CHASING THE HOTTEST IT: EFFECTS OF INFORMATION TECHNOLOGY FASHION ON ORGANIZATIONS

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ABSTRACT

An information technology (IT) fashion is a transitory collective belief that an IT is new, efficient, and at the forefront of practice. I find that following IT fashions can legitimize organizations and their leaders even in the absence of performance improvement. Hence fashion is an alternative basis for organizational legitimacy.

INTRODUCTION

What happens to organizations that chase the hottest information technologies? Despite wide recognition of and often laments on the faddishness of IT practice (and our own academic community's research agenda), little is known about the fashion phenomenon in IT. In this study I define an IT fashion as a transitory collective belief that an information technology is new, efficient, and at the forefront of practice. When such a belief is prevalent for an IT, the technology can be described as "in fashion." Coming into fashion, though, does not imply that the technology is without enduring practical merit. Technologies with lasting utility, some short-lived benefits, or little value are all subject to the swings of fashion. Several recent studies have just begun to examine the fashion phenomenon in IT (e.g., Newell, Swan, & Robertson, 1998; Wang & Ramiller, 2004). However, these pioneering studies were primarily focused on the development and evolution of the fashion phenomenon in IT. They fell short of demonstrating the impact of fashion on key organizational outcomes. Accordingly, this study examines some of the important organizational consequences of IT fashion. Specifically, I drew a sample of 109 Fortune 500 companies. Using data collected from published discourse and annual corporate IT budgets, I examined the extent to which firms in the sample associated themselves with and invested in fashionable IT innovations over a decade. As will be presented below, the findings offer strong support for an institutional explanation of IT diffusion, illustrating that following fashion can legitimize organizations and their leaders even in the absence of performance improvement. The findings also extend institutional theory from its usual focus on taken-for-granted practices to transitorily fashionable innovations as a novel source of social approval.

THEORIES

Central to research on the diffusion of innovations (Rogers, 1995) is the question – why do organizations adopt innovations? Among the numerous attempts to answer this question, there are two main schools of thought. On the one hand, scholars from the economic-rationalistic

perspective argue that organizations recognize performance problems and then search and adopt innovations to solve the problems efficiently, thus improving performance (Cyert & March, 1992). On the other hand, researchers from the institutional perspective contend that organizations adopt innovations that are taken for granted as legitimate practices in order to maintain and improve organizational legitimacy, regardless of the innovations' actual impact on the performance of particular organizations (Meyer & Rowan, 1977). Recent research has shown that, in an innovation's early diffusion, organizations adopt it to improve performance, and in an innovation's later diffusion, organizations adopt it to pursue legitimacy (Tolbert & Zucker, 1983). Although this performance-and-then-legitimacy-driven diffusion theory has received much support in empirical studies, the theory is ambiguous as to what happens in the middle: When an innovation moves from its early diffusion toward institutionalization, does the pursuit of performance or quest for legitimacy drive organizations to adopt the innovation? In fact, the middle phase is often crucial to technological innovations. Many cases show that innovations with suboptimal efficiency in enhancing performance (e.g., David, 1985) come to be widely accepted and institutionalized. Management scholars have recently developed management fashion theory to explain the role of fashion in an innovation's middle phase of diffusion (Abrahamson, 1996).

Management Fashion and IT Fashion

Management fashion theory provides a novel explanation of an innovation's mid-career. According to this theory, idea entrepreneurs (e.g., consultants, gurus, journalists, and academics) compete in a market for providing management knowledge. They identify and highlight widespread problems with organizational performance, or so-called "performance gaps" – the difference between the performance level managers aspire to and the level they actually achieve. They sense managers' demands for new management techniques and produce discourse to articulate ideas that promote the use of certain techniques to help narrow the performance gaps. When discourse converges on a technique, a dramatic surge of media coverage and the ensuing managerial attention and interest will create a management fashion – a relatively transitory collective belief that a management technique is new, efficient, and at the forefront of management practice (Abrahamson, 1996). This belief generates increasing pressure on every organization to adopt the innovation, because organizational stakeholders expect managers to employ modern and efficient techniques to manage their organizations (Meyer & Rowan, 1977). The more organizations adopt the innovation, the stronger the collective belief. Then even more organizations will adopt. Consequently, "certain innovations may garner managerial attention and organizational adoption out of all proportion to the ultimate benefits flowing from their actual use" (Fichman, 2004: 327-328).

