the results confirmed that knowledge management – one aspect of which is responsiveness to knowledge – positively predicted innovation, which is defined as resources, routines and capabilities that underpin outputs. This study has thus provided empirical evidence in that firms with efficient knowledge management ability will utilize their resources more effectively, and as a result become more innovative and perform better.

Apart from that, Lin and Lee (2005) revealed that out of three knowledge management processes, only knowledge acquisition and knowledge application are positively related to innovative performance; that is, technological innovation. The researchers indicated that knowledge acquisition and knowledge application have a positive relationship with the adoption level of e-business. Jantunen (2005) also obtained a similar result in that the researcher proved that knowledge application plays an important role in supporting innovative performance. Hence, it can be concluded that the firms that practices knowledge application are better at promoting innovation performance. The following proposition is formulated:

P3 *Knowledge application will positively affect technological innovation.*

Conceptual Framework

Given the thorough discussion in the literature review section, we develop a theoretical framework that examines KM's influence on technological innovation. Figure 1 describes the relationship between KM practices and technological innovation. KM, which is the independent variable, is represented by three dimensions (i.e. knowledge acquisition, dissemination and application); while technological innovation, measured from the perspectives of process and product innovations, is the dependent variable. According to this model, it is suggested that the greater the presence of KM practices in organizations, the higher the level of technological innovation is in the firms.

Implications

Theoretical implication

Given the significance of innovation performance in the research field, there is an increasing research focusing on the most effective processes that can enhance the innovative capability of a firm. Although past studies have proven that there is a relation between KM processes towards innovation performance, there is inadequate research to prove that a relationship does exist from the perspective of a developing nation. Hence, a revised model based on the three KM processes has been suggested in this study to examine if such processes do contribute to the technological innovation of an organization. The significance of the three knowledge management dimensions, which are knowledge acquisition, dissemination as well as application, have been highlighted and emphasized regarding how such practices can influence the technological innovation, in particular the product and process innovation of a company. It can be concluded that the proposed model serves as an essential framework for both researchers and practices to comprehend the impact the knowledge management practices can have on a firm's technological innovation.

Practical Implications

From the managerial perspective, this paper provides useful insights to managers, in particularly for those firms that have initiated the knowledge management practices. The significance of the three processes of knowledge management has been highlighted regarding how they can influence a firm's product and process innovation. First and foremost, knowledge acquired internally or externally, combined with existing knowledge, can help a firm create new processes and new products. Secondly, knowledge dissemination, which represents the exchanging and sharing of knowledge, does increase the accessibility of knowledge within a firm and has been recognized in the literature as an important factor to improve a firm's innovative

capability. Thirdly, the application of knowledge also aims to improve the technological innovation of a firm, as the utilization of knowledge enables a firm to generate new products, processes and services that are of significant value to a company. The industry can benefit much from this study, as the practitioners will know precisely which KM practices to focus on and to apply at the organizational level to enhance the rate of technological innovation. By incorporating an effective set of KM processes, the organizations can indeed achieve a more desirable outcome in terms of technological innovation.

Conclusion

As a summary, the proposed research framework of this study demonstrates the relationship between the contribution of the knowledge management process and its effect towards an effective technological innovation. Despite this, it is important to note that the extant literature generally depicts two groups of thinking (as cited in Andreeva & Kianto, 2011), i.e. knowledge processes directly impacting on innovation, or the nature of innovation as part of knowledge-based processes.

The conceptual model can be useful only if the external moderating factors were identified and addressed, however such effort may be confusing when the moderating factors exist even within the proposed constructs. For instance, Andreeva and Kianto (2011) highlighted knowledge creation as one of the four main knowledge processes in predicting innovation, in which its innovation is measured as innovation in products/services, processes, management and marketing. Additionally, knowledge creation appears to mediate the relationship between other knowledge processes (knowledge sharing, knowledge acquisition, documentation) and innovation.

In addition to that, other constructs related to knowledge, such as the knowledge value chain model developed by Holsapple and Singh (2001) may be considered for future model development as it recognizes five major classes of knowledge manipulation activities that take place in a variety of patterns within KM episodes. The knowledge chain model is divided into five primary (i.e. knowledge acquisition, selection, generation, assimilation, and emission) and four secondary activity classes (i.e. knowledge measurement, control, coordination, and leadership), in which they can lead to changes in a firm's state of knowledge (Holsapple & Jones, 2004). Furthermore, knowledge selection, as proposed by Hosapple and Jones (2004) can also be incorporated as a separate predictor variable when developing a future conceptual model so as to improve on the present model. Knowledge selection is plainly defined as choosing the required knowledge from internal sources and making it suitable for future use (Hosapple & Jones, 2004). When firms have acquired knowledge internally and externally, cou-

pled with the current knowledge, this can assist the firm in the creation of new products and processes.

From past literature, the effectual use of knowledge management practices is the key that unlocks the innovativeness in a firm. The suggested model is deemed valuable to both practitioners as well as managers as it will prepare them towards improving the firms' technological innovation capability. It is proposed that this framework is to be tested with empirical data to find out which KM practices contribute the most to the technological innovation activities of a firm. Possible instruments that can be used to operationalize the constructs may be obtained from Martinez-Costa and Jimenez-Jimenez (2009) and Perez Lopez, Peon, and Ordas (2006) for knowledge management, and Prajogo and Sohal (2003) for technological innovation. Such findings are expected to provide us with more insights and deepen our understanding on the relationship between KM processes and technological innovation. Essentially, such findings can further be used to gauge the effectiveness of KM in enhancing a firm's technological innovation level, which are vital elements of an unbeatable firm in the new era.

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Cultural Repercussions: Extending Our Knowledge about How Values of Trust and Confidence Influence Tax Structures within Europe

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Within a unified Europe that is heading towards ever more harmonization, it is interesting to examine why there exists such diversity in tax regimes among its countries. Is it possible that some of the decisions pertaining to taxation are based on latent cultural aspects? This study, set in a purely European context, seeks to analyze tax variations within Europe through the lens of cultural variations. Specifically, how trust, confidence and equality matter with regard to tax revenues and tax progressivity. Within this regard, we achieved strong results linking trust and confidence to higher tax revenues and higher tax progressivity. That is, where trust among societal members is low and confidence in public institutions is low, regimes opt for low tax revenues and lenient tax rates. It is argued that where mistrust is high, the issue of income distribution between societal members is likely to stay within the private or individual sphere. Conversely, countries with high trust among societal members exhibit higher levels of income distribution by delegating more responsibility to public institutions, reflected in higher tax revenues and more progressive tax structures.

Keywords: trust, confidence, culture, tax, income distribution, knowledge, Europe

Introduction: Economic Cultures and Tax Regimes

In an increasingly intertwined Europe, actions of one country seldom go without repercussions on other countries. Economic interdependence is particularly strong in the European Union, where the members operate in a common market and some even share a single currency. Although some joint rules have been established in the field of taxes, we still observe remarkable differences among the tax regimes of European states. Some countries operate with high public revenue and progressive tax structures, while other countries generate comparatively little revenue and have fairly flat tax structures. For example in 2009, Denmark's tax revenues amounted

to almost 50 percent of GDP whereas Ireland's only accounted for about 25 percent (OECD, 2010). This warrants a key question: why is there such diversity in tax regimes between EU countries?

A responsible answer to this question must address a multitude of aspects relating to the economic, historical and political makings of policy outcomes. However, one avenue that has been disregarded in this debate is the extent to which cultural bearings have an influence on tax regimes. One reason for the neglect is that culture is often considered an elusive term, which is difficult to be disentangled for empirical research (Guiso, Sapienza, & Zingales, 2006). This paper seeks to offset this deficit by exploring one avenue of cultural insight that helps explain why some countries opt for higher tax revenues and more progressive structures than others.

Specifically, it is the objective of this study to explore the role of the two cultural dimensions of social equality and trust for tax outcomes. We suggest that high trust and fairness norms lead to higher tax revenues and more progressive tax structures. While fairness considerations have received some attention as determinants of tax regimes (Plümper, Troeger, & Winner, 2009), aspects of trust and confidence remain comparatively unexplored. This surprises us as we consider the concept of trust pivotal for the functioning of a society. Many business and social activities are facilitated where trust is high as suspicion and time spent controlling them are lessened (Ariely, 2010, pp. 259). The willingness to contribute to common goals is likely to be undermined in societies with high mistrust: we suspect that people fear that others free-ride by avoiding taxes but nonetheless enjoy the public goods provided by the state. Moreover, if mistrust in political institutions such as the government or the parliament is high and they are regarded as opportunistic and budget maximizing bureaucrats, society is likely to be more reluctant to contribute to the functioning public institutions. Hence, in societies with constant suspicion, economic activity is likely to remain more in the individual and private sphere than being produced jointly through public institutions.

Linking this notion with tax regimes, our underlying premise is that higher levels of trust are correlated to higher levels of tax revenues. Societies that have faith that others contribute their fair share and that the tax contributions are being spent correctly are more willing to accept higher levels of public expenditure. Conversely, countries with low levels of trust and confidence among societal members will have less faith in the integrity of their societal counterparts and public institutions and are thus more reluctant to accept high tax margins.

