

Application of Open Innovation in Modern Organisations: Benefits and Barriers

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This paper examines the argument that open innovation is either a fad or a phenomenon. A massive amount of literature was reviewed on four open-innovation related themes - Drivers of open innovation, benefits gained by practicing open innovation, the challenges limiting its widespread adoption, and real life cases of open innovation approach. The findings reveal the following: First, motivation for openness includes the quest for increased ideas, limited complementary resources, and the perception of derived benefits. Second, open innovation enhances organisational performance in terms of increased internal knowledge base, continuous availability of ideas for product development and commercialisation, and increased bottom-line profitability. Third, the numerous real-world example of firms that openly innovate indicates that open innovation is a phenomenon and not a fad. The practical implication is that firms should strengthen their internal capabilities to seek external ideas, share information willingly, and collaborate meaningfully with external partners.

Keywords: *Open Innovation, Outbound Innovation, Business Process Innovation, Speed- to- Market*

Introduction

The concept of open innovation has dominated innovation research since its inception by Henry Chesbrough in 2003. Scholars have also made huge effort to demonstrate that competing based on openness is not only profitable but a sensible strategy (Harhoff et al., 2003; Kirschbaum, 2005; Laursen & Salter, 2006). Conversely, other scholars contend that open innovation has significant limitations and offers nothing phenomenal (Dahlander & Gann, 2007; Valkokari, 2015; Veer et al., 2013). Nevertheless, in practice, firms that adopted the open innovation approach have reported significant success in their innovation goals. Indeed, many large firms such as Walmart, Google, Amazon, and Samsung amongst others, has taken conscious effort to implement the open innovation philosophy with positive evidence on their bottom-line and productivity gains (Kale & Singh, 2007). Apart from the increasing evidence of open innovation approach in private corporations, public sector organisations, howbeit in leading countries (Lee et al., 2012) are also, with success gradually embracing open innovation in policymaking and strategy execution (Hilgers & Ihl, 2010; Padilla-Meléndez, & Garrido-Moreno, 2012).

In its simplified form, open innovation implies the propensity of a firm to open-up, embrace, and exploit external sources of knowledge (in-bound) for its developmental purposes while also being ready to give out (out-bound) information that may not be useful for the time being. Several scholars have even attempted to define open innovation while pointing out its benefits and limitations as well. One remarkable definition is that given by Chesbrough et al. (2006, p. 165) as "the purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively."

While many examples of firms adopting and benefitting from the implementation of open innovation abound, empirical literature appears somewhat silent on the drivers of open innovation adoption particularly, in a less-developed country like Nigeria. By drivers, we imply what motivate organisations- whether public or private, to consider the open innovation practice as a profitable strategy. Moreover, there is evidence where the adoption of open innovation thrives in both large and small firms. Still, the missing link in the literature is the lack of clear insight on how organisations in developing nations, particularly SMEs, openly innovate since the concept was introduced in 2003. Moreover, issues relating to real or perceived benefits of open innovation, its likely challenges, and ways of mitigating the challenges are yet to be comprehensively studied and documented. Given these unexplained gaps in the literature, one may be tempted to erroneously conclude that the practice of open innovation is a mirage and a mere academic exercise. To avoid this perception, this paper aims to critically evaluate the existing literature to justify whether open innovation is a fad or phenomenon.

In line with the stated objective, the rest of the paper is structured as follows. In section 2, the drivers or motivation for engaging in open innovation is examined. Section 3 considers the effect of adopting open innovation on organisational performance in term of its benefits or advantage, in section 4 the challenges (barriers) encountered by firms in their pursuit to adopt open innovation are identified. Section 5 gives a practical example of cases where open innovation has been implemented successfully. The last part of the paper (section 6) is the conclusion and critical reflection on the entire exercise.

Drivers of Open Innovation

Why do firms adopt open innovation? In other words, what motivate organisations, regardless of size and nature to embrace or make an effort towards adopting innovation openness? The literature appears not lacking the answers to this poser and shall provide us with guidance into the motivators or drivers of openness. To start with, Wynarczyk (2013) noted that the inability of firms, particularly the SMEs to effectively introduce own innovations that is capable of making significant market change and improvement necessitates opening up to external knowledge sources.

Dodourova and Bevis (2014) believed that lack of corresponding assets in terms of manufacturing equipment, marketing capabilities, efficient product channels and global contacts drive many firms to experiment on in-bound innovation openness. According to Wynarczyk (2013), limited financial resources, inadequate investment in in-house R&D capabilities, and the lack of relevant knowledge and technologies constitute significant reasons why firms seek opportunities for external innovation through collaboration. In addition, no one is a monopoly of knowledge, and good ideas are sometimes widely circulated with no one firm claiming its monopoly. Even in the presence of established complementary assets/resources, big multinational enterprises still find the need to leverage to their advantage, external knowledge in the form start-up university grants, suppliers-relations and inter-organisational network to achieve a competitive edge and remain stable (Ebersberger et al., 2012).

The need to innovate through peer networking (Chesbrough et al., 2006) also becomes essential given the increasing rate of globalisation and its attendant effect on product development and commercialisation particularly for firms operating in less developed nations (Spithoven et al., 2013). In many African nations, for example, SMEs are reputed for their ability to gestate and deliver innovative schemes. Still, they tend to lack the requisite resources to sustain these innovations at the commercial stage. Thus, to survive in a complex and globalised market, Lee et al. (2010) argued that open innovation by seeking and acquiring external knowledge becomes the unavoidable means to speed up, mature and sustain their innovation processes.

In a study of 156 large Dutch innovating corporations, Little et al. (2006) found that the pursuit of corporate renewal (the propensity to manufacture products in a fast and more effective manner, or to integrate new technologies in the current product); focus on firm's activities; possibility for cost reduction and process efficiency; increased profit potentials; counterbalance lack of capacity; the need to be up to speed with market development; management policy and conviction; and, the optimal utilisation of talent domicile amongst employees were the major motivators of open innovation adoption. In summary, it is not hard to state that both small and large-size firms are motivated by a variety of factors to adopt and practise open innovation. These factors may either relate to their sheer limitation in some complementary resources or the perception of derived benefits associated with open innovation as we shall see in the next section.

Benefits of Open Innovation- Linking Open Innovation to- Performance

What do firms stand to gain from openly embracing innovation? It is essential to review the literature to find answers to the question. Doing so would further deflate the argument by some scholars that open innovation is a fad (Valkokari, 2015; Veer et al., 2013). The advantages accruing to firms in their practice of open innovation is widely discussed in innovation literature (see Vanhaverbeke et al., 2008; Helena, 2013). Many firms seek to adopt innovation openness due to its perceived inherent benefits.

First, firms that adopt open innovation gain through substantial knowledge by engaging early in new technologies and business opportunities. According to Huston and Sakkab (2006), open innovation enables participating organisations to envisage developments in a large number of externally-developed inventions. This could be achieved by purchasing lesser stakes in (high-tech) start-ups, partaking in venture capitalist funding arrangement, or investing in potentially successful projects in major universities or research laboratories. This strategy is advantageous in the sense that firms learn early on about newly existing technologies. Because little investments are made at that stage, the investment can be reversed, allowing investing companies to exit. Moreover, tapping into externally-developed ideas also enhances firms' ability to scan a wide range of interesting options and investible projects. Such ideas enable firms to select and invest in profitable projects while discarding potentially risky ones.

Second, many innovating firms also benefit by speeding up on their new product development process, satisfying customer needs promptly, gaining a sustainable competitive edge, and generally decreasing the cost and the risk associated with the entire innovation activities (Harcourt & Opara, 2019). This idea is further augmented by Spithoven et al. (2013) that open innovation is advantageous for companies particularly SMEs to increase

their innovative performance, and the willingness of SMEs to collaborate increases the likelihood of timely product and service launch.

Third, Rothwell (2009) argued that openness enables SMEs to improve their technological competencies as collaborations with external sources impact positively on their bottom line, enhance human resources talents, and increase the rate of knowledge diffusion within the firm. A recent empirical study by Veer et al., (2013) in Austria, Belgium, and Denmark found that open innovation approach has a positive effect on firm performance in terms of speed of operation, delivery lead time, quality of product development and talent management. Likewise, Oke et al. (2007) found a positive association exists between innovation and organisational performance amongst SMEs. However, the lower success rate was found as a result of factors such as limited managerial resources and the unstructured approach to seeking external knowledge and implementing open innovation.

Finally, Dodourova and Bevis (2014) identified other pros of open innovation to include reputation enhancement, short time-to-market, having novel ideas to work with and develop new product and services, and reduced cost and risk for sharing R&D information for new market entry. Given the myriads of advantages covered by scholarly writers, it may not be wrong to state that organisations that practice open innovation significantly actualise their performance goals.

Barriers to Openness Innovation

The struggle to openly seek external knowledge, collaborate to gain new ideas, and integrate useful information is often stalled by several obstacles. The barriers are examined in this section. According to Lee et al. (2010), acquisition of new information, knowledge and useful technologies requires thorough scanning of the external environment. While it may be relatively easy for large MNEs in developed nations to achieve environmental scanning, it is a different kettle of fish for organisations in many developing economies. This is because environmental scanning requires considerable time, huge resources, and the use of specialised tools/techniques, and companies in emerging and transiting economies have limited human skills and material resources, compared to their counterparts in developed nations, to screen the external environment for valuable sources of information (Asfoura & Ahmed, 2020; Wynarczyk, 2013).

Besides, many firms in developing nations lack the relevant internal human expertise to translate knowledge gained from external collaboration into useful technologies and ideas for new product creation and commercialisation of innovation. Consistent with this argument is Spithoven et al., (2013) who opined that compared to MNEs, firms in developing countries experience fewer benefits from the adoption of open innovation approach because they do not

have comparable in-house managerial capabilities, and technical know-how to discern, assimilate and integrate external knowledge.

Finally, the open innovation approach requires meaningful collaboration through partnerships and knowledge sharing. According to Theyel (2013), open innovation thrives upon the right information sharing practices and partner choice. But many firms, as a matter of policy and culture, are not ready to willingly share knowledge with outside partners. Firms whose organisational culture are averse to the determined sharing of knowledge with outside partners find it difficult to reap the benefit associated with open innovation (Wang & Wang 2012). Knowledge sharing can smoothen the process of assimilating external knowledge (Foss et al., 2011). Once the acquired external knowledge is shared amongst partners, there is need for firms to discover its potential applications and also determine how to combine it with internal knowledge to make meaningful innovation in product and services (Lin, 2007).

In summary, the challenges that impede successful implementation of open innovation approach revolves around internal behavioural and structural barriers such as firm size and geographical location, managerial and technical skills capability, unwillingness to share knowledge with external partners and the lack of relevant internal resources to mitigate or overcome the challenges.

Successful Cases of Open Innovation

Despite the numerous barriers, there exist an example of cases where open innovation has been implemented successfully. It is important to note that the process of tapping into external sources of knowledge efficiently and effectively is not a simple task. For some organisations particularly, SMEs in developing countries, it takes years of learning the entire innovation process. Thus, the numerous futile efforts in exploiting and implementing innovation openness may have fueled the doubt about its authenticity by some scholars such as Valkokari (2015), and Veer, Lorenz and Blind (2013). