

**UNDERSTANDING THE BENEFITS OF MANAGEMENT INNOVATIONS:
THE IMPACT ON PERFORMANCE AND REPUTATION**

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Abstract

Seminal work on the conceptualization of management innovations needs to be complemented by empirical studies on the benefits for corporations. This paper focuses on how management innovations can build competitive advantage in two ways: management innovations can contribute to economic performance and to corporate reputation. Through cross-sectional regression analysis on 159 distinct management innovations for 100 S&P 1.000 companies, this study provides evidence, as predicted, for a dual positive effect of management innovations on performance and on corporate reputation.

INTRODUCTION

Innovative management practices contribute to long-term improvements in macroeconomic performance (Schumpeter, 1947; Mansfield, 1993; Teece, 1980; Baumol, 2002) and are important sources of competitive advantage on the organizational level (Takeuchi, Osono and Shimizu, 2008; Subramanian and Nilikanta, 1996). Recent research has conceptualized and explained how actors within the right context can bring about innovative management practices, which rely less on technological components and more on tacit knowledge (Birkinshaw, Hamel and Mol, 2008; Hamel, 2006; Nahapiet and Ghoshal, 1998; Nonaka and Takeuchi, 1995). Such management innovations can be developed, adopted and used to generate economic value (Subramanian and Nilikanta, 1996; Birkinshaw et al, 2009; Mansfield, 1993), to increase conformity to industry trends (Abrahamson, 1991; Abrahamson, 1996; Zbaracki, 1998; Abrahamson and Fairchild, 1999 Teece, 1980; Zmud, 1982; Damanpour, 1987; Abrahamson and Rosenkopf, 1993; Burns and Wholey, 1993; Guler et al., 2002), to strengthen their reputation and signal future performance

improvement (Rindova, Williamson, Petkow and Server, 2005; Westphal and Zajac, 1998; Fombrun and Shanley, 1990). While there is debate on the utility of management innovations with some arguing that management innovations are indicative of a continued struggle between “counterpunctual themes” (Barley and Kunda, 1992: 365) without progression (Staw and Epstein, 2000), it is widely accepted that companies renew their management practices with the goal to improve performance (Gruber and Niles, 1972; Teece, 1980; Kimberly, 1981; Damanpour and Evan, 1984; Abrahamson, 1991; Alänge, Jacobsson, and Jarnehammar, 1998; Mansfield, 1993). Notwithstanding the increasing popularity of management knowledge and practices as an object of study (e.g. Rost and Osterloh, 2009; Nijholt and Benders, 2007; Clark, 2004; Scarbrough and Swan, 2001; Mazza and Alvarez, 2000), there is a lack of empirical evidence of the consequences of management innovation. More research separating out management innovations’ impact on firm performance metrics is needed (Birkinshaw et al, 2009; Staw and Epstein, 2000; Damanpour, 1987).

In this article we focus on three specific questions. First, what is the relationship between management innovation and performance? We seek to test whether the relationships are positive or negative for all management innovations and to separate specific management innovation with greater promise for performance increase. Second, what is the relationship between management innovation and corporate reputation? Understanding the reputational consequences for corporations could lead to identifying management innovations that are more likely to yield greater reputational effect. Third, how similar are the relationships of management innovations on reputation and performance and to what extent does performance moderate the relationship? If the same management innovations bring about

improvements in performance and in reputation, these practices could entail a dual-benefit for organizations. If asymmetry were to prevail, for example with possible improvements of performance but no (or negative) effect on reputation, corporations would need to be more careful in their development and implementation of management practices. Similarly, in such case understanding about the moderating effects can help disentangle the consequences of management innovation.

Answering these questions, this study contributes to the literature in strategic management in three important ways. First, we provide empirical evidence of effects of management innovation on corporate reputation and performance. Second, research measuring management fashions with media indicators (Nijholt and Bender, 2007; Staw and Epstein, 2000) so far does not help disentangling these effects on performance and reputation. We compare indirect with direct effects of management innovations on performance. Third, linking Mintzberg's concept of emergent strategies and the important stream of strategic renewal (Hamel and Prahalad, 1989; Volberda, Baden-Fuller and Van den Bosch, 2001) with management innovations this research helps to better understand strategy as the emergent property of managing innovation initiatives over time.

Our method builds on related research in management and economics (e.g. Arnold, Earl and North, 2007; Cho and Hambrick, 2006; Busse, 2002; Scott Morton, 1997). Using cross-sectional regression analysis of 100 leading companies systematically sampled from the S&P 1000 and their use of management innovations as based on informational media reports, this research will test hypotheses relating to 159 distinct management innovations such as total quality management, scenario planning, outsourcing, quality circles and re-engineering and their effect on organizational performance and corporate reputation.

This article is structured as follows. In this first section the main constructs, the goals of the research, and the theory and methodology are introduced. The second and third sections will provide the theoretical background. In these sections the literature on management innovations, organizational performance, and corporate reputation will be reviewed, and hypotheses will be put forward. Next, the methodology and the data will be discussed. The results of the data analysis will be shown in the fifth section. The final sections will discuss the results of the research, give conclusions on these results, and will provide limitations and avenues for future research.

MANAGEMENT INNOVATIONS

Innovation is a subject that has been widely studied in the literature (e.g. Tidd, Bessant, Pavitt, 2001; Van de Ven, Polley, Garud and Venkataraman, 1999; Henderson and Clark, 1990; Damanpour, 1991; Dougherty, 1992; Scott and Bruce, 1994; Klein and Sorra, 1996) and researchers, practitioners and politicians agree on the need for innovation to maintain competitiveness (e.g. Tidd et al, 2001; Jansen et al, 2006). Special emphasis lies on internal or external factors that can either foster or inhibit innovation (Khan and Manopichetwattana, 1989; Dougherty, 1992; Chesbrough and Teece, 2001), organizational performance as outcome of innovation (Nicholson et al, 1990; Damanpour and Evan, 1984; Bolton, 1993), and implementation issues of innovations (Klein and Sorra, 1996). Zaltman et al (1973) list many different types of innovation, yet the most widely studied types may well be product and process innovations (e.g. Abernathy and Utterback, 1978). There also is agreement on a main division in innovation categorization, being that between

technical innovation and administrative innovation¹ (Daft, 1978; Damanpour, 1991; Siguaw, Simpson and Enz, 2006; Damanpour, Walker and Avellaneda, 2009).

Technical innovation refers to innovation in products or production techniques, whereas administrative or management innovation refers to innovation in organizational structure and administrative processes (Damanpour, 1991; Blauw and During, 1991). Management innovations occur where organizations break with their past behavior (Birkinshaw et al, 2009) by introducing a new product development process, a new accounting system, or new ways to develop strategies or monitor their implementation to achieve superior performance. Strategic leadership behavior was found to have a strong positive influence on administrative innovations (Elenkov, Judge and Wright, 2005), which in turn can lead to technical innovations, and vice versa (Damanpour et al, 1989).