If this holds true, cultural aspects have important ramifications for how governments should be addressing changes in their respective tax regimes. For instance, a proposed tax increase or the introduction of a more progres-

sive structure in some countries may fail if not preceded by an attempt at ensuring trust and confidence among societal members first.

The empirical analysis has a European focus and is rooted in data from EU countries as well as Norway, Switzerland and Iceland. Data pertaining to cultural variation are taken from the European Values Study (2008) while the tax data stem from Eurostat (2011). Although the countries under investigation share historical roots, the variations are sufficiently large with regard to their cultural traits and their tax systems to conduct rank correlation tests.

Exploring the Theoretical Backdrop of Economic Culture and Taxes

The topic of economic culture is fairly new and yet highly arbitrary. Since Berger (1986) formally introduced the topic as an interdisciplinary phenomenon that addresses multiple social ideologies related to economics and business values within a national culture, several differing versions of economic culture have emerged. They all encompass the fundamental idea of economic culture, yet differ along concept, paradigm and operationalization of the phenomenon. As such, it must be noted that economic culture is as elusive a term as it is attractive. Yet, at an agreeable definition, and when used as an analytical tool, it serves as a powerful instrument to trace and understand the origins of many of our economic and institutional behaviours.

The cardinal benefit of utilizing economic culture as an analytical tool is to further the notion that economic behaviour has to be conceptualized in a cultural context (Gulev, 2006; Hofstede & Hofstede, 2005; Trompenaars & Hampden-Turner, 2004). Facts and output indicators reveal only little about economic behaviour; rather the economy is directed by interpretations and preferences that are determined by subtle meanings, personal justifications and the cognitive discourses that mould who we are and become (O'Donnell, 2000). A further benefit, which the current research relies on, is derived from country comparisons that economic cultural depictions yield. The determinants of the economy and their impact on taxation are not conducted through a uniform formula; economic manifestations are a product of a complex culture-specific formula particular to each country of analysis. Hence using economic culture as an analytical tool reminds us that each country has specific economic behaviours that can be traced back to cultural origins (Salacuse, 1999). Origins that, when understood, can help contextualize economic outcomes and allow for better utilization of societal efforts to work in accordance with desired competitiveness levels.

To work towards this goal we propose a singular classification of economic culture that depicts how our focus countries differ from each other along socio-economic tendencies. By no means is the following economic

cultural country portrayal complete; it serves only to elucidate some specific economic cultural traits that are inherent to each of the countries and that may bear latent repercussions to taxation.

Trust, Confidence and Equality as Cultural Dimensions

Attempting to link cultural dimensions to variations in tax regimes requires digression away from mainstream cultural typologies. Accordingly, broad classifications of culture, e.g. individualism vs. collectivism, neutral vs. emotional, etc., (most notably those assembled by e.g. Hall, 1981; Hofstede, 2001, etc.) are, by their very nature of being broad, deemed inappropriate. Their generic construction, which made them hugely popular and utilized, lessens the validity with which they can be applied to specific analyses, such as those pertaining to taxation. Instead, we opt for cultural depictions that are exact and detailed towards unique expressions of behavioural differences. This means our economic cultural typologies are not primed for use in peripheral studies, but they serve to exactly examine the factors of analysis of the current study. This limited scope reduces the elusiveness of the cultural terms and increases the buoyancy of the emerging results (Gulev, 2009).

To gauge the extent to which our focus countries exhibit variations in behaviour relating to how tax policies should materialize, we utilize two sets of data from the European Values Study (EVS) (2008). The first set of EVS (2008) variables that tapped in to the core of the study, namely exploring levels of trust and confidence among societal members, consisted of the following indicators:

- The extent to which most people in society can be trusted vs. the feeling that you must be careful when dealing with people (v62). We theorize that high trust among societal members will permit and promote tax progressivity.
- The extent to which confidence is expressed in parliament (v211) and in the justice system (v218). For both these indicators, it is believed that confidence in the altruistic behaviour of national institutions will facilitate the willingness to support high tax structures and high tax progressivity.

The second set of EVS (2008) data dealt with peripheral cultural traits pertaining to equality that we suspected could also be linked to variations in taxation partiality:

- The extent to which equality with no underprivileged people and social class differences should be more important than personal freedom where the possibility to develop without hindrance is primarily encour-

aged (v192). Variations with regard to this response would help illuminate which cultures feel that equality is more important than individual freedom. We suspect this to be linked with taxation; those that voice high levels of equality should be more supportive of progressive tax structures.

- The extent to which people feel that individuals should take more responsibility for providing for themselves vs. the state taking more responsibility for ensuring that everyone is provided for (v194). We hypothesize that support for individual responsibility would be biased towards less progressive tax structures.
- The extent to which people feel that competition is good as it stimulates people to work hard and develop new ideas vs. the notion that competition is harmful and brings out the worst in people (v196). It is theorized that groups of people belonging to the thought-line that competition is good and promotes hard work in people will support more lenient tax structures.
- The extent to which incomes should be made more equal vs. greater incentive for individual effort (v198). We speculate that populaces with inclinations towards income equality, will voice greater support for high tax revenues and tax progressivity.

Determinant of Tax Outcomes

With the liberalisation of capital markets, scholars predicted a 'race-to-the-bottom' in taxes (Zodrow & Mieszkowski, 1986). The models on tax competition are based on the idea that two countries share the same international capital base and thus compete for attracting investments. As investments are cost-sensitive and capital can freely move across borders, governments engage in competitive tax cuts (for an overview see Wilson, 1999; Genschel & Schwarz, 2011). As the two states do not cooperate by, for example, setting a common minimum tax rate, the competition results in a race-to-the-bottom where each state attempts to undercut the other one's tax rate. In equilibrium, tax revenue and capital tax rates are lower than they would be without international competition. Scholars therefore initially predicted that tax policies would converge around one single tax model (Steinmo, 1994). Accordingly, high tax revenues and progressive tax systems, it was assumed, were not sustainable in the global economy (Rodrik, 1997).

In reality, tax convergence including the race-to-the-bottom is less evident. Certainly, the top personal and corporate income tax rates of many European countries have been on the decline since the mid-1980s. For example, in Germany and the United Kingdom the top rates on personal income dropped from 56 and 60 percent in 1981 to 45 and 35 percent in

2010, respectively (OECD, 2011). Yet, tax revenues have, if anything, risen since then. Moreover, European countries still have different tax regimes: while some such as Sweden and Denmark have relatively high tax revenues and progressive tax structures, others such as Latvia and Romania have less redistributive tax systems.

Scholars traditionally highlight the role of path dependence, domestic institutions and labour organisation to explain differences in tax outcome (Basinger & Hallerberg, 2004; Garrett and Mitchell, 2001; Lierse & Seelkopf, 2011). More recently, they have also referred to arguments of fairness and political cultures that affect the size and the structure of taxes (Koenig and Wegener, 2010; Lockhart, 2003; Nerré, 2008). For instance, Lockhart (2003) shows how societal characteristics shape tax revenues by focusing on the concept of political culture. The political cultures of the United States and Sweden differ sharply: the former is predominantly individualistic, while Sweden is more egalitarian and hierarchical, which is reflected in their tax regimes (Lockhart, 2003, p. 379):

> Societies' tax regimes offer clear indices of their predominant political orientations. A society that practices modest tax extraction will inevitably produce less active and extensive public institutions than a society with a higher level of extraction. Accordingly, the former will leave more responsibilities in private hands (those of individuals, families, charities, and businesses), whereas the latter will realize a broader range of social objectives through public programs.

Lockhart suggests that different cultural traits based on individualism versus collectivism determine the extent to which a society raises taxes and provides public goods. We argue that his focus on individualism neglects the important aspect of trust: the underlying logic of our argument is that voters generally prefer a low tax burden, but they also enjoy high levels of government spending. The trade-off between the two is influenced by the level of trust within a society. Trust and confidence contribute to the level of taxes in a twofold manner: first, trust within society as such means that people believe that everyone pays their taxes. If however, many people cheat on their taxes and nonetheless receive the benefits of publicly provided goods, then the social acceptance of paying the full amount is likely to decline leading to lower levels of tax revenue. Second, confidence in the political system is likely to positively contribute to the amount of tax revenue raised. If the public institutions and the politicians are regarded as opportunistic revenue-maximizers who do not act to the benefit of the public, then the probability is low that a party favouring a strong government based on high taxes will find high public support. Overall, societal trust is therefore expected to be positively correlated with the demand for public goods and tax revenue.

Some studies have also investigated the role of equity norms on the tax structure and the way in which the tax burden is distributed between different societal groups. For instance, Plümper et al. (2009) look at capital rates and investigate how fairness norms in terms of capital-labour equity, determine a country's response to international tax competition. Their main argument is that voters are concerned about a 'fair' distribution of tax burdens, and reduce government support when the difference between effective tax rates on labour and capital becomes too big. In their study they find the effect of fairness norms significant and positively related to capital taxes.

The main argument of the debate on fairness norms stems from the horizontal and vertical equity theorem of public finances (Musgrave, 1959). The former states that the same income, also if generated from different sources, should be taxed at a uniform rate. This means that, no matter whether I receive a certain income from capital returns or from a salary, it should be taxed at the same rate. In contrast, the vertical equity theorem postulates that people with a greater ability to pay taxes should pay more. If the wealthy do not only pay a higher proportion but an increasing proportion, then we refer to a progressive tax system, which is often associated with more egalitarian societies as it enhances the redistribution of income. Hence, we should expect that societies with more egalitarian values, tend to have more progressive tax systems.

