

A study of Organizational Citizenship Behaviours, Organizational Structures and Open Innovation

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Abstract

With increasing technological advances, the need to create not only innovations but faster innovation has become a part of sustaining or gaining competitive advantage. Open innovation paradigm answers this need by utilizing larger resources and expertise that firms involved in the open innovation process offer. Given the recency of the concept of open innovation, the factors that influence the creation of open innovation are hazy. Most of the research on open innovation looks at the “hard” aspects of organizations, while the soft issues stand less researched. This conceptual paper draws attention to two such aspects of organization: organizational citizenship behaviour and organizational structure. This paper proposes that practicing organizational citizenship behaviours by the employees enhances the chances of creation of open innovation while not doing so can botch up the whole exercise particularly during the infancy stage. It is also proposed that informal organizational structures favour creation of innovation in the open innovation paradigm more than the rigid formal structures. It is further argued that besides proper citizenship behaviours and informal structures, firms need to achieve strategic resonance with suppliers and customers to create successful open innovation. Propositions are developed, managerial implications underscored and future research directions highlighted.

Keywords: open innovation, OCB, organizational structures, strategic resonance.

1. Introduction

The pressures of globalization have forced firms around the world to change the way they innovate. For years, firms have relied on the closed innovation model to be competitive and bring new product and services to the market (Chesbrough, 2006). While the traditional model of innovation has led to myriad innovations, it involved a very limited interaction with the external environment (Lichtenthaler, 2008a). In the present times, however, with rapid technological changes taking place, sticking to the traditional closed innovation model can lead to loss of competitive advantage for a firm while, on the other hand, embracing an open innovation model can result in important strategic innovations providing firms with competitive advantage (Chesbrough, 2003a). In the open innovation paradigm, as the boundaries become porous, there is more interaction between partner firms that results in greater technology acquisition and exploitation (Chesbrough, 2006). Consequently there is a greater amount of resources and expertise at hand than expected in the closed innovation model. This has many benefits, one of which is faster innovations.

The open innovation process starts with identifying the knowledge sources and then exploiting them. This stage can usually be accompanied by lack of resources either because the project is still new or because the output of the project is not trusted. Or sometimes managers may not be able to foresee all contingencies or fully anticipate the activities that they may desire or need employees to perform (Katz & Kahn, 1978; Organ, 1988). Therefore, Organizational Citizenship Behaviours (OCBs) shown by the employees may go a long way in ensuring success of the open innovation projects. In addition to the practice of OCBs, the outcome in open innovation paradigm may be determined by the organizational structure. An informal organizational structure, in contrast to a formalized organizational structure is characterized by openness in the system which is a necessary precondition for idea initiation in the innovation process (Shepard, 1967). Further, an organization may possess all other right ingredients for open innovation, however, strategic resonance¹ or lack of it can determine to a large extent whether or not its capabilities will lead to successful open innovation. Looking at all these organizational aspects, this article makes two main contributions. Firstly, it studies the effect of organizational citizenship behaviour and organizational structure on the creation of open innovation.

¹Steve Brown, who has done considerable amount of work in this field, defines strategic resonance as “an on-going, dynamic, strategic process whereby customer requirements and organizational capabilities are in harmony and resonate” (Brown, 2000).

Secondly, we propose the moderating influence of largely external condition, strategic resonance, on creation of open innovation. Understanding these conditions in the context of open innovation may help firms to avoid systematic mistakes in managing knowledge, and it may deepen our understanding of corporate knowledge and alliance strategies. The remainder of this paper takes the following structure. The second section provides a detailed definition of open innovation, its significance and characteristics. In the third section, we discuss Organizational Citizenship Behaviour and Organizational Structure in relation to open innovation. The fourth section relates Strategic Resonance – the proposed factor that moderates the relationship between OCBs and organizational structure and the creation of open innovation. In the last section, conclusion is provided, managerial implications are underscored and future research directions highlighted.

2. Literature Review

3. 2.1 Open Innovation

Open innovation has emerged as an alternative model of innovation wherein firms commercialize both external and internal ideas and technologies and use both external and internal resources. In an open innovation process, projects can be launched from internal or external sources and new technology can enter at various stages. Besides traditional sales channels, projects can go to the market in different ways, such as through out-licensing or spin-off ventures (Chesbrough, 2003c). In one of his definitive articles, Chesbrough (2003a) lists down the contrasting principles of closed innovation and open innovation. According to Chesbrough, firms in the closed innovation model assumes that: a) the smart people in our field work with us, b) to profit from, R&D, we must discover, develop and ship ourselves, c) if we discover it ourselves, we will get it to the market first, d) If we are to commercialize an innovation, we will win, e) if we create the most and the best deals in the industry, we will win and, f) we should control our Intellectual Property so that our competitors do not profit from our ideas. On the other hand, firms operating in the open innovation paradigm assume that: a) not all smart people work in-house and thus there is a need to tap into external knowledge, b) external research and development can generate significant value to us, c) research does not need to originate from our internal work to be profitable for us, d) a strong business model is more important than bringing products to the market first, e) internal as well as external ideas are essential to win and, f) we can capitalize on our own IP and we should buy others' IP when needed

