

Information systems similarity: post merger and acquisition

Didi Achjari*

Gadjah Mada University

Willy Abdillah**

Bengkulu University

Abstract

Information systems (IS) integration is an important aspect in merger and acquisition (M&A) process in organizations. Acquired and newly formed company as a result of M&A may adopt new IS, either from acquirer company or other sources. One of the consequences of M&A is closer degree of IS similarity between the acquirer and acquired companies. Prior IS adoption studies usually apply individual level of analysis, such as Theory of Reasoned Action (TRA) and Technology Acceptance Model (TAM). However, these theories are argued less relevant to explain IS adoption in organizational level of analysis (Fichman and Kemerer, 1997; Orlikowski, 1993). The current paper aims to propose factors that influence IS similarities between acquirer and acquired company. The study contributes to the IS adoption literature in terms of the use of organizational level of analysis to develop a Model of Information Systems Similarity (MISS). The proposed model integrates Resource Dependence Theory (RDT), Resource-based View (RBV), and Institutional Theory.

Keywords: merger, acquisition, M&A, IS integration, IS similarity, Model of Information Systems Similarity (MISS), Resource Dependence Theory, Resource-Based View, Institutional Theory.

1. Introduction

Merger and acquisition (M&A) have been common practice in Indonesian companies across industry sectors, such as banking, telecommunication and mining. In banking sector, the examples of M&A in Indonesia are Mandiri Bank, Danamon Bank, CIMB Niaga and Permata Bank. The external factors such as government regulation and competitive pressures may lead to increasing number of M&A.

Based on the economic perspective, reasons to conduct M&A, among others, are to promote growth, improve liquidity and working capital, improve efficiencies and economies of scale, and enhance the skills and technology (Gitman and McDaniel, 2008). The changing patterns of competition in the current era of digital economy, prompt the company to strengthen the knowledge-based resources and technology. Therefore, technology-based organizations transformation, such as information technology (IT) is one of the main pillars in the process of M&A.

M&A can involve integration of information systems (IS). The merger of Mandiri Bank as well as Indosat-Satelindo integrates IS as one of the pillars of organizational transformation. According to Indrajit (2006), an important aspect to consider in the process of IS integration is the choice of IS architecture for newly

* Corresponding author: dachjari@yahoo.com

** cinoek29@gmail.com.

formed organization post M&A. The company may use an entirely new IS, or particular IS from the dominant organization. Alternatively, the company may combine the best application available. These scenarios lead to the possibilities that there could be a degree of IS similarities between acquirer and acquired firms as well as newly merged company and dominant company.

As mentioned earlier, the example of M&A that involves IS integration is merger of Mandiri Bank. As an impact of economic turmoil in 1997, the Government of Indonesia has to follow one of the IMF's recommendations that was banking sector reforms. The implication of banking sector reforms was four state owned banks (Bapindo Bank, Bumi Daya Bank, Dagang Negara Bank and Exim Bank) that were in troubled condition were merged into Mandiri Bank in 1998. After the merger, Mandiri Bank then conducted consolidation as follows: (1) reducing human resources from 26,600 staffs into 17,620 staffs, (2) closing down 194 branches, (3) implementing new core banking systems to replace legacy systems from the four banks.¹⁾ To do so, Mandiri Bank implemented MASTER (*Mandiri Sistem Terpadu*) as new core banking system in 1999. MASTER was actually a modification of EXIM bank's (one of the merged banks) core banking system so called BEST. However, to support the new business plan, in 2002, the system was replaced by a new core banking system that was named EMAS (Enterprise Mandiri Advanced Systems).²⁾ Hence, in the case of Mandiri Bank merger, the initial core banking was adopted from one of the legacy systems.

IS adoption research in the organizational level, specifically study in regards to IS similarity between acquirer and acquired companies, as far as the authors are aware, is limited. Therefore, it is worth doing to explore the determinant factors that lead to IS similarities between acquirer and acquired firms. The individual-based IT adoption traits like perceived ease of use and perceived usefulness may not be relevant to explain particular IT adoption in M&A because acquirer company may require acquired company to adopt the similar IT. Therefore, the adoption decision is not in the level of individual basis but organizational one. The particular IT that is easy to use and useful for staffs may not be adopted by acquired or merged company if the IT cannot integrate well with the legacy system in the dominant organization. Hence, this phenomenon raises the question, "What are the determinants of IS similarities between acquirer and acquired firms in the context of the M&A?"