While equity norms are not necessarily related to the amount of taxes raised, they are likely to affect the tax structure and the degree of progressivity and income distribution of a society. In sum, we expect different degrees of trust and equality norms to generate differences in the tax system as regards the overall level as well as the structure due to different preferences for public good provision and income distribution.

The data for exhibiting tax variations in Europe are gathered from the European Tax Statistics (European Commission, 2011) and the World Competitiveness Yearbook (2010). We chose major indices such as the tax revenue and public expenditure as a percent of GDP to evaluate the overall amount of public expenditure (see Table 2). With regard to the tax rates, we included measures of the top personal and corporate income tax rate, we opted for the top marginal rates as they better reflect the progressivity of a tax system. Moreover, we include a measure to distinguish between the effective tax rate on capital and labour to evaluate whether different equity norms correlate with how the tax burden is distributed. However, as top tax rates can be arbitrary measures for progressivity, we further selected three indicators to better account for actual income distribution within the European countries. The Gini coefficient measures the inequality of income distribution, where a value of 0 expresses total equality and a value of

100 maximal inequality. The final two indicators assess the percentage of household incomes that goes to the highest and lowest ten percent of households within a country. The more the highest and less the lowest ten percent have of the total income, the higher is the income inequality. In sum, these measures provide information on the extensiveness and the set-up of tax systems as well as the income distribution of a country. They therefore serve as representative indicators to capture and compare the level as well as the structure of taxes between countries, and can be linked to the cultural dimensions of trust and equity norms developed in the previous section.

Methodological Aspects of the Study

In the previous section, we outlined how culture is likely to affect tax outcomes in the European Union. We argued that the two cultural dimensions of trust and equality norms are likely to generate differences in the tax system as regards the overall revenue generated by taxes and the way the tax burden is distributed. In the following we briefly described the methodology which we adopted to derive a conclusion about our stated hypotheses about the relationship between culture and tax structures.

The data for economic culture and taxation structures are differentiated along an important dimension. While the scores for taxation differences are taken directly from European Tax Statistics (European Commission, 2011) and the World Competitiveness Yearbook (2010), the scores for economic culture are weighted results taken from multiple sources based on unprocessed EVS data. This occurs because the EVS does not provide ultimate scores, but leaves the data in its raw form. Accordingly, the data had to be transformed into useable scores that are compatible with the former two sets of data. For each EVS data set, this was accomplished by measuring the EVS ordinal datasets on weighted bipolar scales; the more one set of results gravitated towards one extreme, the less it could consequently gravitate towards the other. This method was kept uniform for all the EVS datasets and resulted in two indicators dealing specifically with trust and confidence, and four indicators dealing with tangential cultural traits suspected to influence tax structures.

The use of bipolar cultural descriptions is a controversial method of depicting cultural variances. On the one hand, its linearity nicely represents diversity in cultures and, by viewing contrasting characteristics, amplifies the significance and meaning of each culture. Yet, on the other hand, its typology constrains the outcomes to the scale's two-dimensional extremities and operates under the implied assumption that the more a culture is biased towards one extreme, the less it may gravitate towards the other (Trompenaars & Woolliams, 2003, p. 5). Although, the latter is true and

its ramifications must be respected, the current research lends support to the methodology of bipolarizing cultures, as it allows for cultural discrepancies to emerge between countries in a panoramic and controllable manner, albeit noted, at the risk of encouraging potentially stereotypical generalizations. Furthermore, the seven economic culture indicators are innately contrasting. Therefore, a bipolar scale is a logical instrument to use, as an indication towards one extremity necessitates a departure from the other extremity.

To test the strength of the correlations between our cultural determinants and taxation structures, we conducted cross-lateral Spearman rank correlation tests fitted with confidence intervals for 28 data set samples to verify if significant correlations exist. This involved a large number of tests (altogether 166 separate correlation tests, of which 70 are included in this study) which were conducted through a statistical correlation machine that calculated the Spearman rank correlation coefficient (ρ) as:

$$\rho = \frac{\sum_{i=1}^{n} R(x_i)R(y_i) - n\left(\frac{n+1}{2}\right)^2}{\left(\sum_{i=1}^{n} R(x_i)^2 - n\left(\frac{n+1}{2}\right)^2\right)^{0.5}\left(\sum_{i=1}^{n} R(y_i)^2 - n\left(\frac{n+1}{2}\right)^2\right)^{0.5}}, \quad (1)$$

where $R(x)$ and $R(y)$ are the ranks of a pair of variables (x and y) each containing n (28) observations.

Results

Table 1 provides results pertaining to the rank order of each country in relation to each of the seven cultural dimensions tailor made for this study. As can be seen from the rank orders, for the four first cultural dimensions there is little geographical consistency; sometimes Nordic countries rank as most agreeing with the statements, sometimes Latin European or Central and Eastern European countries agree most with the statements. Further, countries that are often considered culturally similar (e. g. Spain and Portugal or Norway and Sweden) seem to be spread out dissimilarly over a large span. Such discrepancies are less apparent for the final three cultural dimensions that make up the core of this study. For trust and confidence in society and societal institutions, we notice a predilection of Nordic countries to be grouped together and agreeing most with the statements. Latin European and other continental countries score fairly neutrally, while Central and Eastern European countries typically tended to agree least with these statements.

Table 2 reveals the correlations that emerged between our cultural determinants and our tax and distribution variables. The results indicate a variety of meaningful correlations. Starting with culture's connection with tax rev-

Table 1 Cultural Manifestations of Our Focus Countries

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Countries that agree most with this statement						
SE	RO	FR	AT	DK	DK	DK
RO	UK	ES	SI	NO	LU	NO
DK	SW	BG	RO	SE	NO	FI
NL	SE	BE	DE	FI	SW	SW
FI	DE	NL	EL	NL	SE	LU
NO	IE	LU	FI	SW	SK	IC
SI	AT	FI	HU	IC	ES	SE
PL	PT	LT	SW	UK	NL	AT
UK	LU	EL	CZ	DE	IE	FR
EE	FI	PL	SE	IE	SI	EE
EL	FR	IT	PT	AT	FR	UK
ES	CZ	PT	ES	BE	FI	NL
LT	SK	HU	SK	BG	IC	DE
HU	DK	AT	FR	EE	BE	BE
SK	NL	DK	IE	ES	BG	BG
LV	LT	EE	PL	IT	PT	IE
IE	NO	IE	IC	CZ	DE	EL
LU	IC	CZ	UK	LT	IT	PT
IC	BE	SI	LT	LU	AT	SI
BE	BG	LV	BE	PL	EL	LV
BG	EE	SW	BG	FR	EE	ES
AT	PL	UK	NO	LV	UK	PL
FR	SI	SE	NL	SI	RO	RO
IT	HU	SK	EE	EL	LT	HU
DE	EL	DE	IT	HU	HU	IT
SW	LV	NO	LU	PT	PL	CZ
CZ	ES	IC	LV	RO	LV	SK
PT	IT	RO	DK	SK	CZ	LT
Countries that agree least with this statement						

Notes Column headings are as follows: (1) Equality is more important than freedom, (2) The individual should take more responsibility, (3) Competition is harmful, (4) Incomes should be made more equal, (5) Most people in society can be trusted, (6) Do you have confidence in Parliament? (7) Do you have confidence in the justice system? Abbreviations: AT – Austria, BE – Belgium, BG – Bulgaria, CZ – Czech Republic, DE – Germany, DK – Denmark, EE – Estonia, EL – Greece, ES – Spain, FI – Finland, FR – France, HU – Hungary, IC – Iceland, IE – Ireland, IT – Italy, LT – Lithuania, LU – Luxembourg, LV – Latvia, NL – Netherlands, NO – Norway, PL – Poland, PT – Portugal, RO – Romania, SE – Sweden, SI – Slovenia, SK – Slovakia, SW – Switzerland, UK – United Kingdom. Own creation based on EVS (2008) data.

enues as a percentage of GDP, we notice two highly significant correlations at the 99% confidence interval. The first relates to 'Trust in society' (0.481)

Table 2 Correlations between Cultural Determinants and Tax/Income Indicators

As % of GDP		Tax Rates					Income Distribution		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Equality is more important than freedom (Q192)									
–0.100	0.170	–0.142	0.071	–0.120	0.117	–0.064	0.227	0.030	0.188
The individual should take more responsibility (Q194)									
–0.083	–0.021	–0.218	–0.074	–0.336*	–0.156	–0.208	0.182	–0.117	0.173
Competition is harmful (Q196)									
0.148	–0.215	0.208	0.291	–0.154	0.195	0.049	0.279	0.010	0.248
Incomes should be made more equal (Q198)									
–0.027	–0.056	0.120	–0.165	–0.261	–0.011	–0.031	–0.138	0.246	–0.173
Most people in society can be trusted (Q62)									
0.481*	0.369*	0.676**	0.227	0.390*	0.338*	0.387*	–0.322	0.069	–0.286
Confidence in Parliament (Q211)									
0.305	0.147	0.518**	0.342	0.290	0.034	0.398*	–0.364*	0.083	–0.396*
Confidence in justice system (Q218)									
0.516**	0.374*	0.595**	0.357*	0.437*	0.221	0.491**	–0.313	0.186	–0.271

Notes Column headings are as follows: (1) tax revenue, (2) expenditure, (3) top personal income, (4) corporate income, (5) consumption, (6) labor, (7) capital, (8) Gini index, (9) income of lowest 10%, (10) Income of highest 10%. $N = 28$, * $p < 0.05$, ** $p < 0.01$. Own creation based on Spearman Rank Correlation tests.

and the second to 'Confidence in justice systems' (0.516). As the inclination for both trust and confidence increases, we notice an increase in the amount of tax revenue collected. At the 95% confidence interval, we notice the same trend with regard to public expenditure. As the inclination of people in a society is to have high levels of trust in each other, and confidence in the justice system, public expenditure levels increase (0.369 and 0.374, respectively).