Chesbrough *et al.*, consider the open innovation model as the antithesis of the traditional, vertically integrated model wherein internal research and development (R&D) efforts of a firm lead to products developed internally and distributed thereafter (Chesbrough, Vanhaverbeke, & West, 2006). One of the limitations of the closed innovation model is that monolithic organizations that carry out business in isolation develop fragmented linkages and poor interfaces (Govindarajan & Trimble, 2005). Open innovation incorporates explicitly the business model as the source of value creation and value capture, helping a firm sustain its position in the industry while at the same time sharing the task of value creation across industry value chain (Chesbrough, *et al.*, 2006). In an Open Innovation paradigm, valuable ideas may come from inside or outside the company and can go to market from inside or outside the company as well. This approach places external ideas and external paths to market on the same level of importance as that reserved for internal ideas and paths to market during the Closed Innovation era (Chesbrough, 2003c). The open innovation model, on the other hand, regards R&D as an “open system” in which ideas can come from both inside and outside of the organization and can go to the market through similar channels (Chesbrough, *et al.*, 2006).

Thus open innovation also refers to the innovation process in which the boundaries of the firm are porous (Chesbrough, 2003c). This is often a result of an alliance or collaboration or any such agreement between firms and since the knowledge is distributed, the innovation process is also distributed among the players involved in this process (Acha & Cusmano, 2005). As the boundaries become porous, there is more interaction between partner firms that results in greater technology acquisition and exploitation (Chesbrough, 2006). As a result there is a greater amount of resources and expertise at hand than expected in a closed innovation model. This has many benefits, one of which is faster innovations. Organizations adapt to global change by focusing on their core competency and looking outside to rely on other companies to provide complementary capabilities (Hagel & Brown, 2005). In their seminal work, Chesborough *et al.*, (2006) divide open innovation into two conceptually different dimensions: inbound or outside-in open innovation and outbound or inside-out open innovation. Outside-in open innovation refers to the use of discoveries of others and involves opening up to, and establishing relationships with external organisations with the purpose to access their technical and scientific competences for improving the firm's innovation performance. On the other hand, the inside-out dimension implies that companies can look for external organisations with business models better suited to exploit and commercialise a particular technology than just depend on internal paths to market (Chesbrough, *et al.*, 2006). The aim however remains to exploit better innovation opportunities.

Dahlander *et al.*, (2010) place the idea behind openness on a continuum, ranging from closed to open, covering varying degrees of openness. Dahlander *et al.*, (2010) show through a review of 150 papers published on open innovation in the ISI database that there are two types of open innovation: out-bound and in-bound open innovation. The out-bound innovation involves two processes which are revealing and selling while the inbound innovation also entails two processes termed sourcing and acquiring. Revealing as the name suggests refers to how internal resources are revealed to the external environment without the firm hoping for any immediate financial rewards and seeking indirect benefits only. Selling implies how firms accrue benefits by commercialising their inventions and technologies through selling or licensing out to other firms. On the other hand, sourcing refers to how firms can use external sources of innovation after they scan the external environment for possible ideas and technologies. Acquiring is defined as acquiring inputs to the innovation process through the market place. This can happen through licensing-in and acquiring expertise from the external environment. While sourcing and revealing are non-pecuniary in nature and may not bring any direct financial benefits to a firm, selling and acquiring are pecuniary in nature and undertaken for direct profit to the firm (Dahlander & Gann, 2010).

4. 2.2 Reasons for Open Innovation

In his book, "*Open Innovation - The new imperative for Creating and Profiting from Technology*" (2003), Chesbrough explains how in the 20th century firms profited from innovations that were outcomes of heavy investments in internal research and development of firms. However with the changing times towards the end of the 20th century, a number of factors combined together to cause the closed innovation process to break up in the United States. The two main such factors were: 1) Rise in the number and mobility of knowledge workers and 2) growing availability of private venture capital. While the increase in the number and mobility of knowledge workers made it difficult for companies to control their proprietary ideas and expertise, the increased availability of private venture capital helped finance new firms and commercialize new ideas that would otherwise be found useless or less useful in corporate research labs. This paved the way for more open innovation (Chesbrough, 2003a). Given the urgencies of the global markets, it becomes imperative on the organizations and new entrants to regenerate their core strategies and reinvent their industries by developing sustainable core competencies (Prahalad & Hamel, 1994). Organizations that sense the changing environment create focus on the right metrics, align and mobilize the entire organization, implement quickly, and create a generative learning environment to stay competitive (Pietersen, 2001).