Management innovations are seen as strategic moves that are intended to increase performance (e.g. Stata, 1989; Teece, 1986). Many researchers have studied both directions of a relation between innovation and performance, i.e. how innovation drives performance. Others have studied the reverse relationship, according to which performance influences innovation. Evidence for the latter has been found in different forms. First, the behavioral logic explains that superior performance stimulates innovation (Manns and March, 1978; Caldwell and O'Reilly, 1982; McKinley, 1987). Second, substandard performance will stimulate the adoption of innovations (Bolton, 1993; Meyer, 1982; Bowman, 1982; Singh, 1986). The direct and indirect relationships between innovation and performance variables have been the subject of few studies (Subramian and Nilakanta, 1996; Damanpour and Evan, 1984), and Han,

¹ Administrative innovation is also called organizational or management innovation (e.g. Birkinshaw et al, 2008; Kimberly and Evanisko, 1981; Damanpour, 1984). In this article we consider new tools and methods on the executive level emphasizing newness as new for the firm.

Kim and Srivastava (1998) study organizational innovation as a mediator between the market orientation of a firm and its performance.

Management innovations, or innovative management techniques or practices, are defined with nuance as implementation of new management principles, practices, processes and structures that represent a significant departure from current norms (Birkinshaw and Mol, 2006; Hamel, 2006). Examples of companies that have become famous for their use of certain management innovations are for instance Toyota, for their use of total quality management, Procter and Gamble, for their use of brand management, and General Electric, for their use of Six Sigma. Such management practices can produce major shifts in industry leadership (Birkinshaw, Hamel and Mol, 2008; Hamel, 2006) and enhance a company`s competitive advantage.

Two main perspectives in the literature explain why organizations adopt management innovations: a contextual perspective and a rational-economic perspective. A rational-economic point of view suggests that management innovations are developed and adopted for the economic benefits they hold for the firm (e.g. Kaplan and Mackey, 1996; Mansfield, 1993; Hamel, 2006). These benefits can be limited to short-term benefits (e.g. Porter, 1991) as well as long-term benefits such as is the case with business model innovation (e.g. Dietl et al, 2009; Magretta, 2002). The contextual perspective includes sociological and institutional views on real and perceived effectiveness of management innovations. Sociological theory explains the ebb and flow of management techniques as similar to that of fashion cycles (e.g. Abrahamson, 1996), collective learning process (Abrahamson and Fairchild, 1999) and institutional change (Hargrave and Van de Ven, 2006). The attention-based view (Ocasio 1997) suggests a performative element of shifting attention in a dynamic context. The following sections build on economic and institutional perspectives.

USING MANAGEMENT INNOVATIONS FOR ECONOMIC BENEFITS

Although a relation between innovation and performance is hypothesized in the literature (e.g. Birkinshaw, Hamel and Mol, 2008), empirical evidence on the relation between management innovations and performance is still scarce, and doubts regarding the usefulness over the long term persist. Early research efforts (e.g. Damanpour and Evan, 1984; Kimberley and Evanisto, 1981; Kotabe and Murray, 1990) have shown that more research is needed, which can partly be explained with the special characteristic of the issue. Information asymmetry, strategic behavior and the high content of tacit or sticky knowledge make it more difficult to understand (e.g. Szulanski, 1996) how management innovation affects performance. In an environment of information asymmetry (e.g. Akerlof, 1970) between a company and its stakeholders and competitors, not all effects of innovations are clearly visible. In situations of technical innovations, outsiders can see the effects of these innovations more easily because the number of new product launches or patents can be linked to economic benefits. However, developing and using a management innovation can obscure the performance consequences because the actual implementation of management innovations is far more difficult to observe, let alone derive a company's economic benefits from (e.g. Whittington, 1996). Strategic behavior that aims at diminishing visibility of managerial innovation can further exacerbate the difficulties (e.g. Wilcox King, 2007). Measuring technical innovation (e.g. number of patents) and its influence on performance may be easier; management innovations are more difficult to codify, they require the participation of many people, and the results may come delayed (Birkinshaw and Mol, 2006; Szulanski, 1996; Winter 2003; Zollo and Winter, 2002). While technical innovations were found to have a direct relationship

with both organizational efficiency and organizational effectiveness or the failure of those organizations that do not innovate (e.g. Christensen, Anthony and Roth, 2004), only few studies have focused on management innovations and found significant associations with organizational effectiveness (e.g. Damanpour et al, 2009; Subramanian and Nilakanta, 1996). Building on such evidence and the causal linkages proposed in the literature our first hypothesis is as follows:

Hypothesis 1: The use of management innovations will have a positive effect on company performance.

USING MANAGEMENT INNOVATIONS FOR REPUTATIONAL BENEFITS

The neo-institutional perspective (Powell and DiMaggio, 1983; Scott, 1987) explains how social forces constrain and enable agents to adopt and diffuse management innovations (e.g. Abrahamson, 1986). Factors that bring about institutionalization include governmental influence (Baron, Dobbin and Jennings, 1986), network effects (Davis, 1991; Burns and Wholey, 1993; Young, Charns and Shortell, 2001), coercive and normative dynamics (Palmer, Jennings and Zhou, 1993), trade relations and cultural similarity (Albuquerque, Bronnenberg and Corbett, 2007), organization characteristics (Burns and Wholey, 1993), and top management behavior (Flyvbjerg, Skamris Holm and Buhl, 2005; Young, Charns and Shortell, 2001; Hoffman and Hegarty, 1993). Ahmadjian and Robinson (2001) explain why and how management innovations such as downsizing can contribute to the gradual deinstitutionalization of characteristics of business systems such as permanent employment in Japan. This perspective explains why companies adopt and use management innovations with the context in which these companies are embedded. Companies develop and adopt

management innovations because they conform to industry standards where they are forced to by regulatory institutions, or they seek to better their reputations with stakeholders by exceeding expectations.

Enhanced reputation with key stakeholders is a strategic, socially embedded asset to companies (Kim 2009; Love and Kratz, 2009; Flanagan and O'Shaughnessy, 2005; Weigelt and Camerer, 1988). Research has shown that U.K. executives ranked reputation as the most important of thirteen intangible resources (Hall, 1992). Positive reputation provides several benefits such as reduced contracting and monitoring costs (Roberts and Dowling, 2002), higher willingness to pay for products (e.g. Shapiro, 1983), reduced risks for customers (Kotha et al, 2001), which leads to higher post purchase or post-use satisfaction (Aaker, 1991). Reputation helps differentiate firms from competitors (Boyd et al, 2009; Rindova, Williamson, Petkova, and Sever, 2005; Peteraf, 1993), reduces information asymmetry and consumer uncertainty (Weigelt and Camerer, 1988), and substitutes for expensive governance mechanisms (Kogut, 1988).

Moreover, researchers have found that reputation is linked to organizational performance (Fombrun & Shanley, 1990; Shamsie, 2003) and value creation (Rindova et al, 2005). More recently, Eccles, Newquist and Schatz (2007) found that high and negative attention in the news media, and their cognitive and affective values (Schwaiger, 2004), can damage reputation and performance. While Roberts and Dowling (2002) find the correlation between reputation and performance to be negative, and others have found reputation to be influenced by performance (e.g. Deephouse, 2000; Fryxell and Wang, 1994), reputation appears to be an important part in understanding why some organizations outperform others, which is

fundamental to strategic management (e.g., Hitt, Boyd, & Li, 2004; Rumelt, Schendel, & Teece, 1994).