The description of management fashion should sound familiar when it comes to the diffusion of IT innovations. On the one hand, numerous idea entrepreneurs compete in the market for providing IT knowledge by producing voluminous discourse to promote various IT or IT-enabled innovations through a host of outlets. On the other hand, executives and IT managers are characteristically on the lookout for the next big thing to help their organizations perform and compete. Every now and then idea entrepreneurs' discourse converges on an IT innovation. Be

it ERP or SOA (service-oriented architecture), each innovation enjoys an instant fame and attracts tremendous managerial attention and interest, which in turn generate a transitory collective belief that an information technology is new, efficient, and at the forefront of practice – the IT innovation comes into fashion! Organizations seeking new, efficient, and cutting-edge IT thus adopt the fashionable innovation, a course of action often pejoratively depicted as "jumping on the bandwagon." However, the hype associated with every IT fashion will soon reach the point where the expectation of the benefits the innovation will bring is inflated beyond the capabilities of the innovation. Unfulfilled promise generates backlash, which quickly drives the IT innovation out of fashion and sends it to the "trough of disillusionment." This dramatic "hype cycle," originally sketched by Gartner, plausibly depicts the fashion phenomenon in the world of IT (Linden & Fenn, 2003).

Thus far, IT fashion research has focused on the emergence and evolution of IT fashions (e.g., Wang & Ramiller, 2004). To understand why organizations engage with IT innovations in fashion, and to establish fashion theory as a valid explanation of the middle phase of innovation diffusion, research must investigate the impacts of organizational engagement with IT fashions.

Engagement with IT Fashions

When a transitory collective belief is prevalent that an IT innovation is new, efficient, and at the forefront of practice, the IT is in its "fashion period" and thus can be described as "in fashion." For the purpose of this paper, I focus on organizational engagement with the IT innovation during its fashion period. An organization's engagement with an IT fashion is the establishment of a *material* or *informational* relationship between the organization and the IT innovation in fashion. Material engagement with an IT in fashion refers to the adoption, implementation, and utilization of the IT. Informational engagement, in contrast, involves the activities of informing stakeholders that organizations are associated with IT in fashion.

Fashion Effect on Legitimacy. Organizations considered legitimate not only enjoy social approval, but also gain access to resources, increasing their chances of survival and growth. In contrast, organizations lacking legitimacy are likely to disappear (Aldrich & Fiol, 1994). Meyer and Rowan (1977) noted that organizations seek legitimacy by incorporating practices that match widely accepted cultural models embodying common beliefs. Management fashion theorists argue that an important common belief in an organization's environment is the belief that certain innovations are efficient and at the forefront of practice, even though these innovations have not yet been widely adopted. Staw and Epstein (2000) found that firms engaging with TQM in its fashion period (the first half of the 1990s) significantly augmented their reputation in the eyes of external stakeholders. In investigating the effects of IT fashions on organizational legitimacy, I raise the first two hypotheses:

H1: *Organizations gain in reputation when informationally associated with IT in fashion.*
H2: *Organizations gain in reputation when they adopt and implement IT in fashion.*

An organization's engagement with innovations in fashion may not only increase its external legitimacy, but also raise the internal legitimacy of the organizational leaders who make the key decision to engage with fashionable innovations. Indeed, Staw and Epstein (2000) found that firms' both informational and material engagement with management fashions had significant,

positive effects on CEO (chief executive officer) compensation, even absent any effect on firm performance. For IT fashions, one might make a similar argument that CEOs (chief executive officers) engage in trendy IT. Accordingly, I raise another two hypotheses.

H3: Organizational leaders are compensated more when their organizations are informationally associated with IT in fashion.

H4: Organizational leaders are compensated more when their organizations adopt and implement IT in fashion.