Hence to lead in the global markets, organizations must think outside their own business units and leverage resources of a coalition of companies (Prahalad & Hamel, 1994). Ever-changing markets and cost of doing business force organizations to look beyond their organizational structure for competencies (Parise & Henderson, 2001). This is one of the main aims of entering into strategic alliance or collaborations whereby firms form inter- and intra-organizational relationships to engage partners in collaborative behaviour and to tap into resources exterior to the firm (Love, Irani, Cheng, & Li, 2002). Complex environments that are a result of increased collaborations between different players have in many ways necessitated the shift from closed to open systems that facilitate informal behaviour to match situational and contextual factors (Brodbeck, 2002). Globalization has in some ways further necessitated the need to collaborate with external players in the open innovation process. The effects of globalization in terms of increased competition, increased mobility of skilled workers, shorter product life cycles, higher risks and lower profit margins have forced the firms to spread risk and develop new products and services quickly and efficiently (Chesbrough, 2003c).

Furthermore, Dahlander *et al.*, (2010) came up with four reasons for the currency of open innovation. Firstly, open innovation reflects social and economic changes in working patterns with professionals seeking portfolio careers rather than a permanent job-for-life with a single employer. Hence firms need to tailor their approach in order to access talent that may not be ready for direct and exclusive employment. Secondly, globalization has expanded the extent of the market that allows for an increased division of labour. Thirdly, improved market institutions such as intellectual property rights, venture capital, and technology standards allow for organization to trade ideas. Fourthly, new technologies allow for new ways to collaborate and coordinate across geographical distances (Dahlander & Gann, 2010). Open innovation incorporates explicitly the business model as the source of value creation and value capture, helping a firm sustain its position in the industry while at the same time sharing the task of value creation across industry value chain (Chesbrough, *et al.*, 2006). In an Open Innovation paradigm, valuable ideas may come from inside or outside the company and can go to market from inside or outside the company as well. This approach places external ideas and external paths to market on the same level of importance as that reserved for internal ideas and paths to market during the Closed Innovation era (Chesbrough, 2003c).

Recent research has shown that open innovation may also be a result of the internal weaknesses of a firm, specifically, impediments to innovation (Keupp & Gassmann, 2009). These impediments could be information- and capabilities-related impediments or risk-related. Keupp *et al.*, (2009) show that these internal impediments to innovation influence the width and depth of open innovation – width being the number of sources or external actors a firm uses for its open innovation activities and depth meaning the intensity of collaboration with each source (Laursen & Salter, 2006). Findings suggest that firms whose internal innovatory activities are confronted with information- and capabilities-related impediments or risk-related impediments to innovation are more likely to use open innovation with more intensity in both width and depth (Keupp & Gassmann, 2009).

5. 2.3 Why open Innovation?

Organizations create value externally by acquiring skills and knowledge from partners to complement the internal capabilities of their organizations (Love *et al.*, 2002). Some of the reasons for firms to enter into collaborative relationships are to improve innovation, increase speed to market, and reduce the costs of internal vertical integration. When the partner firms share information, it improves their efficiency and helps them focus on joint opportunity recognition (Moffat & Archer, 2004). If the partner firms have compatible goals and they pool their resources, it creates increased value for the partner organizations as well as the customers (Kesler, 2002). This joining of hands finally provides for the potential for improved designs, shorter lead times, and greater customer value (Ragatz *et al.*, 2002). Such collaborations can result in engagements of different forms with suppliers, customers, competitors, complementors, or even partners outside the industry (Parise & Henderson, 2001). Similarly different forms of such alliances may have varied objectives. For instance, alliances may be formed to support a specific project (Love, *et al.*, 2002). To gain valuable market insight and an intimate understanding of the customer, environment, culture, situation dynamics and create value, firms may enter into relationship-specific alliances (Subramani, 2004). Sometimes firms may engage in cooperative alliances to enhance their portfolios of capabilities as well (Taylor, 2005).

As a result of collaboration efforts of the partnering firms, a heady mix of talent and expertise from people working together in new ways often stimulates innovation. This has further been made easier by the advent of information technology that has enabled better coordination of alliance partner value chains and greater integration as demanded by the new global market forces (Shaw, 2000). Research has shown that effective collaboration with external partners, like buyers, suppliers and other organizations is one of the important factors for innovation (Faems *et al.*, 2005; Ritter & Gemünden, 2004). Learning to access and partner with organizations who bring resources and capabilities creates value in unprecedented ways (Palmisano, 2006). Through networks and alliances, open innovation gives a flip to the human and social capital. The value of the organizations is linked to the current and prospective engagements with the tangible and intangible influences of the other organization (Lev & Zambon, 2003).