Firms and their stakeholders often rely on reputations when making decisions to avoid mistakes (Rhee, 2009; Dowling, 1993). For instance, reputation is important in choosing an exchange partner (Jensen and Roy, 2008), a joint venture partner (Dollinger et al, 1997), or a business school (Rindova et al, 2005). Furthermore, reputation is an important determinant of performance in professional services firms (Greenwood et al, 2005), and firms with relative good reputations are better able to sustain superior profit outcomes over time (Roberts and Dowling, 2002). Reputation influences the support of stakeholders in general towards the firm, leading to increasing or decreasing sales and profits (Gray and Balmer, 1998). A favorable reputation may enable a firm to increase its profits by charging premium prices (Milgrom and Roberts, 1986; Shapiro, 1983), attract investors (Certo, 2003; Lee, 2001) and attract better human resources (Turban and Greening, 1996; Rindova et al, 2005). Building on existing research, we replicate studies by further investigating the relation between reputation and performance, and will test the following hypothesis:

Hypothesis 2: Reputation will have a positive effect on company performance.

The uptake of management innovations, if perceived by external observers, can change the reputation of a firm (e.g. Rindova et al, 2005; Boyd, Bergh and Ketchen, 2009). Firms intending to compete on innovation may seek to gain competitive advantage by the timely uptake of new management practices (Birkinshaw, Mol and Hamel, 2008; Ahmadjian and Robinson, 2001). This tendency can lead to positive reputation effects through higher visibility and positive evaluation (Cho and

Hambrick, 2006; Rindova et al, 2005; Ocasio, 1997). Following the same logic, companies sometimes mimic actions in order to not appear dull-witted or left out (e.g. Westphal and Zajac, 1998). Occasionally these actions are not executed as announced – sometimes implementation may not be accomplished, at other times the announcement was a strategic ploy (e.g. vaporware). Such announcements are intended to create expectations as described by Shapiro and Varian (1999, p. 20) “the standard that is expected to become the standard will become the standard”, much like a self-fulfilling prophecy.

When a firm creates the association with one or more management innovations in order to change stakeholders’ perception, it engages in signaling. Reputation formation can be understood as a signaling process, in which the strategic choices of firms send signals to observers, and observers use these signals to form impressions of these firms (Basdeo et al, 2006; Rindova et al, 2005). These signals can come in many different forms and shapes, for instance through market actions (Clark and Montgomery, 1998; Ferrier, Smith and Grimm, 1999), through market signals (Fombrun and Shanley, 1990; Heil and Robertson, 1991), and through strategic communication (Rindova and Fombrun, 1999). Company actions can be symbolic, and can be mimicked for other than economic reasons, for instance to increase organizational legitimacy. Westphal and Zajac (1998) found that the stock market reacts positively to long-term incentive plan adoption, whether or not these plans are actually implemented. Such an appearance of conformity rather than actual conformity is often sufficient for gains in legitimacy (Oliver, 1991). Building on mimetic effects and signaling theory we contend that management innovations can be adopted and used in order to increase reputation. In order to understand such

reputational effects of the use of management innovations we focus on the most important institutional intermediaries, such as the media (Cho and Hambrick, 2006).

If an organization aims to increase its reputation by implementing and using innovative management techniques, its stakeholders must associate the company with these management innovations. Reputational gains can only be achieved if these stakeholders are actually reached and the information asymmetry between the company and its stakeholders is reduced so that the changed perception of the firm held by stakeholders yields improved reputation (Weigelt and Camerer, 1988; Rindova et al, 2005). Information asymmetry makes the media and other institutional intermediaries the more important for stakeholders' interpretation of the company. Firms can influence reputation by increasing the perceived quality of firms' management (e.g. by associating the firm with management innovation) and by spreading the reach (or prominence) of available information (Rindova et al, 2005). Therefore, the use of management innovations as well as the amount of media coverage a company receives on the use of management innovations should positively influence a company's reputation. Considering this, the following hypotheses will be tested:

Hypothesis 3: The use of management innovations will have a positive effect on corporate reputation.

Hypothesis 4: Media coverage on the use of management innovations will have a positive effect on corporate reputation.

Media interpretation

Actions that can increase or decrease competitiveness of companies are reported in the media (e.g. Busse, 2002), as a subset the use of management innovations is reported in the media. These media reports comment on what effects managerial actions (Busse, 2002; Arnold, Earl and North, 2007), in our case the use of management innovations, have on the companies that use them. These effects can be seen as positive, negative, or neutral. Carroll and McCombs (2003) propose that media coverage will influence the public perception of a firm. They propose that positive media coverage on a firm's attribute will make members of the public perceive that firm's attribute more positively. Negative media coverage will influence public perception negatively. The media interpretation of MI effects is therefore expected to have an effect on stakeholders' perception of the firm and thus on the firm's reputation. The following hypothesis is put forward to test this effect:

Hypothesis 5: Media interpretation of MI effects will influence corporate reputation.

METHODOLOGY

In order to test the hypotheses, a quantitative cross-sectional research will be done with the level of analysis being the organization.

Data Sources and Measures

Companies. The selection of companies that are included in this research is based on a number of criteria, mainly being likely to be observable and availability of financial data (Fombrun and Shanley, 1990). In order to have complete data on reputational ranking, we use Fortune's reputational ranking of 2007 in this study. Furthermore, because not all companies are publicly listed, not all financial data of these companies

is readily available. In order to gather complete data sets for the analysis, only companies of which financial data is available are included. Finally, complicating factors caused the exclusion of a number of companies a priori.² Of the total number of companies that met the abovementioned criteria, a systematic sample of 100 companies was taken to conduct the research so as to allow for sufficient sample size to employ statistical methods for analysis, which would not have been possible for a single or few selected industries. The list of included companies can be found in appendix A.

Media Coverage of Management Innovation. The measurement of management innovation presents a major challenge for researchers. Qualitative inference of a company's engagement in management innovations from interviews has problems of uncertain reliability and it is impractical for longitudinal analysis or anything beyond a small number of case studies. Surveys are often limited by low response rates from respondents who can answer most competently as for example executives in major companies are unlikely to participate (Cho and Hambrick, 2006; Chandy, 2003). This method is not suited to study past initiatives.

An alternative approach, which we take here, is to use automated text analysis of media reports to gauge use and attention patterns. Widely used in the social sciences, automated text analysis is based on the hypothesis that language reflects the categories in thinking and action (Sapir, 1944; Whorf, 1956). Frequently used keywords reveal what is on the users' mind; infrequently used words are peripheral, or even uncomfortable or alien (Huff, 1990). Content analysis of speeches by US

² Some companies had problematic names when searched for. An example is 'Target'. Because this name results in too many search results unrelated to the company itself, companies with similar problematic names were excluded. Finally, companies that merged or were split-up in the time-span of the research were excluded, because of problems with the use of old or new names in the media.

presidents (Emrich et al, 2001) and other public figures (Levi and Tetlock, 1980) have been used to measure cognitions, personalities. Numerous organizational studies have employed text analysis drawing mainly on published histories about firms, the letter to shareholders in annual reports of publicly traded companies (e.g. Ginsberg, 1988; Bowman, 1984; Abrahamson and Park, 1994; Clapham and Schwenk, 1991) or media reports (e.g. Busse, 2002; Scott Morton, 1997). Warren Buffet's letters that are closely followed by shareholders and carefully analyzed by the press and the wider investment community for insights into Buffet's thinking and behavior (Yadav et al, 2007), may be an extreme case. However CEOs take an active role in writing these letters and they have primary fiduciary responsibility for the statements made in the letters.