Concerning 'Personal top income tax rates,' we achieve highly significant correlations with 'Trust in society' (0.676) and our two confidence parameters: 'Confidence in parliament' (0.518) and 'Confidence in the justice system' (0.595). Seen collectively, as these three cultural parameters increase, personal income tax rates become higher. Or seen reversely, as trust and confidence in national institutions diminishes, so do the top marginal levels of personal taxation rates.

Consumption tax rates achieve significant correlations with three cultural parameters: the feeling that the 'State should take more responsibility' (–0.336), 'Trust in society' (0.390) and 'Confidence in justice systems' (0.437). For the latter two, increases in trust and confidence again positively correlate to progressive tax rates. Labour and capital tax rates were theorized to exhibit strong positive correlations with culture. Along the cultural dimensions 'Trust in society,' such significant correlations were achieved (0.338 and 0.387, respectively). For capital tax rates, we also observed significant positive correlations for 'Confidence in parliament' (0.398) and

a highly significant positive correlation for 'Confidence in justice systems' (0.491).

Finally, concerning income distribution, it is important to interpret the results carefully. The significant negative correlations achieved for the 'Gini Index' and 'Confidence in Parliament' (–0.364) and the negative correlation achieved for 'Income of highest 10%' and 'Confidence in Parliament' (–0.396) concur with the positive trends we have observed thus far for trust and confidence. A high Gini score, and a high 'Income of highest 10%' score, indicate inequality. Thus, where confidence and trust is high, we notice less inequality in income distribution.

Besides the correlations that achieved significance, several noteworthy results pertaining to failed or insignificant correlations emerged, that are equally noteworthy to highlight. Predominantly, the scores achieved along the cultural parameter 'Incomes should be made more equal' across all topics related to tax structures were insignificant. The reasons for the failure of this seemingly strong connection to tax are discussed later. Equally important to note from the table is the direction of the correlations under the three categories of 'Income distribution.' Albeit the majority of correlations being insignificant, it is difficult not to notice the overwhelming amount of negative correlations connected with the 'Gini Index' and 'Income of the highest 10%' and the positive correlations connected with 'Income of the lowest 10%.' For all three, these correlations indicate that where trust and confidence is voiced as important, income distribution reflects more equal allocations.

Discussion of the Results

The results of our empirical analysis reveal significant correlations between culture and income distribution. Surprisingly, the indicators for equity norms mostly rendered trivial results, whereas trust and confidence results produced very significant correlations for many areas of taxation. Trust is not only crucial for the level of tax revenue and expenditure levels but also for inequality and income distribution. In the following we discuss the linkage of the two categories of trust and equality with regard to variations in tax systems.

Pertaining to the former, we expected that societal trust would be positively correlated with tax revenue as societal acceptance of paying taxes and the confidence towards political institutions would increase. The hypothesis can be confirmed at a 0.01 level of significance for 'Trust in society' (0.481) and 'Confidence in the Justice System' (0.516). It shows that societies with high levels of trust such as the Nordic countries also tend to have high tax revenues. Certainly, we do not claim that trust directly causes high tax revenues but the evidence shows that there is a significant linkage between

the two. Our theoretical argument elucidated the reasons for this: although people favour both low taxes and high government spending, the provision of common goods and institutions is facilitated by societal trust.

The results demonstrate that trust and confidence matter beyond what we had expected. High levels are not only related to more public revenue but also to higher tax rates in general. Although the correlations of our trust and confidence indicators are particularly strong with the top personal income and capital tax rate, its importance is not restricted to direct taxes. Also the consumption tax rate is positively correlated. The evidence suggests that trust is generally associated with higher tax rates, which is not surprising as trust is correlated with higher tax revenues: those states that have higher levels of tax revenue are also likely to have higher tax rates, as otherwise they would not be able to reach high levels of revenue.

While trust is overall related to higher tax rates, the results show particularly significant relationships with the top personal income tax rate and the capital tax rate. This suggests that trust and confidence do not only positively contribute to higher public revenues but also to more progressive tax systems. In other words, in such societies people do not only pay proportionally more taxes to the state, but people with high incomes also pay a greater proportion of their incomes than people with low incomes. Of our sample, Denmark has the highest top personal income tax rate of 59 percent whereas Romania only levies a rate of 16 percent in 2009. Moreover, the six countries (Baltic and Eastern European countries) with the lowest income tax rate are all based on flat tax systems, according to which people pay taxes of the same proportion of their income, while those with the highest rate (Nordic and Continental countries) are based on progressive systems, which facilitates income redistribution as they impose higher tax rates for upper incomes. This contributes to vertical equality (Musgrave, 1959, see also the second section).

The three measures on income distribution confirm this finding. While most of the results of the last three columns (Table 2) are statistically insignificant, they have the 'right' algebraic sign. The results for the Gini Index and the 'Highest 10%' have a negative sign whereas the 'Lowest 10%' has a positive sign. This means that mistrust is positively correlated with inequality, which reconfirms our hypothesis that trust positively contributes to more progressive tax systems.

While cultural values related to confidence generate important insights for understanding variations in European tax regimes, the indicators for equality do so less. Previous studies suggest that equity norms affect the tax structure and the way in which the tax burden is distributed between different societal groups (Plümper et al. 2009). Consequently, we suggested that societies with more egalitarian values are likely to have more pro-

gressive tax systems. Yet, the empirical results do not confirm our initial premise. The four selected questions from the EVS (2008), which account for different measures of equality (Q192–Q196), only render one significant correlation.

Why do we not find more significant correlations between tax structures and equity norms? Are perceptions about fairness not important? There are several reasons as to why the results are trivial. First, looking at Q198 in more detail, it becomes obvious that the answers to 'Should incomes be made more equal' are highly dependent on the status quo. Hence, the rankings are not only influenced by cultural differences but to a large extent by the actual level of inequality within a country. In societies where incomes are fairly equal, the answer is likely to be more negative although equity norms may be more pronounced. Second, with regard to Q192 'Equality is more important than freedom,' the descriptive statistics are crucial as the mean is 1.59, on a scale from one to ten, where one signifies 'personal freedom' and ten 'equality,' with a standard deviation of 0.09. In other words, the variation in cultural differences is so low among European countries that it is almost impossible to have significant rank correlation. Third, the insignificance of Q196 suggests that there is little public understanding of the linkage between taxes and competition. Most people are likely to associate competition with markets and companies rather than with taxes, which makes it an inappropriate indicator for this study. Hence, Q192, Q196 and Q198 are not optimal for measuring or comparing equity norms, although for different reasons.

Finally, for (Q194) we find that individual responsibility is positively correlated with consumption taxes. This finding indicates that the higher the consumption tax, such as the VAT and Excise taxes, the more likely we are to be in a society in which individuals should take more responsibility for themselves. The correlation is not surprising as consumption taxes are indirect taxes, which are charged irrespective of different levels of income. Hence, governments intervene (redistribute) less and the responsibility (risk) stays more within the individual. Yet, in the other areas of taxation, we do not reveal significant results. Interestingly, Southern and Eastern European societies often favour more equality than other European countries (Table 1). Although they have a high preference for redistribution and income equality, their levels of trust are comparatively low. Pitted against each other, it appears that the existence of societal trust acts as a larger precondition for governmental intervention and income redistribution than do stances on equality.

Summing up, the analysis shows that trust and confidence of people towards other members of their society is crucial for the provision of public goods and institutions. If mistrust is high, more responsibility is likely to

stay within the private or individual sphere. Certainly, the results do not reveal a direct causal link between trust and taxes; yet, they suggest a causal link between mistrust and the size of the public sphere: issues of tax evasion and suspicion in opportunistic behaviour by public institutions undermine the willingness to contribute to common public goals. Hence, in societies with constant suspicion, economic activity is likely to remain more in the individual and private sphere than being produced jointly through public institutions.

Conclusion

This article has sought to address the issue of why diversity exists in tax regimes between European countries. There are multiple ways to address this question involving historical, institutional and economic aspects. For many researchers, it is felt that cultural aspects are so elusive that they do not serve for empirical research as it is difficult to measure culture scientifically, and hence cultural aspects are omitted from the discussion. We show in our study how culture can be operationalized to measure linkages between societal characteristics and income distribution. Based on data from the EVS (2008), we constructed seven indicators, which reflect the level of trust and of equity norms in European countries. With regard to the taxes regimes and income distribution we involved a variety of variables to account for the size of the public sector and the degree of income inequality within the countries under investigation.