Studies of IS adoption and diffusion has produced a set of major theoretical framework to explain the motivation, determinants, attitudes, intentions, and behavior of individuals to adopt IS in organizational context. The set of the main theoretical framework-Diffusion of Innovation (Rogers, 1995), Theory of Reasoned Action (Fishbein and Ajzen, 1975), Technology Acceptance Model (Davis, Bagozzi and Warshaw, 1989), Theory of Planned Behavior (Ajzen, 1991), and Social Cognitive Theory (Compeau, Higgins and Huff, 1999) has received widespread empirical validation. However, other empirical studies found that the set of traditional theoretical framework is unable to explain the reality of the IS adoption at an organizational level, division, and group (Fichman et al., 1997; Orlikowski, 1993).

IS adoption decision indicates that the initiation of adoptions by the organization is generally made by the authority in organizational level (Zaltman, Duncan and Holbeck, 1973). Therefore, the purpose of the individual IS adoption as measured using traditional theoretical models of IS adoption may conflict with the goals adopted by the organization. Individuals adopt the IS on the basis of perceived ease of use, usefulness, benefits, and compliance with its intrinsic values. Meanwhile, IS adoption by organization is economically oriented such as to increase productivity through effectiveness and efficiency. Hence, the theoretical framework that measures the individual IS adoption cannot fully explain the organization IS adoption behavior. Such perspective leads

1) www.media.corporate-ir.net

2) www.bankmandiri.co.id

to the urgency to develop an IS adoption model that is based on the organizational level of analysis.

IS adoption models based on organizational level of analysis have been developed by previous studies. Premkumar and Ramamurthy (1995) examine the determinants of the adoption of interorganizational IS in the context of the use of electronic data interchange (EDI) in the U.S. The results showed that interorganizational factors or socio-political (competitive pressure and the use of power) and organizational factors (top management support and internal needs) affect the rate of EDI adoption by the firms. Montealegre (1999) examined Internet adoption by less developed countries in Latin America. The results showed that the institutional factors affect the progress of adoption stages in each country. The above IS adoption studies indicated that theories of institution and theories of organization can be used to develop models of IS adoption based on organizational level analysis. However, such model in the context of M&A is still limited.

IS adoption studies in the context of M&A focus on the issue of IS integration. Robbins and Stylianou (1999) examined a model of post-merger IS integration processes in the U.S. The study shows that IS capability is dominant factor to determine the success of post-merger IS integration process in USA. Johnston and Yetton (1996) examined IS integration process at two major banks in Australia. The results indicate that strategic alignment between organizational factors and IS factors is the main factor to successful IS integration in the M&A process. Meanwhile, Weber and Pliskin (1996) found that control over IT intensity and organizational cultural differences affect the success of IS integration process in the context of M&A. Based on prior studies of IS integration in the context of M&A, it can be concluded that the complementary and organizational factors are important variables to explain determinants of IS integration process in the context of the M&A.

There are some limitations in previous IS integration studies in the context of M&A. Firstly, previous studies have not yet elaborated comprehensive theories of organizations, such as the Resource Dependence Theory (RDT), Resource-Based View (RBV), and Institutional Theory to explain the determinants of IS adoption in organizational level of analysis. Secondly, previous studies have not revealed the specific issue of IS similarities in the IS integration process within M&A. Thirdly, traditional adoption models are unable to fully explain the adoption behavior in an organizational level. Fourthly, previous studies have not yet examined the specific context of M&A in Indonesia. Hence, this paper aims to propose the determinants of IS similarities among acquirer and acquired companies in the context of M&A in Indonesia.

2. Theoretical background

This section describes the theories that are applied to develop the proposition. The explanation begins with the concept of merger and acquisition.

2.1 Merger and acquisition

Merger is a collaboration of two or more companies into one. A company takes or buys all the assets and liabilities of other companies that have at least 50 percent ownership so that all of operations and its shareholders accept a number of cash or stock in the new company (Brealey, Myers and Marcus, 1999). Merger can also be defined as an absorption of one company by another one, and then the company will continue to buy the name and identity of the acquired company. Acquirer company will also take both assets and liabilities of the acquired company. After the merger, the acquired company will lose or stop their operation.

Acquisition is a takeover of a company by buying shares or assets of the company (Brealey *et al.*, 1999). The acquisition is also defined as the purchase of a company by another company or investor group. The acquisition

is often applied to maintain the availability of raw materials or product warranties. According to Damodaran (2001), a company may be acquired by other companies in several ways, among others, as follows:

2.1.1 Merger

In merger, the directors of both parties have agreed to join with the approval of the shareholders. In general, a merger is approved by at least 50 percent of the target company's shareholders and the corporate bidder. The target company will disappear (with or without process of liquidation) and become part of the corporate bidder.

2.1.2 Acquisition of assets

Acquisition of assets is the purchase of another company's assets through the approval of the target company's shareholders.

The success of M&A depends on the prerequisites of M&A process. One of prerequisites of M&A's success is the IS integration. Lack of IS integration planning may result in high cost M&A and disruptive business expansion process for new merged company. IS integration can be performed through four IS integration approach. Firstly, the absorption. Use the most dominant company's IT and stop the other one after the merger. Secondly, the best of breed. Choose the best IT from the two companies merged. Thirdly, transformation. Use completely new IT. Fourthly, coexistence. Each firm continue to use existing IT that is integrated by particular interface.

Another important issue in the process of IS integration is post-merger information system resource management, including human resources. Companies should update their knowledge, forming a new work culture, and other working environments that can be mutual synergies in accordance with the original purpose of the merger. The most difficult process is integration of resources and systems that are culturally different.

2.2 Institutional theory

Institutional theory explains the process when the structure of organizations, including schemas, rules, norms, and routines is established as authoritative guidelines for social behavior. Institutional theory also describes how the organizational structure aspects to be built, diffused, adopted, adapted, and disposed from the organization. Institution itself is defined as a social structure that has a high degree of flexibility (Scott, 2008). Institution promotes cognitive-cultural elements, normative, and regulative which together with the activities and resources provide stability and meaning of social life. Institution includes symbolic systems, relational systems, routines, and artefacts. Institutions run on a variety of jurisdictional levels, ranging from the system at the state level to the interpersonal relationships.

Powell and DiMaggio (1991) proposed a contemporary perspective in organizational theory and sociology with the terms of the new institutionalism, as a rejection of rational actor models in a model of classical economics. The theory searches the cognitive and cultural explanation about social and organizational phenomena by focusing on the analysis of unit-level properties that are not directly implicative on the motivation and individual attributes.

Hence, institutional theory explains the reasons for an organization to maintain itself through legitimacy. In accordance to be legitimate, the organization uses normative, force (coercive), and mimic (mimetic) approaches. The ability of the organization to be externally legitimate is also affected by how the organization adapt its internal processes to the external influences. In the context of M&A, the organization pursues external legitimacy through the process of IS integration through the application of common standards (best practice),

equips standardized professionals, and implements regulated bureaucracy.

2.3 Resource-based view theory

Resource-based view (RBV) is a business management concept and guideline to determine the strategic resources available to the company. The basic principle of RBV is that the company's main basis competitive advantage depends on the application of a set of valuable resources within the organization (Penrose, 1959; Rumelt & Lamb, 1984; Wernerfelt, 1984). To change the short-term competitive advantage into a long-term competitive advantage, it takes the diverse resources and cannot move perfectly (Peteraf, 1993). Effectively, this transformation also includes valuable resources that cannot be replicated and replaced without great effort (Barney, 1991). If these conditions are met then the set of these resources can support company to maintain highly average return.

RBV that is known since the early 90s actually have been formed by partial aspects of the theory since the early 1900s. Forerunner of RBV first appeared when Wernerfelt (1984) wrote the article A resource-based view of the firm. The article reveals aspects of the origin of the concept of RBV revealed by Coase (1937), Selznick (1957), Penrose (1959), Stigler (1961), Chandler (1962, 1977), and Williamson (1975), which is about the importance of resource and its implications on the performance of the firm (Conner et al., 1996; Mahoney et al., 1992; Rugman and Verbeke, 2002; Rumelt et al., 1984). Neoclassical paradigm shift from the economics of industrial organization and organizational economics is an important contribution of the emergence of the theory of RBV (Conner and Prahalad, 1996; Mahoney and Pandian, 1992). Two subsequent publications written by Barney (1986) and inspired by the thought of Wernerfelt (1984) are milestone establishment of RBV theory. Although Barney (1986) did not quote Warnerfelt directly, his statement on strategic factor markets and the role of expectations showed clearly Warnerfelt's RBV framework.

