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IT Fashion and AI in Organization

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**ABSTRACT**

Information technology development has been highly related to organizational innovation and business development. Information technology fashion reflects the organizational IT adoption and its business innovation capability. Based upon the theory of management fashion (Abrahamson 1996), this research explores information technology fashion from the internal and external perspectives. In particular, we propose a theoretical model to examine how organizational dynamic capability impacts information technology fashion which furthermore shapes the organizational performance. Accordingly, we propose 5 hypotheses that are to be empirically investigated in the future.

**KEYWORDS:** Management Fashion, IT Fashion, Dynamic Capabilities, Artificial Intelligence

**INTRODUCTION**

Information technology innovation has been undertaking an accelerated pace in the past three decades. Technology fashion has been attracting much more attentions from in industry and academia. Information technology fashion is “a transitory collective belief that an information technology is new, efficient, and at the forefront of practice” (Wang 2010, p.64). The study of information technology fashion roots in Abrahamson’s (1996) seminal work - theory of management fashion. The theory of management fashion posits that in an uncertain environment managers intend to adopt fashion-setting organizations and innovation. Although management fashion is an organizational behavioral phenomenon, it is built upon techno-economic foundation. In addition, the theory postulates both exogenous and endogenous forces determine management fashions (Abrahamson 1996). Exogenous forces present the market demand and industrial development trends. In contrast, endogenous factors reflect internal management responses to external forces. Therefore, the theory of management fashion can be used to examine the information technology development patterns and trends from both internal and external views.

Recently IS scholars have introduced the theory management fashion into the studies of IT innovations and fashions (Wang 2010). “An IT fashion is an information technology transitorily collectively believed as new, efficient, and at the forefront of practice.”(Wang 2006). However, IT fashion is still a new concept in the IS discipline. There is lack of empirical supports. Wang (2006) found that companies that follow IT fashions did not have higher performance, but they had better reputation and higher executive compensation in the near term. Companies that invested in fashionable IT had lower performance in a short term, but improved their performance later. Some other studies found that IT innovations and fashions are partly driven by social and institutional factors (e.g., Su, 2011).

In this study, we apply the theory of management fashion (Abrahamson 1996) and dynamic capabilities (Teece et al. 1997) to examine the causal relationship between IT fashion and organizational performance as well as antecedent factors to IT fashion. Technology innovation is a social-technical phenomenon. Organizations invest capitals in the technology that can bring more market shares and profits. Artificial intelligence (AI) is one of the most highly demanded information technologies, which can be a good indicator of revealing organizational strategic investment in IT and technology innovation. Accordingly, we use AI to present organizational IT fashion in the research model.

## LITERATURE REVIEW

Today the business environment is becoming much more competitive and dynamic than ever before due to fast-paced technology development, particularly, information technology development. Organizations must constantly reconfigure their capabilities to adapt the competitive environment such as a new market and therefore they need dynamic capabilities (Teece et al. 1997). Drawing upon prior research findings, Wang and Ahmed (2007) identify three major dimensions or factors of dynamic capabilities – adaptive capability, absorptive capability and innovative capability. Adaptive capability refers to organizational capability to identify and capitalize on emerging market opportunities (Chakravarthy 1982; Hooley et al. 1992; Miles and Snow 1978). Absorptive capacity is “the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends.... the ability to evaluate and utilize outside knowledge is largely a function of the level of prior knowledge.” (Cohen and Levinthal 1990, p. 128) Innovative capability is defined as a firm’s ability to develop new products and/or markets through aligning strategic innovation with innovative behavior and business processes (Wang and Ahmed 2004). We believe the dynamic capabilities is a major driver to adopt new information technology.

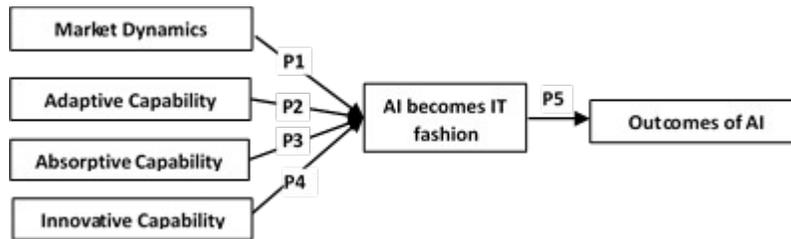
## THEORETICAL DEVELOPMENT/MODEL

Accordingly, we propose the three dimensions of dynamic capabilities determine the IT fashion inside of an organization. See the research model in Figure. In addition, Eisenhardt and Martin (2000) posit that dynamic capabilities encompasses market dynamism as an influential factor for organizational capability to develop and evolve. “A dynamic market environment can be caused by a leading factor or a combination of several factors, including industry technological innovation, regulatory change, economic cycle and the changing competitive nature of the industry.... Firms with higher dynamic capabilities developed technological capability and adapted themselves accordingly.” (Wang and Ahmed 2007, p. 40). Therefore, we also believe market dynamics plays an important role in the formation of IT fashion. A number of IS researches indicate that information technology improve organizational performance (e.g., Melville et al. 2004). Accordingly, we propose that IT fashion impacts organizational performance.

AI is considered a most promise IT today. The business community has recognized the huge potentials of AI usage in business processes and decision making innovation. Actually, AI has been considered an important IT fashion in the past few years. We use AI as a proxy to represent the IT fashion in the research model. The complete research model is shown in Figure 1.

The corresponding hypotheses are proposed as follows.

Figure 1: An IT Fashion Based Research Model



H1: Market dynamics determines “AI becomes IT fashion”.

H2: Adaptive capabilities determines “AI becomes IT fashion”.

H3: Absorptive capabilities determines “AI becomes IT fashion”.

H4: Innovative capabilities determines “AI becomes IT fashion”.

H5: “AI becomes IT fashion” determines the outcomes of AI adoption.

## RESEARCH METHOD

A cross-sectional survey study will be conducted to test the hypotheses. Although a survey is a non-experimental research method, it is a means of gathering information about the characteristics, actions, or opinions of a large group of people (Pinsonneault and Kraemer 1993). Explanatory survey research can be used to answer the question of “why” and to test theory and associative relationship (Pinsonneault and Kraemer 1993; Neuman 2003). A cross-sectional survey provides a snapshot of the interested variables in a study at one particular point in time. We believe that the cross-sectional survey method is appropriate for this study because we are interested in the current state of the impact of dynamic capability’s dimensions on IT fashion and organizational performance.

The survey questionnaire will be adapted from the existing published and validated survey instruments. The adapted instruments will be tested with reliability and validity, therefore we don’t need to reinvent wheel. We will administrate a survey on employees (in particular, managerial positions) in companies across industrial sectors to increase the generalizability of findings from the study. We will use Qualtrics.com to host our survey.

PLS modeling technique will be used to examine the measurement instrument and the structural model which addresses the hypotheses. PLS modeling has been used by a growing number of researchers from various disciplines. PLS places minimal restrictions on measurement scales, sample size, and residual distribution (Chin et al. 2003). Compared to covariance based SEM techniques, PLS is more suitable for explanatory studies that investigate new theories or new application of theories (Chin et al. 2003).

## SUMMARY

AI has become an important IT fashion today. Prior IT studies indicate that IT plays important roles in improving organizational performance. This study propose that IT fashion reflects the

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latest IT adoption in organizations and thus IT fashion will impact organizational performance. Based on the dynamics capabilities (Teece et al. 1997), we introduce three factors that designates organizational dynamics capabilities (Wang and Ahmed 2007) as antecedents to IT fashion. In the research model, we specify AI as a proxy of IT fashion.

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