The empirical analysis does not show that culture directly affects tax regimes and income distribution, but rather that a variety of significant correlations exist between trust and the size and structure of the public sector. Most notably, we notice a strong link between trust among societal members to be positively linked with higher tax revenues and more progressive tax structures. The correlations pertaining to confidence in institutions such as parliament and justice systems further underscore this tendency: where confidence is high, we notice tax structures of high progressivity. Put another way, where trust is low and confidence in public institutions is low, we observe lower tax revenues and a tendency towards flat systems for personal income taxes.

This has important repercussions on policy-making. Gauging the extent to which trust and confidence exists within a society may provide reliable predictions of how adjustments to tax rates will be received and reacted to by the public. Any increases in taxes, for instance, may be thwarted by a cultural reluctance based on mistrust to accept higher tax rates. For policy makers, it is important to understand the cultural undertones of what a society is prepared to accept and what it will reject, so that sound policies, including tax structures, can be made.

As with most cultural studies, the current paper suffers from some shortcomings inherent to the cultural debate. Taking national cultural portrayals as representative of all the people within a country is highly controversial; can we make fair representations of all the people of a country through country specific EVS data, or are sub-cultures and personal variances within countries such dominant influences that they cannot be discounted? Equally, controversial is the method of bipolarization of cultures; is it always true that the more one gravitates towards one extreme on a bipolar scale the less one can gravitate towards the other? Both of these typical shortcomings of cultural analyses are apparent in the current work, with the obvious consequence that the results must be interpreted leniently. However, when acknowledging the existence and ramifications of these shortcomings the results do provide value on a more holistic level: a level relevant and appropriate to have as an outset to allow for deeper continuations of cultural research. As such, the results of this study provide further nourishment for researchers and practitioners who subscribe to the notion that differing modes of operations stemming from cultural differences do persist in Europe (Klarsfeld & Mabey, 2004) and that these can be further understood and worked with.

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Global SMEs' Strategy

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In developed countries the number of SMEs vastly exceeds the number of MNCs. An important share of SMEs are somehow linked to MNCs – but the impression prevails, that SMEs are in a subordinate position and certainly do not have a global strategy. We argue, however, that there should be partnership relations between MNCs and SMEs. The share of importance is conditioned by the degree, how well SMEs understand the MNCs global policy and how they support it with their activity. Through that MNCs become a part of SMEs' global strategy, which consequently becomes their strategy as well. The paper includes a number of SMEs' considerations and actions to be included in the MNCs' global strategy – as well as some propositions upon public support needed for this purpose.

Keywords: outsourcing, global business strategy, small and medium sized enterprises, multinational corporations

Introduction

SMEs represent a huge economic potential. Their strength is in the number of enterprises, which is very high, in the potential to grow and prosper in the sense of creating employment opportunities, but also in the sense of creativity and innovation. Nevertheless, in quite a lot of developed and developing countries this potential remains just a potential.

For example, results of GEM (Rebernik, Tominc, & Crnogaj, 2011) show that in many European countries in the year 2010 the volume of entrepreneurial activities decreased. In seems that the most important reason for closing many enterprises has been their low profits or even losses. Besides, one of the problems of many countries, when considering the growth of SMEs, is the low growth aspirations of the active population and low internationalisation levels of SMEs as well. One of the reasons for such a situation might be the relatively low level of educational attainment in SMEs.

One of the solutions to these problems might be in linking SMEs with larger companies. The latter might act as a catalyst encouraging innovativeness of SMEs, their aspirations to grow and internationalise and to contribute as much as possible to national and international economies. Links between SMEs and larger companies might be established in different ways, but in our paper we especially consider the possibility of so-called outsourcing and offshoring. In our opinion a strategic approach to this kind of busi-

ness cooperation should be implemented in SMEs and larger companies as well. We believe that besides SMEs and larger companies, economic policy makers should be involved too. They should try to develop appropriate business frameworks, such as education and training, knowledge and technology transfer, development policy and the like.

Importance of Small and Medium Enterprises (SMEs) for National Economies

SMEs' Contribution to Economies

By definition, SMEs should be independent and not part of a larger enterprise, they should be managed in a personalized manner, and have a relatively small share of the market (Carter & Jones-Evans, 2006). There are three different SMEs categories – micro, small and medium sized enterprises differentiated by the number of employees, turnover and asset thresholds. We can talk about SMEs when at least two of the three criteria are met – there are fewer than 250 employees employed in SMEs, their turnover should not exceed 50 million EUR, and their asset value should not exceed 43 million EUR.

The analysis of the importance of SMEs operating in national and world economies (Carter & Jones-Evans, 2006; GEM, 2011) shows that the share of SMEs exceeds 99.7% of all enterprises in the majority of countries (e.g. EU, US and Japan) and that the majority of the active population (i.e. more than 50% or even 70% in the case of Europe) are employed by SMEs. In accordance with this GEM (2011) reports that in OECD countries SMEs create about two thirds of jobs.

Innovation and technological change seem to be an important factor related to the growth of the SMEs sector in recent years as well. Carter and Jones-Evans (2006) add that large companies' defragmentation, development of the service sector, changes in the labour market and public policies have been positively related with the prosperity of SMEs in recent years.

Synergies between SMEs and Large Enterprises

Nevertheless, there are some important aspects which should be mentioned when considering the positive roles of SMEs in modern economies. Namely, not all of the numerous SMEs possess high potential for creating new jobs. Research (see Carter & Jones-Evans, 2006) confirms that only a very small proportion of SMEs, the so-called 'gazelles,' significantly contributes to creating new jobs. Besides, very few SMEs grow. The overall rates of employment growth are especially low in Europe. Scarpeta, Hemmings, Tressesl, & Woo (2002), for example, showed that employment gains of US SMEs are significantly higher than those of European SMEs – their rates of growth are two times higher than the employment growth of Finnish

SMEs and four times higher than the growth of enterprises in the UK or Denmark.

It also seems that too much emphasis can perhaps be given to the conviction that SMEs represent a key source of innovation. Carter and Jones-Evans (2006) highlight some research claiming that most innovative firms in the US and Germany are not SMEs but larger enterprises, especially the ones with formal R&D departments. We believe that SMEs are often an important source of new ideas and creativity (Schumpeter, 1934), but as already said, innovation and new knowledge capitalisation is more in the domain of larger enterprises.

It seems that the power of influence of SMEs within national and international economies is lower than the influence of larger companies. Compared to large enterprises SMEs are small in size, they do not grow as much as they could, and their innovation capabilities are often weaker than expected, but on the other hand they are quite numerous and employing more people as well, when compared to the number and employment rates of larger enterprises. UNCTAD (2010), for example, reports that there are over 400 million entrepreneurs in 54 countries, but according to World Investment Report there are only 889,416 large, multinational companies (MNCs) around the world with 82,053 parent corporations and 807,363 affiliates. As one can see, the ratio between SMEs and MNCs is approximately 1:500.

Nevertheless, the practice shows high levels of interdependence between SMEs and large enterprises. European statistics show that more than 3.7 million or 7% of SMEs are suppliers to major industrial firms (EIM & Ikei, 2009) on one hand, and on the other, even 'the largest firms [...] cannot always undertake major innovations alone' (Dickson & Hadjimanolis, 1996). Innovation is a learning process which requires the exchange of knowledge and a high level of interaction and cooperation between different partners (Roelandt & Hertog, 1999).

In the studies of networking some authors focus primarily on the horizontal links and cooperation between SMEs. Marshall (1961), for example, names this type of networks industrial districts. Others highlight the links between large enterprises and their suppliers, usually SMEs (Marceau, 1999). In such cases hierarchical relationships or clusters in the vertical supply chain appear. Links may be developed between firms which need or base their business on the same resources. Furthermore, relationships emerge among enterprises involved in joint innovation or joint production (Marceau, 1999). Whittington, College, and Owen-Smith (2009) list other possible reasons for networking, e.g. the reduced costs of moving goods, increased availability of people and ideas, external economies of scale, allowing clustered firms to benefit from spill-over of knowledge, and making R&D programmes more fertile than those of their isolated competitors. Net-

working is an important factor in fostering innovation (Dickson & Hadjimanolis, 1996). Summarising some research findings, Whittington et al. (2009) note that 'there is a strong correlation between an organization's network of partnerships and its innovative output, particularly in research-intensive industries.'

Need to Support the SMEs

Governments can have a profound impact on how all firms, large and SMEs operate and on their opportunities to grow. Governments' policies in this area have become key focal points of efforts to help improve how SMEs develop and cooperate with large enterprises.

There are three main dimensions to the government role (Carter & Jones-Evans, 2006). Governments can act as regulators, as economic agents and as strategic planners and promoters. As regulators they determine trade rules, legal forms of companies, the extent of legal limits regarding company liabilities, strength of anti-trust and monopoly regulations, and influence regulation on conditions at work, consumer protection, environmental regulations, etc. As economic agents they define taxation, and influence the competitive environment by developing of government services, acting as an important employer and by introducing different social engineering and redistribution policies. As strategic planners, governments finance and support SMEs by offering grants, subsidies, loans or information and knowledge through education and training, R&D, marketing and productivity initiatives, and international trade protection and barriers.