Many firms have realised the benefits of engaging in open innovation in several spheres. Vanhaverbeke *et al.*, (2008) looked at the advantage of working in open innovation style in external corporate venturing. In real option terms, open innovation gives companies a chance to scan through a wide range of available technologies or new market developments, instead of just investing in internal projects alone. This has financial value for the focal firm because there may be more varied opportunities, and some of these may be uncorrelated with internally perceived opportunities (Vanhaverbeke *et al.*, 2008). In the case of external corporate venturing in the open innovation paradigm, the focal innovating firms also benefit from delayed entry or delayed financial commitment and an option of early exit and the ability to realize some value from projects that do not go forward internally. Beside while the venture grows further and matures, the corporation can decide whether to spin in the venture or whether to sell it to external capital providers such as venture capitalists (Vanhaverbeke, *et al.*, 2008). This can bring profit to the firm as well. For these and other reasons, firms are moving from the closed innovation model to open innovation strategies.

6. 2.4 Challenges to Open Innovation

Being a part of the open innovation paradigm and reaping its benefits in case of organizational collaborations or alliances does not seem to be easy. Open innovation requires an over-all organizational fit between the partners, absence of which can derail the whole intent of any such collaboration. Needless to say that this open innovation process first involves compatibility in terms of nature of business. But beyond the nature of business, many other important factors may impact the success of any collaboration for open innovation. Open innovation entails many organizational changes. The capacity of a firm to align with value-added partners enhances tangible value and responsiveness to the changing needs of the customers (Ulrich & Smallwood, 2004). At the same time, joining hand with the external players leads to some degree of complexity relating to culture, organizational personality, and trust.

Thus the success of a collaboration and the execution and implementation of the alliance strategy relies on leading human, information, and organizational capital that is external to the organizational structure. Moving to an open innovation paradigm involves significant organisational change in the firm that is willing to adhere to its principles. Chiaroni *et al.*, (2009) contend that the implementation of open innovation takes place in a multi-phase organisational change process involving three phases: unfreezing, moving and institutionalisation. Besides suggesting that open innovation as an organisational change process occurs through an unfreezing–moving–institutionalising sequence, Chiarono *et al.*, (2009) also identify four managerial levers that are important for open innovation to take place. They are: networks, organizational structures, evaluation processes and knowledge management systems. The study shows that the starting point of the process of implementation of open innovation is in the organisational structures lever. The study further shows that the firms' network of customers and suppliers play a marginal role at least in the first phase of the process. Individual social networks are also pivotal in the implementation of open innovation while a deep change takes place in the processes and evaluation metrics (Chiaroni, *et al.*, 2009).

The collaboration efforts of firms many times yield positive results, however failures have also been reported (Duysters *et al.*, 2004). Das *et al.*, (2000) report that despite the increase strategic alliances, alliance performance has remained weak (Das & Teng, 2000). Strategic alliances can encounter difficulties which may often lead to disappointing firm performance (Larsson, *et al.*, 1998). Open innovation may involve multi-faceted problems. Open innovation involves considerable transaction costs for the search and evaluation of external partners and in fact it is difficult to get access to external partners (Chesbrough, 2003b; Omta & Rossum, 1999). Open innovation also entails intellectual property considerations which may hinder implementation of open innovation (Keupp & Gassmann, 2009). Embarking on an open innovation paradigm also involves many managerial challenges to implement as deeply engrained mindsets need to be changed (Chesbrough, 2003b). Open innovation can also lead to a firm's resources being exploited by another firm given that intellectual property rights are difficult to protect and benefits from innovations difficult to appropriate (Dahlander & Gann, 2010).

In an alliance, a firm may also face issues regarding protecting themselves from the opportunistic behaviour of the partners to retain their core proprietary assets and leakage of critical know-how and information (Hamel, 1991; Kale, Singh, & Perlmutter, 2000). In collaborations in general the partnering players, contribute capabilities that are superior to those available internally and craft agreements that protect them against partner opportunism (Hennart & Zeng, 2005). Besides, since not all alliance partners are equally adept at learning, the asymmetries in learning alter the relative bargaining power of partners (Hamel, 1991). Realising the benefits of capturing and internalizing knowledge from alliance partners needs the discipline of developing an alliance learning capability (Grant & Baden Fuller, 2004).

7. Organizational Citizenship Behaviour

Organizational citizenship behaviours are discretionary, extra-role behaviours of employees which go beyond the prescribed formal roles, are not directly or explicitly recognized by the formal award system and are known to be contributing factors of organizational performance (Organ, 1988; Organ, Podsakoff, & MacKenzie, 2005). In a rather influential book, *Organizational citizenship behaviour: The good soldier syndrome* (1988), Organ argues that good citizenship behaviour is characterized by traits of altruism, conscientiousness, sportsmanship, and courtesy among the employees. Organ however recognizes that in isolation any one instance of OCB may be insignificant, but in the aggregate this discretionary behaviour has a major beneficial impact on organizational operations and effectiveness. Later in 1997, Organ acknowledged the conceptual difficulties and ambiguities associated with OCB being discretionary and unrewarded (Motowidlo, 2000) and re-defined it as "performance that supports the social and psychological environment in which task performance takes place" (Organ, 1997).