Focusing on media coverage that matters most to shareholders, markets and decision makers in businesses we measure use of management innovation based on reports in the media, which are among the most important institutional intermediaries that can influence reputation (Rindova et al, 2005). Financial newspapers and business magazines are known to report on company activities (Arnold et al, 2007; Scott Morton, 1997) such as the use of management innovations by companies. Similar to D'Aveni and MacMillan (1990) and Abrahamson and Hambrick (1997) we sought to measure the association to which a company is linked to management innovations. A list of more than 150 management innovations was compiled from the literature and used in this research. To develop our list of management innovations we went through several steps. First, we used key articles including articles that include management innovation in the title and were available through ABI/Inform and Proquest to generate a core list of management innovations. We added management innovations mentioned in relevant books such as Mol and Birkinshaw (2008). Then we turned to

the literature and identified frequently used synonyms of the key words. To enhance validity, we used five judges who are familiar with management innovations to consolidate the list. A list with included management innovations can be found in appendix B.

Using the ABI/Inform Global database, we conducted computer assisted text analysis in three different media, the Wall Street Journal, Business Week, and Time Magazine, aimed at (highly) specialized experts, professionals and the general public, in order to find daily and weekly media reports, which associate the use of management innovations the companies in our sample for the year 2007, Similar to Staw and Epstein (2000), we then counted each media report that mentioned a company using a management innovation. In this way we created a database with the number of times each of the companies was associated with a management innovation. The primary searches totaled 10.203 articles. In addition to the three-abovementioned sources, a combined data source, containing data of all three sources (corrected for the number of issues per source), is used.

The automatically identified associations need to undergo further scrutiny and selection. We read and carefully coded each article, to check for accuracy, and to capture how the media interpreted the effects of the management innovation, eliminating all articles that did not clearly express relationships between firms and management innovations. The final dataset consists of 419 of articles that contain valid links between management innovation and companies.

Our complete data set of media reports on the use of management innovations by the sample companies includes reports from The Wall Street Journal (WSJ), Business Week (BW) and Time Magazine (Time). WSJ showed the most articles on

management innovations by far, totaling up to 359. BW showed 54 hits, and Time showed 6 hits. These numbers should however not be seen without considering the number of issues available for each source per year. The WSJ publishes 357³ issues per year, BW 50⁴ issues, and Time 56⁵ issues. When considering this, the average number of reports on the use of management innovations per issue for the WSJ and BW are quite similar (1,01 and 1,08 respectively), while the average number of reports per issue for Time is considerably less (0,11).

The total number of distinct management innovations that was searched for in this research is 159. However, not every management innovation was reported on in the data sources. Out of the total number of management innovations, only 44 distinct management innovations resulted in one or more hits, leaving 118 management innovations insufficiently associated with the sample firms in our database. And when looking at the use of management innovations, out of the 100 companies that are included in this research, 62 were found to make use of one or more management innovations.

The management innovation that was mentioned most in the data sources (considering the number of issues per source) was joint venture. Joint venture accounted for 25,2% of the total number of hits, with alliance coming second, accounting for 16,9% of the hits, and consortium third with 9,9%. Per source small variations can be seen. The WSJ shows a total number of 39 distinct management innovations, with a top three containing joint venture (36%), alliance (11%), and conglomeration (11%). BW shows a total of 21 distinct management innovations, with a top three of Alliance

³ According to information given on the website of the Wall Street Journal.

⁴ According to information given on the website of Business Week magazine.

⁵ According to information given on the website of Time magazine.

(20%), franchising (11%), and joint venture (11%). Time shows 5 distinct management innovations, its number one being crisis management (33%).

The amount of media coverage for each company varies. An important cause for this variance is company size. Companies of substantial size are more likely to receive media coverage than smaller companies (Staw and Epstein, 2000). Therefore a correction is made for company size. Size will be measured by a normalized average of two measures for company size, being company sales and company assets.

Dividing the number of management innovation hits by the measure for company size will make this correction.

Reputation. Measuring reputation is not without challenges. Although the literature presents some academic reservations (Fryxell and Wang, 1994; Deephouse, 2000; Bromley, 1993; Brown and Perry, 1994), and, as other methodologies, there could be some bias, we decided to use the Fortune “America’s Most Admired Companies” ranking because the construction of the rankings is transparent, it does not include company performance as an input and previous studies have successfully measured corporate reputation using the same data (Staw and Epstein, 2000). Fortune 1.000 companies and top foreign companies operating in the U.S. are sorted by industry and the ten largest are then selected in each. Executives, directors, and analysts are asked to rate the companies in their own industry. The responders rank companies on eight attributes: (1) Quality of management, (2) Quality of products and services, (3) Innovation, (4) Long-term investment value, (5) Financial soundness, (6) People Management, (7) Social responsibility, (8) Use of corporate assets. An overall score is generated from the scores on these eight attributes. Reputational ranking scores for 2008, 2007 and 2006 will be used in this research. The 2008 data will be used to analyze the influence that various factors have on reputation, the 2007 data will be

used to analyze current reputation and its coherence with other factors, and the 2006 data will be used to analyze the influence that reputation has on various factors.

Performance. Using data taken from the Thompson One Banker database on companies' ROA, ROS and ROE we measured performance in four different ways. First, firm profitability was measured by return on assets (ROA). This was calculated as net income generated in the firm's primary industry divided by the firms' total assets. Second, return on sales (ROS) was calculated as operating income divided by net sales. Third, return on equity (ROE) was calculated as net income divided by total equity. Fourth, Staw and Epstein (2000) found high correlation between these measures and created a measure of overall financial performance. Recreating the measure for our sample, we aggregated the three performance indicators into one performance measure by normalizing each of these indicators and then taking the average of the three. Results of the four ways of measuring performance are shown below.

Analysis and control variables

This research will make use of various statistical methods in order to test the hypothesis. At first the bi-variant relations will be tested using bivariate correlation analysis. Possible interaction effects will be tested as well using partial correlation analysis. Next, distinct groups will be compared using independent samples T-tests. The groups that will be compared are (1) companies that use versus companies that do not use management innovations, (2) companies that have high versus companies that have low reputation, (3) companies that have high versus companies that have low media coverage on the use of management innovations, and (4) companies that use versus companies that do not use specific management innovations. When comparing high versus low reputation, the groups are divided using the reputational mean as cut-off point. When comparing high versus low media coverage, the companies that have

at least one mentioning of the use of a management innovation are included, and the groups are divided in the same way. When analyzing companies that use specific management innovations, all management innovations, that are used by at least two companies, are tested for differences in performance and reputation. After analyzing the distinct groups, regression analysis will be used to analyze causal effects. Both linear as well as non-linear regression analyses will be conducted. In the regression analyses, company size will be included as a variable, because company size may also have an independent influence on the dependent variables. Performance will be included as an independent variable in the regression analyses that do not already include performance as an independent variable or that have performance as dependent variable.