Besides, government can significantly affect linking and cooperating initiatives between SMEs and larger enterprises. The Slovenian government, for example, puts quite a lot of effort into encouraging R&D links and training focused links between SMEs, larger enterprises, and also research organisations and higher education institutions by introducing financial incentives. From 2009 to 2015 the government plans to encourage R&D and training activities through three key mechanisms of integration (Competence Centres, Centres of Excellence and Development, Centres of Slovenian Economy) amounting to about 314 million EUR. This amount of money shows the relatively high importance of these three mechanisms, since it exceeds the volume of almost two years of regular government investment in R&D in Slovenia (Dermol & Drev, 2011).

Global Business Strategies of Multinational Companies (MNCs)

Definition of MNCs

In the paper we focus on larger companies operating in international markets. It is proper, however, to distinguish among companies concerning their strategic focus. We can identify international, transnational, global and

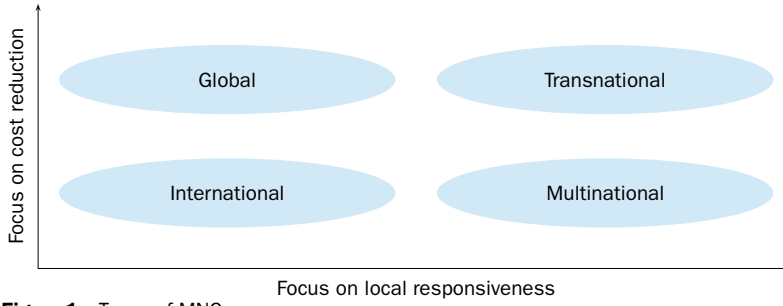

Figure 1 Types of MNCs

multinational companies. In short, international companies are exporters and importers; they have no foreign investment and make their products or services only in their home country. Transnational companies invest in many countries, may have global headquarters, but also distribute decision-making power to various national headquarters. Multinational companies, in the narrower sense, have investments only in a few countries and are more responsive to local preferences than a global company. Global companies, on the other hand, have investments in dozens of countries but maintain strong headquarters only in one, usually their home country. In this paper, however, we use the term 'multinational' for all companies operating in several or many countries (see Figure 1) (Hines, 2007).

Total revenues of the 50 largest MNCs in the world in 2010 were quite large – approximately $850 billion (for comparison, the US federal budget for 2012 was in the amount of $2500 billion). MNCs create and enact strategies that are best suited to their power and core capabilities, trying to think globally and operate locally (Wikipedia, 2012). MNCs' mantra is obviously economy of scale, since they prefer to homogenize products as much as the markets allow them to keep the costs as low as possible. Their marketing campaigns often span the globe with only one message (albeit in different languages) in an attempt to smooth out differences in local tastes and preferences. A crucial factor for MNCs is also the jurisdiction in the countries where they operate.

Outsourcing and Offshoring as an Opportunity for or a Threat to SMEs

Global Business Strategy can be defined as the business strategies engaged by the businesses, companies or firms operating in a global business environment and serving consumers throughout the world. Global business strategies are adopted by businesses to meet their short and long term objectives.

The short term goals of the business would be related to improving the

day-to-day operations of a company while the long term objectives are generally targeted towards improving a company's performance – to increase the profits, sales and earnings, ensuring growth and stability of the business and dominance over the national or regional market in the long run (Economy Watch, 2010). Nevertheless, the shortest way to improve company performance is to cut its costs, and this is much easier outside than inside the firm. Additionally, large companies' economics are burdened by administrative costs, internal inefficiency, cost of unionized wages etc.

Further, when considering cost structure, we assume that the share of wages substantially exceeds the cost of materials etc., especially in high-tech companies. Additionally, the wages of qualified workers and professionals – which may have ample power vs. management – can't be easily controlled. This however, is quite difficult to handle in the legal, social and economic environment of developed countries, and much easier in many less developed countries. In these countries the supply of labour by far exceeds demand. Besides, in many such countries the quality of labour and available talents in demanding disciplines (e.g. informatics) are equal to or even better than the average levels in developed countries. In addition, the cost and capacity of up-to-date communications and transport allow for high quality and low cost bridging of global distances. Due to the efforts to cut the costs, outsourcing or offshoring (which is defined as overseas outsourcing) has become an important business strategy of MNCs.

Nowadays, however, there is a passionate resistance to the offshoring strategies. Namely, many politicians and trade unions argue that they increase unemployment especially among qualified workers in high-tech industries. The protests seem to be the loudest in US, but are virtually nonexistent in Europe due to ample reserves of low-paid labour, mostly in south-eastern European countries. Garrido (2007) presents some suggestive evidence of the adverse impacts of offshoring. Namely, the AFL-CIO labour unions in USA claim that 3 million jobs were lost since 1998, and 1.78 million or 59% of them were lost due to reductions in manufacturing. The consulting firm Deloitte found out that one third of big financial institutions have transferred their operations abroad and 75% of them intend to do the same in the next two years, and the 2009 Strategic Outsourcing Conference reported a strong surge in outsourcing due to the crisis. Besides, the Forrester Research consultants predict a transition of 3.4 million 'white collar' workers offshore until 2015, Hewlett Packard announced that 800,000 workers would be moved offshore to reduce costs by about $30 million yearly. The report of US Commerce department also notes that US MNCs have closed 2.9 million jobs in US, and have created 2–4 million jobs offshore.

Dramatic announcements abound – but beyond the criticism that MNCs,

by offshoring, diminish workplaces in USA at a cost of $300 billion, there is another truth. Federal law allows (1) tax relief on equipment purchases connected with offshore activities (approx. $150 million per year) and (2) payment of tax on profits delayed until repatriation. Thus the MNCs leave up to $1 billion outside USA. This alone is a dramatic motive to increase offshoring offshoring (Rasmus, 2010).

But still, at least 90% of jobs in the US require proximity to the main companies and therefore cannot be transferred overseas (Krodel, F., Keller, A., Ratajczyk, M., & Maier, 2011). Besides, there are quite some underdeveloped areas in the US and vicinity as well (e.g. the reserves for American natives, Mexico). There can be heard voices opposed to inshore operations in the US but their potentials are limited, last but not least by traditional culture and ways of life (Jamess, 2011).

Global Business Strategies of SMEs

Concepts of Global SMEs Strategies

The power and influence of MNCs exceed as a rule the capacities of SMEs. But, SMEs are becoming increasingly a crucial factor of MNCs' performance as well. To increase flexibility and decrease costs of hierarchy, large companies strive to transfer as many activities and functions to other firms, which they control in many ways. It is possible to identify different forms of activity and function transfer reaching from outsourcing, operating contracts, to daughter firms in a corporation, cooperation, joint-ventures, etc. In all these cases, decreased costs of hierarchy are in diverse ways compensated by increasing the costs of exerting control and negotiating (Coase, 1937; Williamson 1981; Foss, 1996, 1998).

A simple and short term oriented approach is to use outsourcing to decrease costs. Namely, there are so many small firms willing to perform the same tasks for lower price. Outsourcing is then considered as a strategy following the concept of 'lean organization,' creating more value for customers with fewer resources, maximizing customer value while minimizing waste. Simplifying the concept can lead to so-called 'pragmatic outsourcing,' which means outsourcing activities to the supplier by quoting the lowest price (Krym, 2011).

This approach, however, may start a vicious circle of low prices to suppliers – barely enough for existence. Suppliers create no profit to invest in new core capabilities; they just cut wages and other expenses to the lowest possible level. As pressures on wages increase, the insourcing enterprise tries to get higher prices for the same product or service. This is not acceptable to the outsourcing enterprise, forcing it to find new insourcing partners and transfer the business to them. The previous insourcer, exhausted and under pressure to increase wages, is on the short way to bankruptcy. But,

the outsourcing party must invest to enable the new insourcer to perform according to purchasing specifications, organize logistics, introduce quality control, etc. All of these often surpass the advantage of lower price to the supplier. This process might be repeated again and again, leaving behind bankrupted SMEs and, due to the necessary investments in changing partners, negatively affecting the outsourcing party as well. For SMEs, entering the 'pragmatic insourcing' as the last and desperate attempt to survive is obviously not a viable strategy. On the other hand, larger companies need solid partners as well. In such endeavours they expect good value for money, new initiatives, ideas and capabilities from the insourcing party and not just low prices for meager services (Lean Enterprise Institute, n. d.).

In seems that the outsourcing party will invest to enhance the partnership only if it encounters a willing and understanding attitude. The initiative will, therefore, be on the side of SMEs too. They should study and evaluate possible strategies on their own, prepare and propose improvements for future cooperation with the larger enterprise and in this way try to influence the global business strategies developed by MNCs. The SMEs will therefore succeed only if they understand, at least partially, the MNCs' global business strategy and find their own position in it. On the other hand, it is possible to introduce their own strategies as well. SMEs global strategies should fit the broader strategies of MNCs and they should become an integral part of the MNCs' strategies.

There are so many successful and long-lasting partnerships among MNCs and SMEs around the world. They are, as a rule, based, on the SME's part, on creating a global – even if relatively narrow and limited – strategy, integrated in the broader strategy of the MNC partner. Then, 'small is beautiful' is a lasting qualification.