Another basic concept of the RBV is that the creation of value which is based on unique resource can produce long-term competitive advantage. This is because competitors do not have the same ability to use these types of resources, even if competitors can acquire or imitate. RBV main concern lies in the ability to combine resources in company that cannot be owned or built by a competitor.

RBV theory has been criticized by some scholars. Priem and Butler (2001) suggest four main points of criticism of the RBV. First, the RBV is tautological. Barney (1991) defines competitive advantage as a resource-based value creation strategy. However, the explanation is circular and lack of operationalization (Priem et al., 2001). Second, every resource configurations can produce the same value for the company and then could not produce a competitive advantage. Third, the argument of product market role is not constructed explicitly. Fourth, RBV has practical implications weakness.

2.4 Resource dependence theory

The forerunner concept of resource dependence theory (RDT) was firstly expressed in the dissertation of Pfeffer (1972a) that examines the importance of exchange and power relations within and around organizations. Along with Salancik who had micro-oriented aspects, Pfeffer built RDT. *The External Control of Organizations*, a book published in 1978, consolidated the early work of Pfeffer on internal power among individuals and departments to the dynamics of the industry level. The most widely used aspect in the concept of External Control is analyzing the sources and consequences of power in relationships between organizations, which is the source of power and dependency, and how organizations use and manage its power dependence. As revealed by Pfeffer and Salancik (2003) in his revised book, "*RD was originally built as an alternative perspective of economic theory of mergers and interlocking boards of directors, and to understand precisely the type of*

relationship between organizations that play a major role in market failures". The motivation of managing organizational RD is to ensure organization's durability and to enhance the organization's autonomy, and in the same time to maintain the stability of exchange relationships within the organization.

RDT states that the influence of external factors on organizational behavior is limited by the context, and managers can act to reduce environmental uncertainty and dependence. The core of this action is the concept of power, namely control over important resources. Organizations seek to reduce the influence of the power of others as well as try to increase their own power against other parties.

Another concept of RDT which can be used as a tactic is a joint association or business group. If there is a constraint to access a resource or otherwise to establish constraints to access the resource, the company can make an alliance or joint venture with resource constraints. The alliance is an engagement agreement between two or more organizations to pursue common goals through coordination activities or sharing of knowledge and resources (Scott, 2008), including research and development collaboration agreements, licensing and franchising agreements, marketing arrangements and production, minority investments and swap equity. Previous studies found that joint ventures are common in medium concentration level industry (Pfeffer, 1978). The findings indicate tendency to increase efforts to handle interdependence.

Other strategy to manage dependency is co-optation. Selznick (1957) stated that the organization can cope with uncertainty by taking resource constraints into the board of directors (BOD) so that it can support the company's business policy. Company can take competitor's supplier executives or a major customer to join in the BOD to gain return and legitimacy. Organization expects to strengthen the bargaining position in overcoming dependencies by inviting competitors, legislators and cabinet members to join in the BOD. Empirical studies indicate that composition of the BOD and competition are associated with the level of industry concentration (Pfeffer, 1978).

The main method to overcome dependencies is to internalize source of barriers into organization in the form of M&A. Mergers occur in three forms, namely vertical (buying suppliers or buyers), horizontal (buying a competitor), and diversification or conglomerate merger (buying organizations in other domains). Pfeffer (1978) states that vertical integration represents a method to develop organizational control over the process of exchanging critical business operation. He suggests that horizontal expansion represents a development method to enhance corporate power in exchange relations, and to reduce uncertainty that arises from competition. Further, diversification represents a method of organization to decrease the dominant parties.

Power, interorganization dependencies, and managerial motivation to control other parties are factors that can be described in RDT perspective. This indicates that RDT remains a relevant concept to explain the phenomenon of M&A. Of course, RDT integration with other theories, such as Agency Theory, Institutional theory, and RBV increases the predictive and explanatory power of M&A phenomenon in industry.