RESULTS

Correlations between the variables

The first step in the analysis is to study the correlations between variables. The results of the correlation analysis are shown in the correlation tables 1 and 2.

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The data on the use of management innovations (MI Use) and performance shows evidence that a relation exists. The results of the correlation analysis show a positive and significant relation between the use of management innovations and the performance index ($r = 0,197$; $p = 0,050$). Furthermore, a marginally significant

positive relation can be found between the use of management innovations and ROS ($r = 0,179$; $p = 0,074$). The other two performance measures show no significance. These results show some supporting evidence for hypothesis 1. Next the relation between reputation and performance is studied. The results show only one marginally significant positive relation between reputation (2006) and ROA ($r = 0,181$; $p = 0,072$). Therefore, at this stage, no supporting evidence for hypothesis 2 has been found yet. When the relation between the use of management innovations reputation (2008) is studied, a positive relation was found ($r = 0,196$; $p = 0,051$). And although the evidence is marginally significant, it is in support of hypothesis 3. For the amount of media coverage a company receives on the use of management innovations, evidence can be found with all except one of the data sources. The WSJ, the BW, and the combined data all show positive and significant relations ($r_{WSJ} = 0,363$; $p_{WSJ} = 0,000$; $r_{BW} = 0,252$; $p_{BW} = 0,012$; $r_{Combi} = 0,334$; $p_{Combi} = 0,001$). These results support hypothesis 4. Finally, the media interpretation of MI effects shows few significant relations. A significant correlation was found between positive media interpretation in the WSJ and reputation ($r = 0,303$; $p = 0,002$), while negative and neutral media interpretations had no significant relations ($r_{Negative} = 0,091$; $p_{Negative} = 0,368$; $r_{Neutral} = 0,151$; $p_{Neutral} = 0,134$). This gives only partial support for hypothesis 5.

Interaction effects

In addition to the correlations that were analyzed, we also studied the data to see whether there were interaction effects, i.e. whether the effect of one variable on the other goes through a third variable. These effects were tested for the relation between management innovations (use and media coverage) and reputation, and a possible interaction through performance, as is illustrated in figure 1. First the use of management innovations and the effect on reputation was controlled for performance.

A marginally significant positive relation between the use of management innovations and reputation exists ($r = 0,196$; $p = 0,051$). The size of this relation is not altered much when controlled for the performance index ($r = 0,206$; $p = 0,041$), for ROA ($r = 0,189$; $p = 0,061$), for ROE ($r = 0,205$; $p = 0,042$), or for ROS ($r = 0,222$; $p = 0,028$). Therefore the relation between MI Use and reputation can be considered autonomous.

INSERT FIGURE 1 ABOUT HERE

The same was done to test a possible interaction effect of performance in the relation between media coverage and reputation. The test was done separately for all of the media sources and all of the performance measures. The correlation between media coverage and reputation is positive and significant for the WSJ ($r = 0,363$; $p = 0,000$). When controlled for the performance measures, the relation can be considered to be autonomous ($r_{Performance} = 0,370$; $p_{Performance} = 0,000$; $r_{ROA} = 0,359$; $p_{ROA} = 0,000$; $r_{ROE} = 0,365$; $p_{ROE} = 0,000$; $r_{ROS} = 0,393$; $p_{ROS} = 0,000$). For the second data source, BW, the original correlation is positive and significant ($r = 0,252$; $p = 0,012$), and can also be considered autonomous ($r_{Performance} = 0,268$; $p_{Performance} = 0,007$; $r_{ROA} = 0,243$; $p_{ROA} = 0,015$; $r_{ROE} = 0,256$; $p_{ROE} = 0,011$; $r_{ROS} = 0,295$; $p_{ROS} = 0,003$). The third data source, Time, has a negative and non-significant correlation with reputation ($r = -0,114$; $p = 0,257$). This relation can be considered autonomous as well ($r_{Performance} = -0,111$; $p_{Performance} = 0,272$; $r_{ROA} = -0,119$; $p_{ROA} = 0,240$; $r_{ROE} = -0,111$; $p_{ROE} = 0,275$; $r_{ROS} = -0,100$; $p_{ROS} = 0,327$). The last data source, the combined data, has a positive and significant correlation with reputation ($r = 0,334$; $p = 0,001$). This relation is an

autonomous one as well ($r_{Performance} = 0,352$; $p_{Performance} = 0,000$; $r_{ROA} = 0,328$; $p_{ROA} = 0,001$; $r_{ROE} = 0,338$; $p_{ROE} = 0,001$; $r_{ROS} = 0,384$; $p_{ROS} = 0,000$).

Comparing distinct groups (general)

To further analyze the data, distinct groups of companies are isolated and compared to each other. First the use of management innovations is studied to see whether companies that use management innovations have higher performance and reputation than companies that do not use management innovations. The results of the independent samples T-tests show that there is a significant difference in performance between companies that use management innovations and companies that do not use management innovations. The difference is 0,782 in the performance index scale ($T_{Performance} = 1,988$; $p = 0,050$; $df = 98$). The other performance measures did not show significant results, although the difference found for the ROS (0,038) deserves some attention ($T_{ROS} = 1,804$; $p = 0,074$; $df = 98$). These results show some support for hypothesis 1. Next, differences in reputational scores are tested. The results show a small difference in reputational score. Companies that use management innovations have a slightly higher reputation, the difference being 0,15 in reputational score ($T_{Reputation} = 1,978$; $p = 0,051$; $df = 98$). This result supports hypothesis 3.

The next relation that is analyzed is that between reputation and performance. The data shows that there is a significant difference in performance between companies with relative high reputation in comparison to companies with relative low reputation. Companies that have a high reputation have a significant higher performance than companies that have a lower reputation according to three of the performance measures. For the performance index the difference is 0,84 ($T_{Performance} = 2,212$; $p = 0,029$; $df = 98$), for the ROA the difference is 0,036 ($T_{ROA} = 2,791$; $p = 0,029$; $df =$

98), and for the ROS data the difference is 0,053 ($T_{ROS} = 2,596$; $p = 0,11$; $df = 98$).

These results are in support of hypothesis 2.

The final relation that is analyzed is that of media coverage on the use of management innovations and reputation. The results show evidence for a difference in reputational score between the group with relative high media coverage and the group with relative low media coverage. Companies that have high media coverage on the use of management innovations have a significant higher reputational score. The difference is 0,33 according to the WSJ data ($T_{WSJ} = 2,805$; $p = 0,007$; $df = 57$), and 0,61 according to the BW data ($T_{BW} = 2,405$; $p = 0,025$; $df = 21$). These results give support for hypothesis 4.

Comparing distinct groups (per management innovation)

After comparing groups on general characteristics, we will now compare groups that do or do not make use of specific management innovations. All of the management innovations were tested and performance and reputational differences were compared.

When comparing the performance of these groups, the use of four specific management innovations was found to coincide with a significant higher performance. These management innovations are outsourcing, franchising, entrepreneurship, and alliances. Outsourcing was found to coincide with a higher performance with three of the four performance measures, for the performance index the difference is 1,62 ($T = 2,326$; $p = 0,022$; $df = 98$), for the ROA the difference is 0,057 ($T = 2,367$; $p = 0,020$; $df = 98$), and for the ROS the difference is 0,076 ($T = 2,028$; $p = 0,045$; $df = 98$). Companies that use franchising were found to have a higher performance than companies that do not, the difference being 1,27 for the performance index ($T = 2,242$; $p = 0,027$; $df = 98$), and 0,096 for the ROS ($T = 3,248$; $p = 0,002$; $df = 98$). For companies that use entrepreneurship the difference is 0,076

for the ROA ($T = 2,250$; $p = 0,027$; $df = 98$), and 0,11 for the ROS ($T = 2,142$; $p = 0,035$; $df = 98$). Finally alliances coincide with better performance for three of the four performance measures. The difference is 1,23 for the performance index ($T = 2,705$; $p = 0,008$; $df = 98$), 0,036 for the ROA ($T = 2,273$; $p = 0,025$; $df = 98$), and 0,083 for the ROS ($T = 3,471$; $p = 0,001$; $df = 98$).

Next the reputational scores of the groups are studied in order to find management innovations that are linked with a significant difference in reputation. As with performance, we found four management innovations that coincide with a significant higher reputation, being e-commerce, horizontal / vertical integration, franchising, and succession planning. For e-commerce the difference is 0,40 points in reputational score ($T = 2,522$; $p = 0,013$; $df = 98$), for horizontal / vertical integration the difference is 0,51 points ($T = 2,285$; $p = 0,024$; $df = 98$), for franchising the difference is 0,25 points ($T = 2,177$; $p = 0,032$; $df = 98$), and for succession planning the difference is 0,47 points ($T = 2,092$; $p = 0,039$; $df = 98$).

Regression Analysis

In order to analyze the degree to which the independent variables are predictors for change of the dependent variables, regression analysis is used. First the influence on performance is analyzed, than the influence on reputation.

INSERT TABLE 3 ABOUT HERE

To start we analyzed the influence on performance for both the use of management innovations and reputation. In these models company size is taken into account, as it

may have an independent influence as well. The results of the regression analyses for the use of management innovations show hardly any evidence that the use of management innovations explains a change in performance. The model in which the performance index is taken as independent variable shows a marginally significant explanatory value of the model ($R^2 = 0,049$; $p = 0,086$), while in this model the influence of management innovation use is significant ($B = 0,915$; $p = 0,029$). The other models show no significant results. Therefore, only marginal evidence for hypothesis 1 is found. For the influence of reputation on performance, the regression analyses show even less evidence. None of the models have been found to give a significant explanatory value, and reputation has no significant influence in all of the models. Therefore, the regression analysis shows no support for hypothesis 2.

INSERT TABLE 4 ABOUT HERE

Next, reputation is taken as dependent variable, and the influence of management innovations and media coverage is analyzed. In these regression models (models 4 through 7) company size and performance are included, as they may have an independent influence on reputation. The regression results show that the use of management innovations has an influence on reputation. The model shows a significant but small explanatory value ($R^2 = 0,081$; $p = 0,044$). This shows some support for hypothesis 3. Furthermore the influence of media coverage and media interpretation is analyzed. For media coverage significant results were found. The results of the regression analyses show that three of the four data sources show significant positive results ($R^2_{WSJ} = 0,146$; $p_{WSJ} = 0,002$; $R^2_{BW} = 0,088$; $p_{BW} = 0,030$;

$R^2_{Combi} = 0,138$; $p_{Combi} = 0,002$), which is in support of hypothesis 4. The media interpretation regression models show some evidence of an effect on reputation coming from the WSJ data. These results show a significant positive effect of positive media interpretation on reputation ($B = 0,184$; $p = 0,007$), while negative and neutral media interpretations have no effect ($B_{Negative} = 0,008$; $p_{Negative} = 0,949$; $B_{Neutral} = 0,004$; $p_{Neutral} = 0,635$). This is the only data source of which the model has a significant explanatory value ($R^2 = 0,141$; $p = 0,013$), which gives only some supportive evidence for hypothesis 5.

DISCUSSION AND CONCLUSION

It is widely accepted that management innovations hold economic benefits for the firm. However empirical evidence on this relation is lacking. Furthermore, in addition to economic benefits, management innovations can hold more than just economic benefits for the firm, a reputational effect is expected as well. The results of this research give evidence that management innovations have a positive relation with both performance and reputation.

Reputation

Using new research methods, the effect of management innovations on corporate reputation has been studied. The findings build on previous research from Staw and Epstein (2000). However, the results of this research go further than studying the association with management innovations. By using a broad range of management innovations and by establishing the actual use of these management innovations, this research shows that the use of management innovations has a positive effect on corporate reputation. The association with management innovations that are new to

the firm and not necessarily new to the industry or revolutionary (e.g. Birkinshaw, Mol and Hamel 2008) has positive effects.

In addition to the use of management innovations, this study has established that the amount of media coverage on the use of management innovations has a positive effect on reputation. Therefore we can say that institutional intermediaries, of whom the media is an important one, play a significant role in reputation building when considering a company's use of management innovations. More interesting in this regard is the quality of the media reports, i.e. the interpretation by institutional intermediaries of the consequences that management innovation use have on the organization. Both neutral, just the mentioning of, and negative media interpretations of the effects of management innovations do not have an effect on reputation.

Noteworthy is that negative reports do not seem to have negative effects. Only the positive media interpretations have a positive significant effect. A nuance can thus be made about the role that the media play, where positive media reports have almost the same effect as the entire amount of media attention, i.e. positive, neutral, and negative reports, a company receives about management innovations. While the attention generated is important (Ocasio 1997) we find that the quality of attention matters more, if it is positive. And although the evidence to support this conclusion might not be overwhelming, further research is needed to investigate the nuances of the attention-based theory and the effects of specific management innovations on reputation.

As previous studies have shown, reputation can be influenced by performance. Our findings however show no signs that a causal effect exists between performance in one year and an increase in reputation in the following year. As many of these previous studies rely on correlation analysis between performance and (mostly)

Fortune data on reputation of the same year or make use of longitudinal data on performance and reputation, the results from our dataset can be explained as being too limited to argue counter wise. Altogether our findings show that the use of management innovations is one of many factors that can influence reputation. Some of these factors might be out of the control of a company. Recent research focuses, for instance, on reputational spillover effects within networks (Yu and Lester, 2008).

Performance

In addition to an effect on reputation, management innovations have an effect on organizational performance. The data provides evidence that the use of management innovations has a positive effect on performance, albeit modest. So, as many scholars hypothesized and conceptualized, and only few empirically found, this research supports the view that management innovations indeed hold economic benefits for the firm. The intuition that the actual use of various management innovations should improve organizational performance is strong, because they aim at improving the organization and its processes. And although a direct link between management innovations and performance might not always be visible, an indirect effect can take place, because an organization that makes use of management innovations is an organization that is actively trying to improve itself and its processes. And this climate of progression, improvement, and innovation might be a key factor that makes the organization outperform its rivals (Nicholson et al, 1990). There are several possible reasons why the significant relationship is not strong. These findings do not consider the amount of management innovations, it says something about companies that use management innovations, be it one or be it ten different ones. Another reason may be that the time lag in our research is not entirely adequate to capture the full

benefits of management innovation on performance, which are likely to accrue over longer periods and could be long lived compared to attention by the press.