Development of the Global Business Strategy of SMEs

We can identify a series of actions which should be considered when one approaches the development of the global business strategy of SMEs:

(a) Identification of Possible Relationships between SMEs and MNCs on the Hierarchy-Market Continuum (Figure 2)

The core of business strategy of the SME is its relation to MNCs, spanning from very close to very loose ones – from so-called 'market' to 'hierarchy' concepts with many other concepts in-between these two extremes. There are different opportunities and threats hiding within the transitions among positions in the 'hierarchy' and 'market' continuum. Each possible relationship and transition among SMEs and MNCs will be carefully analysed in the process of strategy creation. Obviously, the analysis in a given relationship between an MNC and an SME can lead to various considerations.

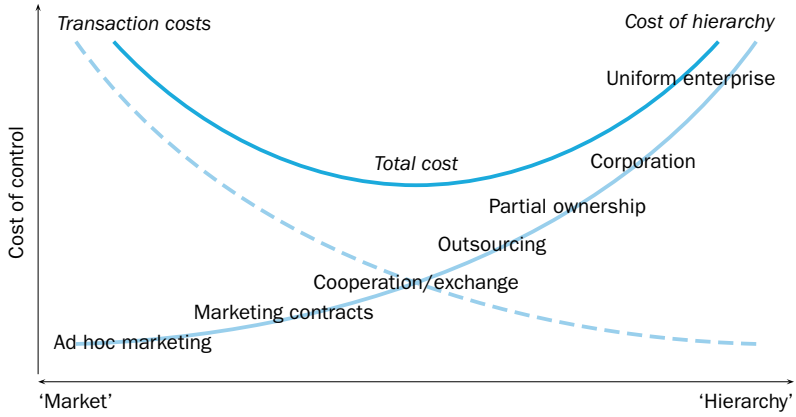

Figure 2 Hierarchy-Market Continuum

Outsourcing is not the only possible cooperative arrangement between two or more companies. Even inside of an enterprise, there are many cooperative arrangements – among functions, services, levels of management and, most important, among individuals and groups engaged in joint activities. Special cases of cooperation are corporations, possibly including numerous firms connected by capital bonds. Besides, there are different forms of cooperation, mostly bound by agreements; outsourcing is only one of many possible commercial relations formalized in sales and purchasing contracts, short or long term, fixed or variable; and furthermore licences, franchises, etc. But, not many relationships are among the equally large, powerful, popular etc. organizations. Imbalanced relations are facts of life and can be fair and open, cooperative, even friendly. If they are properly designed and based on the needs of partners, the relationships among large MNCs and small SMEs may not necessarily be unequal, tense and exploiting. Nevertheless, in spite of uneven relationships, SMEs can in some ways perform even better than the larger companies. SMEs employing just a handful of top professionals can be much more flexible and innovative than the larger ones. Relationships among small, innovative and large, powerful companies, or relationships among 'colonizers' and 'consolidators' (Markides & Geroski, 2005) may be advantageous for both sides. Colonizers develop new marketable, even revolutionary products, and sell the designs to 'consolidators,' which have ample financial resources, effective structures, production capabilities and access to global markets. In some cases, they even buy a 'colonizer,' offering good remuneration to the experts and better possibilities for R&D.

In the 'pragmatic' concept of outsourcing the only requirement of the outsourcing party is the lowest possible price – there is little place for a

broader cooperation – and the insourcing party must either accept the conditions or lose the customer. In creative outsourcing, the relationships and roles of the outsourcing and insourcing partner are much more balanced – oriented to lasting partnerships, negotiations are 'win-win' oriented.

(b) Mutual Understanding and Knowing of Business Partners

The absolute prerogative to achieve the desired outcome in a relationship between an MNC and an SME is a reasonably detailed and in-depth knowledge of each other. Oversimplified decisions related to the extent, contents, target duration and changes during relationships may cause unpleasant consequences. In extreme situations a broken relationship can be a cause for the MNCs' costly involvement in searching, analyzing, testing and qualifying of new possible partners, and on the other hand catastrophic loss of business, followed by a long and risky recovery if not bankruptcy for more vulnerable SMEs.

(c) Recognising and Meeting the Needs and Expectations of SMEs and MNCs

As already indicated, the starting point in the process of creating an SME's strategy should be a thorough analysis of the MNC with which the SME is going to work. This analysis should be focused on finding the MNC's needs and expectations as well, and on creating a strategy meeting those needs and expectations. Standard managerial tools used in creating strategy will be used. The analysis of the partner's short and long term needs and expectations may be based on the traditional SWOT model – strengths and weaknesses for the SME to meet these needs and expectations. On the other hand, an estimated SWOT will be done concerning SMEs' evaluation of possible advantages and disadvantages of a potential relationship with the MNC. Differences among needs and expectations, time horizon of the outsourcing, joint R&D, industrial property and many others will be dealt with and resolved in integrative negotiations between the SME and MNC.

(d) Implementation of Strategic Planning Processes and Using Appropriate Planning Techniques

Strategic planning is at the core of strategic management. SMEs forced into a 'pragmatic' model usually do just basic planning for production. On the other hand, SMEs involved in an active relationship with their customers exercise more active planning according to their role in the mutual global strategy shared with its customers, mostly MNCs. According to the basics of strategic management, strategic planning includes (1) identification of shareholders' expectations (based on their unstable needs and lasting values), (2) determining long term goals and short term targets to be achieved by synergistic activities, (3) structures and (4) financial as well as material

and human resources (corresponding approximately to core competencies). Strategic planning includes short term (usually annual) targets – and enables the enterprise to master steps leading to the realization of long-term goals. All of these will be sufficiently aligned with global strategy of the enterprise and in sufficient extent with the MNC's global strategy.

Setting up the goals and targets is a creative process. It can be improved by the use of the technique of creating scenarios and verifying targets and goals through comparative estimates (benchmarking).

(e) Knowing and Understanding the Cultures and Cultural Differences of MNCs and SMEs

Strategic planning in the narrower sense is more or less a deterministic activity dealing relatively little with human needs and values of employees, customers and other important stakeholders. Nevertheless, this approach is mirrored in the culture of enterprises and other organizations, as well as in their environments, and strongly influences their behaviours. Recognizing and understanding cultures are crucial abilities of managers, both in the MNCs and in the SMEs tied to them. Important authors are Hofstede (1980, 1991), writing about the culture of environments and Trompenaars and Hampden-Turner (2001), writing about the cultures of organizations. They define culture as a set of people's specific behaviours which are based on their values. We all have our own values. They might be related to personal or to organizational goals, and some of them to the ways and means of attaining these goals. Whenever people are directed in an activity which is opposed to their value, they will be reluctant and be under pressure, even hostile. Understanding the culture of an organization, be it an MNC or an SME, is a necessary condition to success. The same is valid for other organizations, groups, publics etc.

(f) Establishing the Fit between SMEs' and MNCs' Business Strategies

Furthermore, an effective strategy of SMEs in relations with MNCs must be reasonably congruent with the MNCs' global business strategy becoming the global strategy of the SMEs as well. Consequently, SMEs working with several MNCs will have even several global sub-strategies on one hand, or on the other, if feasible, a synthesis of them. This is a normal strategic behaviour not only of most SMEs but of all organizations operating in the marketing economy nowadays.

(g) Practising Learning in the Relationship between SMEs and MNCs

Last, but not least, the relationships between MNCs and connected SMEs can be an important source of knowledge creation. Learning is, by definition, a social process based on ideas and a sifting process as well. In

this way, the knowledge can be internalized by members of all involved organizations. Learning is on the other hand an absolute necessity to build new core competencies which facilitate the creation of competitive products and services, leading to organizational success. There are five strategies which could be used in this context: (1) collaboration which is highly receptive and highly transparent, (2) competition which is highly receptive and non-transparent), (3) compromise as a moderately receptive and transparent process, (4) accommodation which is non-receptive but highly transparent, and (5) avoidance which is neither receptive nor transparent (Larsson, Bengtsson, Henriksson, & Sparks, 1998).

Supporting introduction to SMEs Strategy

Governments can significantly influence the collaboration between SMEs and MNCs, encourage learning within the SMEs, and assist in the implementation of global strategic thinking. SMEs are somehow reluctant to use consulting services as well, and therefore need some kind of a push from outside. This push can come from governments offering grants, subsidies, loans, education and training, and also R&D, marketing and productivity initiatives. We have already mentioned some mechanisms which the Slovenian government is using to link SMEs and other organisations to foster training and R&D, which is actually a kind of learning or transfer of knowledge (since there are some knowledge organisations involved as well). Of course, in all of these possibilities the idea of outsourcing should be built in the future to show the SMEs that a strategic approach to MNCs might provide a good opportunity to prosper and to grow.

The educational system with entrepreneurial learning approaches is another opportunity which can be used to promote the idea of a systematic approach to outsourcing and global strategies in these areas. We have already mentioned that learning – the education and experience of entrepreneurs – is related to the performance of SMEs. Entrepreneurial learning is an issue on which many educational institutions have been focusing lately (Dermol, 2010). We are of the opinion that the knowledge about outsourcing should be considered as an important educational theme as well – especially within the context of entrepreneurial learning.

Besides, many countries including Slovenia have developed a system of SMEs' support. Such systems usually include three support environments (i. e. entrepreneurial, innovation and financial environment). The major roles of such systems are to make the administration efforts at the entrance into entrepreneurship as easy as possible, to offer the SMEs – especially high-technology ones – the best possible operating environment and infrastructure with possibilities for networking with the R&D sector, and to improve the access to finances, thus enabling the growth of SMEs. Again, we believe

that the idea of outsourcing should be built into all the mentioned support environments, and additionally, the mechanism introducing the possibilities for SMEs to get in touch with possible MNCs looking for business partners might be introduced as well.

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Abstracts in Slovene

Učenje od in s kupci preko družbenih medijev: model socialnega učenja kupcev

Jari J. Jussila, Hannu Kärkkäinen in Maija Leino

Družbeni mediji lahko na različne načine omogočijo in bistveno okrepijo sodelovanje s in učenje od kupcev, med drugim z novimi družbenimi načini posredovanja in sprejemanja povratnih informacij o novih izdelkih in konceptih. Ustvarili smo model, ki lahko managerjem in raziskovalcem omogoči boljšo analizo in razumevanje priložnosti, ki jih ponujajo družbeni mediji, predvsem z vidika interakcije s kupci v trgovanju med podjetji (B2B). S pomočjo modela smo analizirali različne pristope k družbenim medijem v trgovanju med podjetji, s čimer smo želeli izboljšati razumevanje slabo raziskanega področja uporabe družbenih medijev pri učenju kupcev in pri inovacijah v interakciji s kupci v trgovanju med podjetji.

Ključne besede: inovacije, kupec, učenje, organizacijsko učenje, učenje kupcev, družbeni mediji, trgovanje med podjetji, B2B

IJMKL, 1(1), 5–25

Sestavljena strategija za zakonito in etično rabo podatkovnega rudarjenja

Dinah Payne in Brett J. L. Landry

Podatkovno rudarjenje, vedno bolj priljubljena poslovna praksa, omogoča pridobivanje informacij iz obstoječih podatkov z namenom prepoznavanja trendov, kot so nakupovalne navade kupcev, in lahko prispeva k večji učinkovitosti trženja podjetij. Podatkovno rudarjenje pa prinaša tudi določene dileme in stroške, pri čemer je najbolj problematično vprašanje pravic do zasebnosti posameznikov in stroškov morebitnih sprememb "tradicionalnih"pravic do zasebnosti. Namen našega prispevka je ponuditi pregled osnovnih definicij podatkovnega rudarjenja in strategijo za uspešno, smiselno in etično rabo podatkovnega rudarjenja v podjetjih generacije znanja.

Ključne besede: management, učenje, znanje, podatkovno rudarjenje, rudarjenje besedil, zasebnost, etika, strategija

IJMKL, 1(1), 27–43

Preprečevanje kriminala belih ovratnikov v gospodarskih družbah z znanjem in učenjem: empirična raziskava managementa glavnih finančnih direktorjev

Petter Gottschalk and Hans Solli-Sœther

Znanje in učenje sta pomembna elementa v boju proti finančnemu kriminalu in bolj specifično kriminalu belih ovratnikov. Za potrebe naše empirične raziskave o kriminalu belih ovratnikov, katere namen je zagotoviti vpogled v preventivne pristope v praksi, smo opredelili 500 največjih gospodarskih družb

na Norveškem glede na njihov letni promet. Glavnim finančnim direktorjem teh družb smo po pošti poslali pismo, v katerem smo jih prosili, da izpolnijo spletni vprašalnik, do katerega lahko dostopajo s pomočjo gesla, navedenega v pismu. Odprto vprašanje v vprašalniku o preprečevanju kriminala belih ovratnikov se je glasilo: kako najbolje preprečiti kriminal belih ovratnikov v vašem podjetju? Rezultati ankete kažejo enakomerno porazdelitev med anketiranci, ki poudarjajo nadzor, in tistimi, ki poudarjajo vpliv. Naša empirična raziskava stopa korak nazaj od mnogih člankov dobre prakse in omogoča vpogled v preference glavnih finančnih direktorjev pri preprečevanju kriminala belih ovratnikov v podjetjih.

Ključne besede: kriminal belih ovratnikov, glavni finančni direktor, revizija, sistem notranjega nadzora, znanje, učenje

IJMKL, 1(1), 45–54

Kdo izvaja spletne programe izobraževanja?

Mary K. Cook-Wallace

Uspešni spletni programi izobraževanja so poglavitnega pomena za visokošolske zavode. Nedavna raziskava o zavezanosti visokega šolstva spletnemu izobraževanju je razkrila veliko raznolikost akademskih in administrativnih poklicev, ki zagotavljajo vpogled v ustvarjalna prizadevanja zavodov za razširitev ciljev poučevanja in učenja v visokem šolstvu. V prispevku smo raziskali načela, teme, posledice in pomembne vidike spletnih programov poučevanja in učenja ter njihove administratorje z javnih in zasebnih štiriletnih zavodov z obstoječimi programi. Glavna tema, ki izhaja iz poklicev, je na študenta osredotočen pristop k poučevanju in učenju.

Ključne besede: administratorji, izobraževanje na daljavo, visoko šolstvo, znanje, učenje, management, poklici, spletno izobraževanje, poučevanje

IJMKL, 1(1), 55–69

Odnos med praksami managementa znanja in tehnološkimi inovacijami: konceptualni okvir

Yin-Kuan Ng, Voon-Hsien Lee, Alex Tun-Lee Foo in Pei-Lee Gan

Namen prispevka je vzpostaviti konceptualni okvir, ki povezuje različne razsežnosti managementa znanja, in sicer pridobivanje, razširjanje in uporabo znanja, z uspešnostjo inovacij, s poudarkom na tehnoloških inovacijah (tj. inovacijah izdelkov in procesov). Naš cilj je zagotoviti koristnost raziskave za vodstvo vsake organizacije, ki se želi okrepiti in izboljšati raven svojih tehnoloških inovacij z učinkovito izvedbo ustreznih dimenzij managementa znanja. V raziskavi smo ugotovili, da lahko uspešna uporaba praks managementa znanja sprosti potencial podjetij za tehnološke inovacije.

Ključne besede: management znanja, pridobivanje znanja, razširjanje znanja, uporaba znanja, tehnološke inovacije, inovacije procesov, inovacije izdelkov

IJMKL, 1(1), 71–89

Vpliv na kulturo: izboljšanje našega znanja o vplivu zaupanja na davčne strukture v Evropi

Rune Ellemose Gulev and Hanna Lierse

V združeni Evropi, usmerjeni v čedalje večjo harmonizacijo, je zanimivo proučiti razloge za obstoječo raznolikost davčnih režimov med posameznimi državami. Pri tem se poraja vprašanje, ali nekatere odločitve glede obdavčevanja temeljijo na latentnih kulturnih vidikih. V raziskavi, postavljeni v čisti evropski okvir, smo analizirali razlike v obdavčevanju v Evropi skozi objektiv kulturnih razlik. Pri tem smo se osredotočili na pomen zaupanja in enakosti v povezavi z davčnimi prihodki in progresivnostjo obdavčitve. Rezultati raziskave kažejo na močno povezanost med zaupanjem ter višjimi davčnimi prihodki in večjo progresivnostjo obdavčitve. To pomeni, da kjer sta zaupanje med člani družbe in zaupanje v javne ustanove nizka, se režimi odločijo za nizke davčne prihodke in milejše davčne stopnje. Obstaja mnenje, da je v primeru visokega nezaupanja vprašanje porazdelitve dohodka med člani družbe večinoma omejeno na zasebno oziroma individualno sfero. Po drugi strani pa je za države z visokim zaupanjem med člani družbe značilna višja stopnja porazdelitve dohodka in večji prenos odgovornosti na javne ustanove, kar se odraža v višjih davčnih prihodkih in progresivnejših davčnih strukturah.

Ključne besede: zaupanje, kultura, davki, porazdelitev dohodka, znanje, Evropa

IJMKL, 1(1), 91–108

Globalna strategija malih in srednje velikih podjetij

Mitja I. Tavčar in Valerij Dermol

V razvitih državah število malih in srednje velikih podjetij (MSP) močno presega število multinacionalk. Precejšen delež MSP je sicer na takšen ali drugačen način povezanih z multinacionalkami, vendar prevladuje mnenje, da so MSP pri tem v podrejenem položaju in nimajo tako imenovane globalne strategije. Kljub temu ostajamo zagovorniki partnerskega odnosa med multinacionalkami in MSP, pri čemer je delež pomembnosti odvisen od tega, kako dobro MSP razumejo in s svojo dejavnostjo podpirajo globalno politiko multinacionalk. S tem multinacionalke postanejo del globalne strategije MSP, ki posledično postane tudi njihova strategija. Prispevek ponuja vrsto premislekov in ukrepov, vezanih na MSP, ki jih je potrebno vključiti v globalno strategijo multinacionalk, kot tudi predloge za zagotavljanje potrebne javne podpore.

Ključne besede: zunanje izvajanje dejavnosti, globalna poslovna strategija, majhna in srednje velika podjetja, mednarodne korporacije

IJMKL, 1(1), 109–123