The pioneering researchers of OCB emphasized that OCB should be viewed as extra-role and organizationally functional and separate from in-role job performance (Bateman & Organ, 1983; Smith, Organ, & Near, 1983). This, according to Graham (1991) created the difficulty of determining what is in-role and what is extra-role. To remove this difficulty, Graham proposed a second approach based on research of civic citizenship in philosophy, political science, and social history arguing that organizational citizenship can be conceptualized as a global concept that includes all positive organizationally relevant behaviours of employees. This conceptualization of organizational citizenship thus encompasses the traditional in-role job performance behaviours, organizationally functional extra-role behaviours, and political behaviours, such as full and responsible organizational participation (Dyne, Graham, & Dienesch, 1994).

Several nomenclature have been used to describe extra-role behaviour such as organizational citizenship behaviour (Bateman & Organ, 1983; Graham, 1991; Organ, 1988; Schnake, 1991; Smith, *et al.*, 1983), civic organizational behaviour (Graham, 1991), organizational spontaneity (George & Brief, 1992), contextual performance (Borman & Motowidlo, 1997b), prosocial organizational behaviour (Brief & Motowidlo, 1986), counter role behaviour (Staw & Boettger, 1990) and contextual performance (Borman & Motowidlo, 1997a). Notwithstanding this diverse vocabulary, all of these concepts aim at identifying a work behaviour among employees that leads to organizational effectiveness (Dyne, *et al.*, 1994). Organizational citizenship behaviours (OCBs) performed by the employees of a firm surpass the minimum role requirements expected by organizations and promote the welfare of co-workers, work groups, or the organization. At the same time, organizations rely on the employees' practice of OCBs so as to help their colleagues with problems, promote a positive work climate, tolerate inconveniences without complaint, and protect organization resources (Witt, 1991).

Positive employee voluntary behaviours like acting cooperatively, suggesting ways to improve the product, and promoting a positive climate, which Organ termed as OCB are manifested by the activities directed toward other members in the workplace or the organization, and may include helping co-workers, communicating new and critical information, maintaining a conscientious attitude toward the work environment, actively participating in decision processes and discussions, and refraining from complaining about minor irritants (Yen, Li, & Niehoff, 2008). Three main types of behaviours are required for high organizational effectiveness: one, people must join and remain in the organization (employee retention rate); two, employees must stick to the in-role behaviour which is performed in accordance with formal role descriptions; and three, extra-role behaviour which goes beyond the formal requirements of the role must be practiced (Katz & Kahn, 1978). The in-role behaviour expected of an employee is usually codified in job description or role requirement. However, for increased organizational effectiveness, the employees must also practice the extra-role and engage in cooperative behaviour which goes beyond what is stated in their role descriptions. OCB is a term used to describe such extra-role and employee cooperation.

While OCB has been given several nomenclatures, it has also been variously dimensionalized and operationalized. Smith *et al.*, (1983) proposed 'altruism' and 'generalized compliance' as the components of OCB. In 1988, Organ proposed 'altruism', 'conscientiousness', 'courtesy', 'civic virtue', and 'sportsmanship' as the five dimensions of OCB (Organ, 1988). Dyne *et al.*, (1994) proposed 'organizational obedience', 'interpersonal helping', 'organizational loyalty', and 'organizational participation' as the OCB dimensions. Podsakoff *et al.*, (1994) proposed 'helping behaviours', 'sportsmanship' and 'civic virtue'. However the dimensions of OCB as proposed by Organ (1988) have become widely accepted as they comprehensively represent the constructs on extra-role behaviour or voluntary behaviour proposed in previous studies (Yoon, 2009). To operationalize the construct of OCB, this study uses the OCB dimensions proposed by Organ (1998). These dimensions of OCB have been found to be widely used by most of the researchers investigating this construct and are considered the standard measures of this construct. The five dimensions are:

1. **Altruism** refers to the voluntary behaviours. It occurs when one employee aids another employee in completing his/her task under unusual circumstances (Organ, 1988). For instance, being cooperative, helpful and other instances of extra-role behaviour, which helps a specific individual with a given work related problem (Podsakoff, Scott & Philip, 1990).
2. **Conscientiousness** refers to the extent of behaviours to which someone is punctual, high in attendance and goes beyond normal requirements or expectations. In other words it refers to an employee performing his/her assigned tasks (in-role behaviour) in a manner above what is expected (Podsakoff, *et al.*, 1990).
3. **Courtesy** refers to behaviours that are aimed at preventing future problems, which is different from altruism because altruism is helping someone who has a problem, while courtesy is helping to prevent problems, performing thoughtful or considerate gestures towards others (Podsakoff, *et al.*, 1990). In the words of Organ (1988), courtesy includes behaviour such as "helping someone prevents a problem from occurring, or taking steps in advance to mitigate the problem".
4. **Civic virtue** involves support for the administrative functions of the organization. It consists of those behaviours that are concerned with the political life of the organisation (e. g., attend meetings, engage in policy debates, and express one's opinions in implementing a new policy). Derived from Graham's concept of organizational "citizens" who are willing to participate actively in organizational governance and monitor the environment for possible threats and opportunities even at personal cost, Civic virtue refers to employees' commitment to the organization as a whole (Ackfeldt & Coote, 2005; Graham, 1991; Yen, *et al.*, 2008).