In this research, two main perspectives on the adoption of management innovations exist in the literature, the institutional perspective and the rational-economic perspective. Birkinshaw et al (2008) propose a classification of views on management innovation adoption. In their article, Birkinshaw et al (2008) put forward four main perspectives: (1) an institutional perspective, in which institutional conditions are researched; (2) a fashion perspective, in which supply and demand for new management ideas are researched, which is in line with the perspective put forward by Abrahamson (1991); (3) a cultural perspective, in which cultural conditions inside an organization are researched; and (4) a rational perspective, in which the role of managers is researched. Furthermore, recent research has also focused on factors that are beyond the control of organizations or even humans, such as memetics (O'Mahoney, 2007), to explain the diffusion of management innovations. O'Mahoney (2007) suggests that the 'inside' or the 'genes' of the management innovation must be understood as well as its outside, its environment, in order to have insights in diffusion patterns. Following these and other suggestions in the rapidly developing literature on management innovation (e.g. Hamel, 2009) future research can explore further the broader context (Abrahamson, 1996; Birkinshaw et al, 2008) in which organizations are embedded and their experimentation with management innovation is influenced.

Implications

Engaging with practices, tools and methods that are new to firms is challenging yet important part of management reality. But there are difficulties in knowing how management innovations will actually benefit an organization, as organizations have

different characteristics and different needs. This research provides empirical evidence that management innovations contribute to both organizational performance and corporate reputation. An important take away for practitioners in management is the role of institutional intermediaries, such as the press, for effectuating management innovations' influence on reputation. The importance of the media can be seen as the perception of the firm held by stakeholders, and institutional intermediaries are important for stakeholders in creating their perception of the firm (Chun, 2005). Our research shows that although media coverage on an organization's initiative to innovate, i.e. engage with new practices, tools and methods, plays an important role, positive interpretation of media reports are even more important. Therefore, media coverage may matter but management should amplify positive results in their communications to attain positive media reports and to take into account the context within which media interpret facts. The latter points to the institutional influences on interpretation including the more external fashions and fads (e.g. Abrahamson 1996) and the organization's cultural readiness for change and the rhetoric to promote change (e.g. Zbaracki 1998). While the influence of such macro and micro institutions warrant more research, this paper focused on two complementary views on management innovations and provides evidence for the importance of both a rational-economic view and an institutional view on management innovation. Management innovations can contribute to both organizational performance and corporate reputation, and can therefore offer dual-benefit to organizations.

LIMITATIONS AND FUTURE RESEARCH

When looking at the data, a number of limitations can be indicated. The sample of companies that are included in the research has its limitations, as it is limited to

companies that are included in the Fortune rankings. Companies that are included in the Fortune rankings are usually leading companies in their industry, which will most likely mean that these companies already have good reputations. This can be seen in the range in the narrow range of reputational scores.

The reliability of the reputation measure, Fortune Magazine's America's Most Admired Companies, has been discussed in the literature. The measure has been used in academic research (Staw and Epstein, 2000; Ang and Wight, 2009), and has been criticized in the literature as well (Fryxell and Wang, 1994; Deephouse, 2000).

Reputation remains a difficult construct to measure, depending on the manner in which reputation is approached and defined. Many measures exist, depending on the academic background of the researcher, such as ranking measures, brand equity scales, image measures, identity measures, and multiple stakeholder reputation measures (Chun, 2005). Chun (2005) further mentions that better understanding and valid measures of the construct are needed in order to further build the reputation discipline.

The management innovation data that is gathered from three different media also holds its limitations. Of the three data sources used, only two seem to be reliable, the WSJ data and BW data. The third data source, the Time data, has provided only a small number of reports on the use of management innovations.

This study uses a cross-sectional methodology to test the hypotheses. The use of a cross-sectional approach gives the opportunity to make the first step in contributing to the literature by examining what relations exist. In order to further build the literature and contribute to management practice, a longitudinal study should be conducted. In this way more insights can be found on the effect that the use of management

innovations have on performance and reputation. Reputation is built through the years, in which consistent behavior is an important factor (Gray and Balmer, 1998). A longitudinal study on this research topic can give insights in how consistency in the adoption and use of management innovations influences performance and corporate reputation.

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Table 1. Correlations between variables 1.

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1 Reputation (2008)	7,129	0,388										
2 Reputation (2006)	7,129	0,560	0,428**									
3 Performance	2,707	1,936	-0,030	0,117								
4 ROA	0,080	0,067	0,067	0,181	0,901**							
5 ROS	0,137	0,104	-0,114	0,089	0,719**	0,552**						
6 ROE	0,169	0,191	-0,043	0,007	0,782**	0,589**	0,249*					
7 MI Use	0,620	0,488	0,196	0,269**	0,197*	0,146	0,179	0,154				
8 MI Coverage (WSJ)	2,960	5,509	0,363**	0,109	0,122	0,103	0,181	0,022	0,423**			
9 MI Coverage (BW)	0,346	1,278	0,252*	0,112	0,251*	0,273**	0,266**	0,074	0,213*	0,405**		
10 MI Coverage (Time)	0,028	0,130	-0,114	-0,223*	0,123	0,065	0,143	0,099	0,169	0,214*	0,088	
11 MI Coverage (combined)	0,786	1,763	0,334**	0,114	0,244*	0,247*	0,281**	0,070	0,351**	0,746**	0,908**	0,224*

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 2. Correlations between variables 2.

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1 Reputation (2008)	7,129	0,388												
2 WSJ (negative)	0,140	0,427	0,091											
3 WSJ (neutral)	3,150	6,924	0,151	0,663**										
4 WSJ (positive)	0,300	0,659	0,303**	0,388**	0,504**									
5 BW (negative)	0,030	0,171	-0,025	0,356**	0,141	0,098								
6 BW (neutral)	0,330	1,111	0,186	0,285**	0,407**	0,305**	0,160							
7 BW (positive)	0,180	0,520	0,159	0,386**	0,537**	0,371**	0,165	0,631**						
8 Time (negative)	0,010	0,100	-0,070	0,203*	0,187	0,261**	-0,018	-0,030	-0,035					
9 Time (neutral)	0,030	0,171	-0,066	0,494**	0,422**	0,277**	-0,031	0,107	0,392**	-0,018				
10 Time (positive)	0,020	0,200	-0,023	0,203*	0,100	0,107	0,571**	0,152	0,159	-0,010	-0,018			
11 Combi (negative)	0,059	0,223	-0,023	0,622**	0,360**	0,283**	0,856**	0,187	0,216*	0,441**	0,101	0,489**		
12 Combi (neutral)	0,798	1,799	0,190	0,575**	0,826**	0,483**	0,172	0,846**	0,712**	0,081	0,378**	0,146	0,318**	
13 Combi (positive)	0,240	0,616	0,173	0,443**	0,557**	0,494**	0,320**	0,622**	0,946**	0,007	0,367**	0,440**	0,367**	0,716**

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Figure 1: The interaction effect of performance.