2.5 RDT in the context of merger and acquisition

RDT has become one of the dominant theoretical rationales that explain why companies engage M&A (Yin and Shanley, 2008). RDT offers an external perspective that focuses on the company trying to acquire another company (Haleblian, Devers, McNamara, Carpenter and Davison, 2009). Specifically, Pfeffer (1976) describes three reasons for organizations involved in the M&A. First, it reduces competition by acquiring major competitor. Second, managing input interdependency appropriately. Third, diversification of operations reduces dependency on other organizations.

Casciaro and Piskorski (2005) define power imbalance as the difference in power among two organizations while mutual dependence explains total dependency. Both interdependence dimensions affect the merger

through a unique mechanism that indicates the nature of mutual dependencies. Further, the study found that mutual dependence increases M&A, while the power imbalance inhibits M&A.

On the basis of prior studies of RDT, it can be concluded that RDT can be applied to explain the motivation, tactics, and the company's goal to reduce dependency and establish control over the resource. However, criticisms towards RDT open up the opportunities to extend and improve RDT by integrating other relevant theories, such as RBV, Agent Theory and Institutional Theory.

2.6 Interdependency between acquirer and acquired company

In the context of M&A, high interdependence among firms can be explained by RDT. Dependency is created through exchange relationships that affect the parties' behavior and decisions of others (Cook and Kirkpatrick, 2000; Pfeffer et al., 2003). According to RDT, organizations use a certain degree of control or influence over decisions that affect environment or resources of other companies to stabilize the relationship. Stability can be achieved through the use of power, control, or negotiation of interdependence through reduction of environmental uncertainty and predictability of resources flows.

Interdependence can occur among two or more firms for critical resources such as raw materials, assembly, or services that are owned by each company. In the case of a company which desperately needs a resource owned by another, the company try to get those resources and to maintain continuity of supply through M&A. Company dependency on another company increases when resources are being critical and valuable (Pfeffer and Cialdini, 1998).

Interdependency among firms can also be determined by the types of resources received by the company. In the case when a company (e.g. subsidiary) received resources from the parent company, then the dependency of subsidiary on the parent company is determined by all the resources taken collectively. When a subsidiary build production facilities in foreign markets then the subsidiary will face an uncertain environment, both for resource acquisition and product sales. To get support in overseas markets, the subsidiary needs the parent company in the form of merger or acquisition. M&A provides possibility for the subsidiary to get sales support in overseas markets, while the parent gets support of the subsidiary's special resources.

Interdependence can be measured at least in two forms, namely the index of capital ownership and sales index. Sales index measures the support of the parent company to sales of subsidiaries in the form of parent's purchase of subsidiary products. Meanwhile, capital index measures the financial support of the parent company to subsidiaries. Sales index indicates the percentage of total sales of subsidiary to parent company. Measurement uses scale scored ranged 0 to 100 percent. The lower index indicates that dependency of subsidiaries sales to parent companies is lower. Capital index indicates the amount of capital owned by the parent company to subsidiaries. Measurements uses scale scored range 0 to 100 percent. The lower index indicates that the level of dependency of capital subsidiaries to parent companies is lower. This study argues that the higher index of capital owned by the parent to subsidiary, the higher IS similarity among firms. In addition, the higher percentage of subsidiary sales to the parent company indicates higher dependency of subsidiary to the parent company. Thus, the proposition in this paper is as follows.

P1a: The higher index of subsidiary company sales to the parent company, the higher level IS similarity between subsidiary company and parent company.

P1b: The higher index of parent company capital in the subsidiary company, the higher level of IS similarity between subsidiary company and parent company.

2.7 Composition of boards of directors

RDT influences the study of BOD. Pfeffer (1972b) stated that the BOD enables companies to minimize resource dependence or increase profits. Previous study of the BOD concludes that RDT is more widely supported than other theories such as Agency Theory (Zahra & Pearce, 1989). Preliminary studies of BOD from RDT perspective focuses on size and composition of BOD as an indicator of the ability of BOD to provide essential resources for the company. Pfeffer (1972b) found that the size of the BOD associated with the environmental needs, i.e. the higher level of interdependence the greater composition external BOD. He concluded that size and composition of BOD were not random nor independent factors, but rather as a rational response to the organization's external environment. A study by Sanders and Carpenter (1998) supports Pfeffer's findings. The study found that size of BOD associated with the level of firm's internationalization and the degree of firm's dependency on the environment.