5. **Sportsmanship** refers to stressing the positive aspects of the organization instead of the negative. In other words, sportsmanship describes those individuals who tolerate the annoyances that are inevitable in the workplace a set of behaviours that demonstrate tolerance of less than ideal conditions at work without complaining (Podsakoff, *et al.*, 1990). Sportsmanship refers to maintaining a positive attitude by employees even when things go wrong or when there are minor setbacks, and their willingness to give up personal interests for the good of the organization by, for example, not complaining about trivial matters or not finding fault with other employees.

Several studies have studied the relationship between different elements of organizational citizenship behaviour and organizational performance. The emerging literature suggests that OCBs can be positively and negatively related to various measures of individual and organizational performance (Ackfeldt & Coote, 2005). The positive contribution that organizational citizenship behaviours (OCBs) make toward business performance is also well accepted in the literature (Podsakoff & MacKenzie, 1994; Podsakoff & MacKenzie, 1997). Organizational citizenship behaviours can contribute to organizational performance as these behaviours provide an effective means of managing the interdependencies between members of a work unit and resultantly increase the collective outcomes achieved. OCBs also enhance organisational performance in that practising the dimensions of OCB lubricate the social machinery of the organisation, reducing friction, and increasing efficiency (Bateman & Organ, 1983; Smith, *et al.*, 1983). OCBs may also reduce the need of organizations to devote scarce resources to maintenance functions. Fewer resources devoted to maintenance means more resources available for immediately productive purposes. (Organ, 1988; Smith, *et al.*, 1983).

Nielsen *et al.*, (2009) meta-analytically reviewed 38 independent samples and suggested that a positive overall relationship between OCB and performance. Many more such studies establishing a positive relation between OCB and superior performance exist (Podsakoff *et al.*, 2009; Yen, *et al.*, 2008). The results of a review of the available empirical evidence on OCB and organizational performance indicate that OCBs make important contributions to the variance in organizational effectiveness (Podsakoff & MacKenzie, 1997). Besides several other studies also consider OCB as a means of positively impacting a firm's performance (Dunlop & Lee, 2003; Ehrhart, *et al.*, 2006). Besides impacting performance of a firm, OCBs also have implication on the managerial evaluation of the employees. Although organizational citizenship behaviours are not easily enforceable by the threat of sanctions because they extend beyond formal role requirements (Smith, *et al.*, 1983), managers may give better evaluations to employees who perform OCBs because this may help the managers to focus on and devote their time to more important activities like planning, scheduling, problem solving, and organizational analysis that enhance the manager's personal effectiveness.

While the link between OCBs and business performance has been discussed both conceptually and supported by empirical evidence as shown above, some studies have also shown the contribution of practising OCBs towards innovative performance of a firm. This relationship has however been investigated only in the closed innovation paradigm which assumes reliance on internal research and development only. There seems to be no study that investigates the relationship between OCBs and business performance as measured in terms of open innovation – a paradigm that assumes using both internal research and development and external collaborations to fuel innovation. Three main reasons exist for expecting a positive relationship between OCBs and open innovation.

First, shifting from a closed innovation paradigm to an open innovation paradigm may entail scarcity or unpreparedness of resources or teething problems. Managers cannot foresee all contingencies or fully anticipate the activities that they may desire or need employees to perform (Katz & Kahn, 1978; Organ, 1988). This is where organizational citizenship behaviours and their practice comes into picture and help in successful creation of open innovation. The employees who go the extra mile by performing spontaneous behaviours that go beyond their role prescriptions are especially valued by the management (Ishak, 2005). Therefore, OCBs shown by the employees may go a long way in ensuring success of the open innovation projects. Second, since research has shown a positive relation between OCBs and organizational performance as measured in the (closed) innovation paradigm (Jomo *et al.*, 1999), the same can be expected in the case of open innovation also as innovation is a measure of performance.

Proposition 1: *Practice of organizational citizenship behaviours by the employees of an organization facilitates the creation of open innovation.*

8. Organizational Structure

The relationship between organizational structures and innovation has been the focus of numerous studies, however understanding the effect of organizational structures in the open innovation paradigm has hardly been researched.