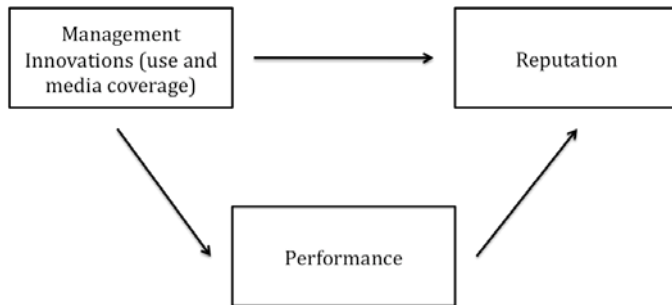


Table 3. Regression models 1 through 3, with performance as dependent variable.

	Model 1				Model 2				Model 3			
	Perf. Index	ROA	ROE	ROS	Perf. Index	ROA	ROE	ROS	Perf. Index	ROA	ROE	ROS
Constant	2,774 (0,000)	0,087 (0,000)	0,158 (0,000)	0,141 (0,000)	2,340 (0,000)	0,074 (0,000)	0,130 (0,000)	0,120 (0,000)	-0,157 (0,950)	-0,072 (0,397)	0,149 (0,547)	0,021 (0,878)
Size	-0,047 (0,720)	-0,005 (0,286)	0,008 (0,542)	-0,003 (0,693)	-0,141 (0,302)	-0,008 (0,107)	0,002 (0,887)	-0,007 (0,313)	-0,056 (0,671)	-0,005 (0,236)	0,008 (0,547)	-0,003 (0,656)
MI Use					0,915 (0,029)	0,027 (0,060)	0,058 (0,159)	0,045 (0,045)				
Reputation									0,413 (0,239)	0,023 (0,062)	0,001 (0,971)	0,017 (0,367)
R square	0,001	0,012	0,004	0,002	0,049	0,047	0,024	0,042	0,016	0,047	0,004	0,010
R sq. Adj.	-0,009	0,002	-0,006	-0,009	0,030	0,028	0,004	0,023	-0,005	0,027	-0,017	-0,010
Sig.	0,720	0,268	0,542	0,693	0,086	0,096	0,307	0,123	0,468	0,098	0,831	0,614

Table 4. Regression models 4 through 7, with reputation as dependent variable.

	Model 4	Model 5	Model 6				Model 7			
			WSJ	BW	Time	Combi	WSJ	BW	Time	Combi
Constant	7,191 (0,000)	7,118 (0,000)	7,129 (0,000)	7,203 (0,000)	7,188 (0,000)	7,176 (0,000)	7,190 (0,000)	7,210 (0,000)	7,188 (0,000)	7,207 (0,000)
Size	-0,030 (0,254)	-0,054 (0,051)	-0,024 (0,343)	-0,033 (0,200)	-0,027 (0,306)	-0,031 (0,221)	-0,060 (0,031)	-0,046 (0,110)	-0,028 (0,305)	-0,052 (0,068)
Performance	-0,007 (0,734)	-0,019 (0,360)	-0,016 (0,414)	-0,021 (0,298)	-0,004 (0,832)	-0,025 (0,212)	-0,018 (0,368)	-0,019 (0,365)	-0,004 (0,831)	-0,019 (0,363)
MI Use		0,221 (0,010)								
MI Coverage			0,026 (0,000)	0,086 (0,006)	-0,300 (0,328)	0,080 (0,000)				
Positive							0,198 (0,003)	0,105 (0,297)	-0,014 (0,944)	0,098 (0,291)
Neutral							0,004 (0,635)	0,051 (0,269)	-0,126 (0,591)	0,037 (0,227)
Negative							0,008 (0,949)	-0,043 (0,856)	-0,257 (0,521)	-0,108 (0,569)
R square	0,014	0,081	0,146	0,088	0,024	0,138	0,141	0,072	0,021	0,087
R sq. Adj.	-0,006	0,052	0,119	0,060	-0,006	0,111	0,096	0,023	-0,031	0,038
Sig.	0,498	0,044	0,002	0,030	0,502	0,002	0,013	0,208	0,840	0,122

APPENDIX A

The following companies are included in this research:

- Abbott Laboratories
- Adobe Systems
- Aetna
- Alcoa
- Apache
- Applied Materials
- Arrow Electronics
- AutoNation
- Becton Dickinson
- Bemis
- Best Buy
- Boeing
- Bunge
- Cardinal Health
- CarMax
- Caterpillar
- CBRL Group
- Chubb
- Cisco Systems
- Coca-Cola
- Colgate-Palmolive
- Comcast
- Continental Airlines
- Convergys
- Corning
- Devon Energy
- DST Systems
- Duke Energy
- Dun & Bradstreet
- DuPont
- Eli Lilly
- EMC
- Emerson Electric
- Enbridge Energy Partners
- Exelon
- Fluor
- FPL Group
- Genentech
- General Mills
- Goodyear Tire & Rubber
- Google
- Hartford Financial Services
- Henry Schein
- Hewlett-Packard
- HNI
- Home Depot
- Illinois Tool Works
- Ingram Micro
- Intel
- Intuit
- Iron Mountain
- J.C. Penney
- Johnson & Johnson
- Johnson Controls
- KB Home
- Kroger

- Legget & Platt
- Lowe's
- Manpower
- Martin Marietta Materials
- McKesson
- Medtronic
- MGM Mirage
- News Corp.
- Polo Ralph Lauren
- Publix Super Markets
- Qualcomm
- Safeway
- Seagate Technology
- Sealed Air
- Simon Property Group
- Smith International
- Staples
- Starbucks
- Stryker
- Sysco
- Texas Instruments
- United Natural Foods
- United Technologies
- UnitedHealth Group
- USG
- Verizon Communications
- VF
- Vornado Realty Trust
- W.W. Grainger
- Walgreen
- Washington Mutual
- Nike
- Nucor
- Occidental Petroleum
- Owens Corning
- Pactiv
- Peabody Energy
- PepsiCo
- Pilgrim's Pride
- Washington Post
- WellPoint
- Wells Fargo
- Weyerhaeuser
- YRC Worldwide

APPENDIX B

Management innovations as follow are included in this research:

- 360-degree feedback process
- Activity value analysis
- Activity-based costing
- Adaptive enterprises
- Agile strategy
- Alliances / Strategic alliances
- Artificial intelligence
- Assessment centers
- Attention management
- Balanced scorecard
- Benchmarking
- Brand management
- Business education
- Business modeling
- Business Process Re-engineering
- Cannibalization
- Capital budgeting
- Cellular manufacturing
- Centralization / Decentralization
- Centres of excellence
- Resource-based strategy
- S-curve
- Scenario planning
- Scientific laboratory
-
- ...
- Socio-technical systems
- Spans of control
- Statistical Quality Control
- Strategic alignment
- Strategic business units
- Strategic planning
- Succession planning
- Supply chain management
- SWOT
- Synergy
- Systems dynamics
- T-groups
- Technology transfer
- Theory X / Theory Y/ Theory Z
- Time-based competition
- Total Quality Management
- U-form
- Value chain
- Value disciplines
- Value migration
- Value proposition
- Virtual organizations
- War for talent
- Work Out groups
- Yield management
- Zero-based-budgeting