Further, other study found that necessity to change composition of BOD related to changing needs of environment (Lang and Lockhart, 1990). In the context of China, Peng (2004) found that the external BOD tend to influence positively on firm performance. Furthermore, the study shows that when the composition of board does not meet new environmental demands, the performance of company tends to fall.

The current study argues that the composition of the BOD affects IS similarity between acquirer and acquired companies. BOD composition can be measured by percentage of external executives in BOD (Lester, Hillman, Zardkoohi and Cannella, 2008). When BOD composition is dominated by external executives, BOD's decisions tend to consider the interests of external stakeholders, for instance, to develop IS for acquired company. Thus, the proposition in this study is as follows:

P2: The higher percentage of external executives in the BOD, the higher degree IS similarity between acquirer and acquired companies.

2.8 Political actions

Pfeffer (1978) states that company cannot control uncertainty and interdependence in the wider social system (including government). To create suitable environment, company seeks to reduce uncertainty and interdependence through political mechanism, such as to influence government regulation. Mezner and Nigh (1995) found that companies which are very dependent on government tend to engage in political activity. Meanwhile, Birnbaum and Wong (1985) found that when company's dependency on regulatory agencies is high, managers tend to engage in political activity.

Markus (1983) states that manager's political action relates with intra organizational politics and power dynamics within the organization. Managers seek to increase the political power to the control over IS that are designed in accordance with the interests of the organization and managers. To reduce the internal resistance of the IS integration process, managers can perform a series of political action process as follows. Managers govern the distribution of IS control power across divisions (e.g. rotate, educate, force, or fire people in certain positions). They can also alter the design and implementation activities in organization to improve the control of managers over information resources. In the context of M&A, IS integration is manager's effort to increase the political power as well as to reduce resistance towards integration process.

The current study argues that political action increases the political power of managers and the organization's critical resources owned by other companies. When information systems are one of the critical resources and source of political power held by the subsidiary, the executive tends to act politically to secure the resources by building IS similarity between acquirer and acquired company. Hence, the proposition is developed as

follows.

P3: The higher frequency of executive's political actions in IS integration process, the higher degree of IS similarity between acquirer and acquired company.

2.9 Executive succession

Executive succession has been discussed by Pfeffer (1978) in the context of how organizations overcome environmental uncertainty and dependency internally. Executive succession is strategic response to manage environmental contingencies. Pfeffer (1978) proposed an executive succession model as follows: (1) the environmental context, contingency, uncertainty, and interdependence influence the distribution of power and control within the organization, (2) the distribution of power and control within the organization influence the selection of tenure and the main administrator of the organization, (3) the policy and organizational structure are the result of decisions that are influenced by the distribution of power and control, and (4) the administrator who controls the activities of the organization affects the activity and structure. Thus, low performance of company can be attributed as an unconformity between organizational behaviors and the environment. Replacement of CEO with the one who can survive the organization can address this unconformity.

Based on the previous studies, it can be said that the intra-organizational power is influenced by external dependencies, and executive succession can reduce environmental dependencies. In addition, the level of environmental uncertainty is likely to affect the level of executive turnover and tenure, as well as the type of executive options. Although RDT can explain the executive succession, more studies are needed in the context of M&A.

The current study argues that firms reduce dependencies on other companies, for instance, by implementing executive succession. Succession can increase corporate power to control external resources, such as acquired IS company. Executive succession in the acquired company, will enable acquirer company to increase conformity of these resources by integrating the IS of acquired company. The proposition is developed as follows.

P4: The higher degree of executive successions in the acquired company, the higher degree of IS similarity between acquirer and acquired company

2.10 Similarity of organizational culture value

Institutional theory states that the existence of organization in competitive environment is determined by the ability of organization to obtain institutional legitimacy from environment. Organization seeks to gain legitimacy by adopting a particular system, develops a system of bureaucracy, and mimics the system of other organizations (DiMaggio and Powell, 1983). Adopted system includes schemes, rules, norms, routines, and culture as authoritative guidelines for social behavior of entities in the organization. Legitimacy of external environment and acceptance of internal environment of the adopted system determine the organization sustainability.

Scott (2008) indicates that in order to survive, organizations must comply with rules and belief systems adopted from the environment. Knetter (1992) states that common reaction among firms when they are exposed to the same challenges is known as institutional isomorphism (e.g. integrating IS between parent and subsidiary companies). Hence, institutional isomorphism can generate legitimacy for the organization in order to survive in industry competition (Dacin, 1997; Deephouse, 1996; Suchman, 1995). IS integration is an organizational effort to reach legitimacy by the external environment. Cohesiveness of cultural values between the acquirer

and acquired firms determines the effectiveness of the IS integration in the context of the M&A (Weber et al., 1996). Therefore, the proposition is as follows.

P5: The higher degree of similarity the organizational culture values between the acquirer and acquired company, the higher level of IS similarity between the acquirer and acquired company.

2.11 Information systems capability

RBV explains that company bases of main competitive advantage depend on the application of a set of valuable resources within organization (Penrose, 1959; Rumelt et al., 1984; Wernerfelt, 1984). To achieve sustainable competitive advantage, the resources should be valuable (Conner et al., 1996; Mahoney et al., 1992), rare (Barney, 1986; Dierickx and Cool, 1989), inimitable (Dierickx et al., 1989), and imperfectly transferable (Barney, 1991). If these conditions are met then the set of these resources can help company maintain their above average return.

Amit and Schoemaker (1993) developed the concept of RBV to distinguish the concepts of resources and capabilities. Resources can be traded and are not specific to the company. While the capability, such as the transfer of knowledge within the company, is something special and useful that is owned by companies to exploit resources in the enterprise (Hoopes, Madsen and Walker, 2003). Meanwhile, Makadok (2001) differentiated between capabilities and resources by defining capabilities as a special type of resource, especially the company-specific resources that cannot be moved and attached to other organization to improve the productivity of other resources in the organization. Resource is a reserve factors that are owned and controlled by the organization. Meanwhile, capability is the ability of the organization to utilize these resources. Thus, sustainable competitive advantage can only be achieved when the organization can exploit valuable resources through the development of capabilities.

IS capabilities are conceptualized as managerial capabilities (Sambamurthy and Zmud, 1992) or technological capabilities (Sabherwal and Kirs, 1992). A recent study uses an inclusive approach to define IS capability, both managerial and technological aspects (Bhatt and Grover, 2005). According to Bharadwaj, Sambamurthy and Zmud (1999) and Bharadwaj (2000), IS capabilities in RBV perspective are translated as the company's ability to obtain, use, and optimize all IT-related resources and to combine other resources into capability to achieve business goals. Bharadwaj et al. (1999) later proposed six multidimensional construct of measurement IS capabilities, namely IT-business partnerships, external IT linkages, business IT strategic thinking, IT business process integration, IT management and IT infrastructure.

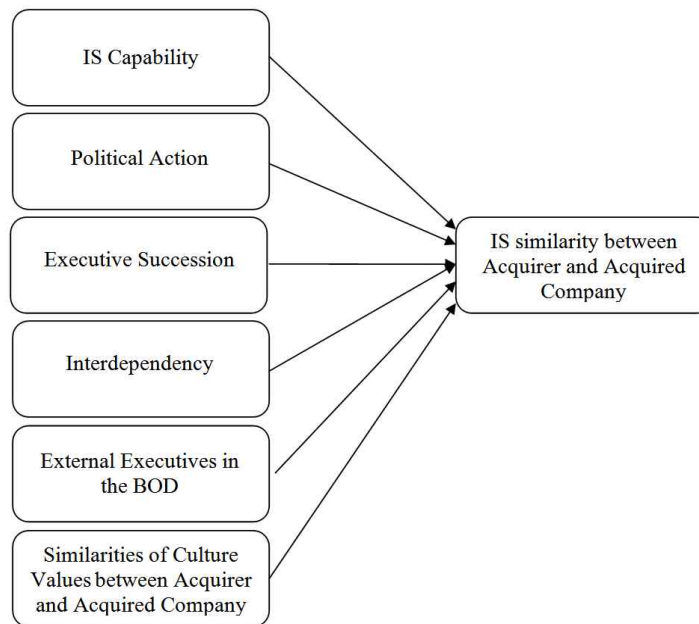
In the M&A process, IS capability is one of the dominant factors affecting the success of IS integration between acquirer and acquired company (Robbins et al., 1999). IS capability shows the ability of IS infrastructure as a physical resource to control system (Weber et al., 1996), and alignment of strategic and operational in the process of IS integration (Merali and McKiernan, 1993). The ability to manage IS capability determines the success of IS integration process in the context of the M&A (Robbins et al., 1999; Stylianou, Jeffries and Robbins, 1996). The current study argues that when acquirer company owns IS capability, the company tends to integrate the acquired company IS. Therefore it will lead to high IS similarity between acquirer and acquired companies. Below is the proposition in the current study.

P6: The higher IS capability of acquirer company, the higher level of IS similarity between acquirer and acquired company.

3. Proposed model

Figure 1 below presents the proposed research model. It is proposed that IS similarities among firms in the context of M&A can be predicted by variables that originate from internal and external organization. The internal variables are IS capabilities, political actions, and executive succession. The external variables are the interdependencies among firms, the composition of BOD, and cultural values similarities.

Figure 1. Model of Information Systems Similarity (MISS)



RBV theory explains that the organization's sustainable competitive advantage is affected by valuable internal resources. In the context of organizational IS-based transformation, IS capabilities are major internal resource that must be owned by the company. Company's ability to survive is determined by the capability of IS to utilize IT-related resources to build competitive advantage through the IS integration.

In addition to IS capabilities, the organization build competitive advantage through IS integration by taking political actions. Company's political actions deal with environmental change, increasing the political power of managers, and reducing resistance to the IS integration process in the context of M&A. Political action can also increase the political power of managers and the organization's critical resources owned by other companies, such as subsidiaries. When information systems are one of the critical resources and source of political power held by a subsidiary, the executive tends to act politically to secure the resources by building IS similarity between acquirer and acquired companies.

Organizations also build competitive advantage through IS integration by taking executive succession to reduce dependency on the environment. Succession is dedicated to increase corporate power to control the external resources, such as IS of subsidiary. Executive succession enables the parent company to protect these resources by building similar IS into subsidiaries.

Successful IS integration is influenced by the composition of BOD and the degree of dependency on other companies. When BOD are more filled with outside executives, then BOD policy decisions, such as developing similar IS for subsidiaries, tend to consider the interest of external stakeholders. BOD composition that meets the external legitimacy is also expected to reduce the level of corporate dependency on other companies and to facilitate the IS integration process among firms.

4. Conclusion

The dynamics of business environment has led to increasing number of M&A. The integration of adopted information systems is one of the important aspects in M&A process. There are patterns of IS adoption in the post M&A. One pattern is acquirer/dominant company pushes the acquired company to adopt the system that is currently used by acquirer company. In addition, possible pattern is that merged company adopts IT from dominant organization's legacy systems. Other pattern is merged companies develop a totally new information systems. To obtain the benefits of M&A, adopted information systems is then integrated with current/legacy systems that are used by dominant company. Therefore, information systems integration can be indicated by the degree of information systems similarity between acquirer and acquired/dominant company. Further, the ability to identify factors to determine IS similarity can lead to appropriate IT adoption and diffusion strategy and policy.

Prior study suggests that adoption decisions by organization are generally made by the authority in organizational level (Zaltman, Duncan and Holbeck, 1973). Following the study, the decision of IS adoption in the M&A is considered as organizational level phenomenon. Therefore, adoption theory such as Technology Acceptance Model, Theory of Reasoned Action, and Theory of Planned Behavior that are based on individual level of analysis are less relevant. As such, the current study uses organizational level of analysis to develop proposed IS adoption model.

Finally, this study contributes to the IS adoption literature in regards to development of Model of Information Systems Similarity (MISS). The proposed model integrates various theoretical perspective of organizations and institutions (i.e.: RDT, RBV, and Institutional Theory). The model suggests that internal and external factors are antecedents of the IS similarity between acquired and acquirer company. The internal factors include IS capabilities, political actions, and executive succession. Meanwhile, the external factors comprise of interdependencies among firms, the composition of BOD, and cultural values similarities.

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