Several conceptualizations of organizational innovation imply that the process of innovation in an organization is a complex, multi-phased activity that moves from initiation to adoption and implementation (Pierce & Delbecq, 1977). The outcome of this innovation process is moderated, for one, by the characteristics of organizational structure which have been recognized as critical elements in influencing innovation in firms (Drucker, 2007). Organizational structures adopted by organizations exert influence on the development and execution of innovation (Menguc & Auh, 2009). Organizational structures are broadly classified into formal and informal organizational structures and the distinction between the two has been widely discussed (Chen & Huang, 2007; Cobb, 1980; Mintzberg, 1983; Pierce & Delbecq, 1977; Watson & Weaver, 2003). John and Martin (1984) define formalization as the emphasis placed on following specific rules and procedures in carrying out plan formulation, including documentation of planning activities and adherence to job descriptions. According to Pierce and Delbecq (1977), “formalization, a form of control employed by bureaucratic organizations, refers to the degree to which a codified body of rules, procedures or behaviour prescriptions is developed to handle decisions and work processing.”

Formally structured organizations tends to be more bureaucratic and are characterized by institutionalized rules, policies and routines, difficult integration across functions, less spontaneity and flexibility in its working which leads to behaviour programming and strict enforcement of rules, thereby increasing predictability of performance (Chen & Huang, 2007; Miller, *et al.*, 1984; Pierce & Delbecq, 1977). Innovation, on the other hand, demands leeway to take risk, and a formalized organization may not permit this. “A good soldier” in an organization, responsive to the formal structure of authority, may not be willing to take the risks associated with job security, promotion, salary raise or even feeling of inferiority or subordination in case of a failure in innovation. This checks innovation in a formal organizational structure (Shepard, 1967). However, while a formal organizational structure can be perceived as reflecting inhibition and inefficiency, it can also reflect order and stability (John & Martin, 1984). It enhances clarity, transparency, objectivity; and when the task is less complex, stable and routine, formalization can also streamline decision-making process and thus improve efficiency and speed (Menguc & Auh, 2009).

In contrast to a formalized organizational structure, an informal organizational structure is characterized by openness in the system which is a necessary precondition for idea initiation in the innovation process (Shepard, 1967). Sivadas and Dwyer (2000) suggest that in less formalized organizations, job profiles are relatively less structured and employees have greater freedom to perform their relevant tasks (Sivadas & Dwyer, 2000). This freedom offers room for activities that can be potential innovations. A widespread belief holds that informal organizational structures, by virtue of their flexibility and openness, facilitate and enhance innovativeness by encouraging new ideas. However since all innovations are not similar, the organizational characteristic will have different impacts on different types of innovations (Subramanian & Nilakanta, 1996). For instance, high formalization makes administrative innovation easier, while low formalization facilitates adoption of technical innovations (Daft, 1978; Damanpour, 1987). Furthermore, there is considerable consensus among scientists and practitioners that even in formally structured organizations, organizational actors use both formal and informal coordination devices to achieve their targets (Rank, 2008). Nevertheless, a review of the literature on the characteristics of organizational structures and innovation in general gives a sense that innovation is more favoured by informal rather than formal organizational structures. Given this, it is proposed that:

Proposition 2a: *An informal organizational structure is positively related to the creation of open innovation by an organization.*

Proposition 2b: *A formal organizational structure is negatively related to the creation of open innovation by an organization.*

9. Strategic Resonance

Strategic resonance is “an on-going, dynamic, strategic process whereby customer requirements and organizational capabilities are in harmony and resonate” (Brown, 2000). This definition alludes to a firm’s two distinct capabilities: internal and external. The internal dimension concerns the cohesion and strategic alignment within the functions of a firm. This also relates to social integration mechanisms with a firm’s different functions and management levels. It is important for the creation of open innovation, as it is for efficiency and competitiveness also, to have proper ‘harmonization’ between all the functions of a firm and a fit between the firm’s strategy and operational capabilities. Harmony between the strategy, research and development (R&D) and manufacturing capabilities are crucial to innovation based competitive success (Brown & Fai, 2006). Not aligning corporate strategy with strategic action can lead to strategic dissonance (Burgelman & Grove, 2004).

Strategic dissonance, Burgelman *et al.*, (2004) note is the divergence between strategic action and strategic intent. One example of strategic dissonance within a firm is that of Intel. In 1991, Intel had to scale down its RISC effort which had taken off in 1980s and reaffirm its commitment to x86CISC architecture after support for continued use of the RISC led to creation of two camps within the company with differing views about the use of RISC and CISC architectures (Burgelman & Grove, 2004). Another oft-cited real example of internal strategic dissonance is that of Xerox wherein internal strategic dissonance occurred between design and volume manufacture (Brown & Fai, 2006). In late 1970s, Xerox developed a computer called Alto which comprised a mouse, a laser printer, and a graphical user interface. This became the first personal computer but due to Xerox' internal inability of operations to volume-manufacture it, Alto could never become a commercial success.

On the other hand, the external dimension of Brown's definition relates to a firm's capabilities and the market segments in which the firm wishes to compete (Brown & Fai, 2006). This dimension relates to a firm's interactions with the external players like customers and suppliers who are a critical source of feedback in the process of innovation. As Brown pointed out resonance is about reducing the distance between a firm, its infrastructure and its customers. It is imperative for a firm to achieve harmonization with its markets on one hand, within itself on the other, and lastly between strategy makers and the operations (Brown & Fai, 2006; Brown & Maylor, 2005). More importantly, it is vital to focus on both of these capabilities simultaneously in order to come up with successful open innovations. Lack of alignment between different functions and levels of a firm internally (Clifford, 2001) and between a firm and its customers and supply network externally can lead to strategic dissonance which can impede or even kill innovation. An interesting analogy about strategic dissonance between a firm and its customers is this: once a circus (read the firm) wanted to do something unique to wow its audience (read the customers).

To this end, the circus staff worked assiduously to train a camel to walk backwards. Camels do not walk backwards, but after much hard work, the circus finally got the camel walk backwards. The time to stage the show came and everyone in the circus watched excitedly. As the camel walked backwards, the crowd kept looking on in anticipation of the unique act promised, which had already been performed but gone unnoticed as no one knew that camels do not walk backwards, or even if someone did, it did not matter. Serious dissonance had crept in between the circus and its customers. On the basis of the above discussion we propose:

Proposition 3a: Strategic resonance within the functions and levels of a firm (internal) and between a firm and its market (external) will moderate the relation between organizational citizenship behaviours and creation of open innovation.

Proposition 3b: Lack of strategic resonance within the functions and levels of a firm (internal) and between a firm and its market (external) will moderate the relation between organizational structures and creation of open innovation.

10. Conclusions

Open innovation considers porousness in the boundaries of a firm as a facilitator in creating innovation as a result of the firm's collaboration with the external players in the same or different industry (Chesbrough, 2006). This entails certain changes in the organization which, for open innovation being a new construct, many times remain hazy. This article looks at a firm's ability to create innovation in the open innovation paradigm and relates this new construct to organizational citizenship behaviours, organizational structure and strategic resonance. This paper has implications for research into organization citizenship behaviours (OCB), organizational structures, firm boundaries and open innovation. Understanding the relationship between OCB, organizational structure and creation of open innovation is crucial in increasing the rate of successful open innovations. We propose that practising OCBs facilitates creation of open innovation and that an informal organizational structure favours creation of open innovation more than a rigid formal structure.

This proposition has implications for managers particularly for those working in the open innovation paradigm. The framework developed in this article will help managers focus on internal as well as external factors required for creating successful open innovation. Among the internal factors, the organizational citizenship behaviour traits that are found to impact positively a firm's ability to create open innovation can be replicated in other departments within the same firm or across businesses. Identifying an organizational structure that favours creation of open innovation can be implemented in order to lead to successful open innovations. Regarding external factors, understanding strategic resonance conditions can help managers tap open innovations under different market conditions. Furthermore, this article has implications for typical supplier-firm-distributor relation.

Companies which heavily interact with their upstream and downstream suppliers and distributors can accrue benefits as a result of better understanding of what makes open innovation tick. This article also provides ground for empirical research into the relationships discussed. Since not much empirical research has been done into this, it would be worthwhile for future researchers to empirically test the propositions developed in this paper across different industries and sectors.

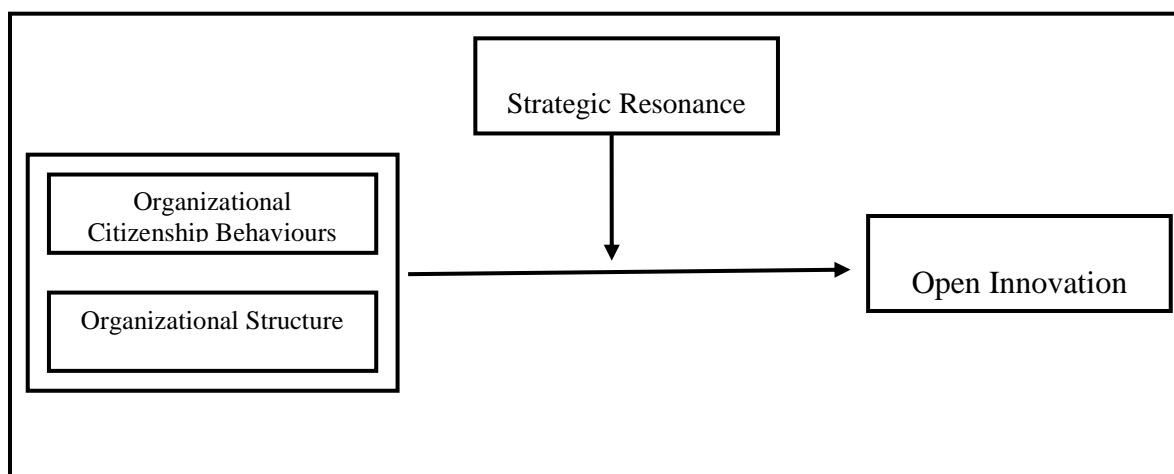


Figure 1: The conceptual framework

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