Fashion Effect on Performance. An organization's informational link to IT in fashion should have no direct effect on performance. According to Pfeffer and Sutton (2000), because performance is an outcome of what people in the organization *do*, not of what they say or know, information or knowledge about how to improve performance needs to be turned into material actions and it is these actions that actually improve performance. Nonetheless, when an organization's engagement with fashionable innovations becomes material, the relationship between material engagement with fashions and performance stands at the center of the debate among organizational theorists. On the one hand, it has been argued that organizations' quest for legitimacy often conflicts with their pursuit of economic performance and thus the two activities should better be decoupled (Meyer & Rowan, 1977). Accordingly, any particular organization's legitimacy seeking activities such as its adoption and implementation of fashionable innovations would draw resources away from performance-enhancing activities. On the other hand, a positive effect of fashion on performance seems plausible because, in the jungle of innovations that range from revolutionary breakthroughs to snake oils, organizations may try on many fashionable innovations and retain what prove to enhance performance. Thus, I raise a pair of competing hypotheses:

H5a: Adopting and implementing IT in fashion leads to lower organizational performance.

H5b: Adopting and implementing IT in fashion leads to higher in organizational performance.

METHODS

To test these hypotheses, I drew a sample of 109 companies according to the following criteria. First, they appeared on the *Fortune* 500 list between 1994 and 2003 at least five times. Second, the company names survived mergers, acquisitions, or divestitures during the same period. Third, data on these companies (as described below) can be obtained. Firms in the sample, belonging to fourteen industries, had average total assets of approximately US$36 billion and average net annual sales of US$16 billion.

Working with ten senior IT practitioners and professors, all having at least 20 years of experience in IT practice or research, I have identified eight IT innovations that came into fashion at various points of time between 1993 and 2002. I counted articles on each innovation indexed each year in the ABI/Inform Global database and plotted the article counts for each innovation as a wave-like curve. I operationalized the fashion period notion with the last third of the upswing phase of the discourse curve. For example, the upswing of the ERP discourse curve lasted for about nine years from 1991 to 1999. Therefore, ERP's fashion period is 1997-99.

Independent Variables. Two measures were used to indicate firm's engagement with IT fashions: association with IT fashions (for informational engagement) and investment in IT

fashions (for material engagement). Specifically, in ABI/Inform and the 50 largest U.S. newspapers indexed by Dow Jones' Factiva, for each year I recorded the number of articles that mentioned both the name of a company in the sample and any of the 8 IT innovations if the innovation was in its fashion period that year. This yearly article count was then divided by the total number of articles that mentioned any IT innovations in fashion that year, so as to factor out the variation in the volume of IT fashion discourse from year to year. The result was further divided by firm size, measured as the average of normalized sales and assets. To measure these firms' material engagement with IT fashions, I collected data on each firm's budgeted spending/investment in each of the IT innovations in its fashion period from the annual IT spending surveys conducted by the International Data Group (IDG).

Dependent Variables. Corporate reputation and executive compensation were used as measures for external legitimacy and internal legitimacy (respectively). I retrieved the reputation scores for the sample companies from *Fortune*'s "America's Most Admired Companies" lists from 1993 to 2002. Executive compensation is measured by the CEO's salary and bonus, retrieved from COMPUSTAT's Execucomp database. Following Staw and Epstein (2000), I measured firm performance by the summation of normalized return on assets (ROA), return on equity (ROE), and return on sales (ROS). These data also came from COMPUSTAT.

Control Variables. Firm size was included in all regression equations as a control variable. In addition, industry performance was used as a control variable in models predicting firm performance, which itself is a control variable for corporate reputation. For executive compensation, I also included corporate reputation in all regression models predicting CEO pay. Other control variables included previously well-researched predictors such as board size, CEO tenure, proportion of inside directors, and whether the CEO was also chair of the board. Further, to control for other possible effects varying according to time and the industries and geographic region in which the organizations operate, I included dummy variables for the years, the sample firms' primary industries, and the regions of their headquarters in all regression equations. All models were estimated with the multiple regression procedure in Stata.

RESULTS

Organizational Legitimacy. I ran nine regression analyses to examine the effect of IT fashions on corporate reputation, the indicator of external legitimacy. The dependent variable was lagged one year, two years, and three years behind all independent and control variables. All models included the control variables. The results show that both association with and investment in IT fashions in year t-1 were significantly and positively associated with corporate reputation in year t and that each variable explained a significant amount of variance beyond that of the other independent and control variables. In contrast, neither association with nor investment in IT fashions had significant effect on corporate reputation two or three years later, suggesting that the effect of fashions on corporate reputation disappeared after a year. A similar set of regressions was run on executive compensation, the indicator of internal legitimacy. Besides the effects of control variables, the results show that both association with and investment in IT fashions in year t-1 were significantly positively correlated with the CEO pay in year t. Again, each independent variable explained a significant and unique portion of the

variance in the executive compensation. As the fashion effect on corporate reputation disappeared after one year, the fashion effect on CEO pay also vanished.

Organizational Performance. Then I did another series of regression analyses to investigate the effect of IT fashion on organizational performance, measured by a normalized average of returns on sales, equity, and assets. The results shows that association with IT fashions in discourse had negative effects on performance one and three years later, but the effect was not statistically significant. In contrast, firm performance in year t was negatively correlated with firms' actual investment in fashionable IT in year t-1, largely uncorrelated with the investment in year t-2, but was positively correlated with the investment in year t-3.

In sum, first, firms associating themselves more frequently with and investing more in fashionable IT innovations tended to have increased reputation and CEO compensation the next year. These positive effects support hypotheses 1-4. Second, however, the positive effects of IT fashions on corporate reputation and CEO compensation disappeared after a year. Third, firms strengthening their informational association with fashionable IT innovations did not increase or decrease economic performance. Finally, firms investing more in fashionable IT innovations tended to have lower economic performance the next year and higher performance in three years. Therefore, hypotheses 5a and 5b, which suggest opposite relationships between IT fashions and organizational performance, are both supported, but in different timeframes.

CONCLUDING DISCUSSION

When organizations engage with the hottest IT, they bear the impact of fashion. Specifically, when firms associate their names with fashionable IT in the press or invest in these technologies, in the short term they are more admired and their chief executives are compensated more. However, mere association with IT fashions does not lead to better economic performance at any time. In contrast, investment in fashionable IT leads to lower performance in the short term and then better performance in the longer term. This ten-year study of 109 large U.S. firms' engagement with eight IT innovations demonstrates that the fashion phenomenon in IT matters to key organizational outcomes.

Institutional theory holds that pressures for legitimacy lead organizations to follow institutionalized rules, expectations, and norms, which often direct attention away from task performance (Zucker, 1987). The findings here support an institutional explanation for the middle phase diffusion of IT innovations. Tests of institutional theory in the context of innovation diffusion, however, traditionally focused on the later phase where innovations have already been widely accepted and taken for granted. This study, instead, provides evidence that the legitimacy-driven diffusion begins well before the later phase (Swanson & Ramiller, 1997) and that fashion is the mechanism underlying such institutional process. Instead of deriving from taken-for-granted practices, legitimacy stems from fashion, the collective belief that an innovation is new, efficient, and at the forefront of practice, regardless of what the destiny of the innovation eventually turns out to be. Unlike institutionalized practices that may serve as a relatively enduring basis for legitimacy, fashion is a temporary source of legitimacy because the collective belief of what's new, by its own nature, is transitory and fast changing. However, fashion-induced legitimacy is apparently ephemeral.

Practically speaking, IT fashions do bring better reputation to organizations and higher pay to their leaders in the near term and greater performance in the longer term. Therefore, practitioners should include both legitimacy and performance in their calculation of the return on IT investment and prioritize their objectives accordingly. When gains in social approval outweigh shortfalls in economic performance, engaging in the hottest IT may be a sensible course of action, as long as organizational leaders understand the dynamic interaction between IT fashions and organizational outcomes that this study seeks to reveal. Further, unlike fashionable administrative techniques that are often rejected or abandoned for lack of utility, fashionable IT innovations seem to have benefited organizations in the long run. This observation suggests that IT knowledge entrepreneurs are skillful in selecting the efficient innovations to promote or IT practitioners are capable of extracting value after adopting fashionable innovations by expanding and extending their use. To improve the understanding and advance of these important skills and capabilities, scholars should continue and sustain the research program on IT fashion.

REFERENCES AVAILABLE FROM THE AUTHOR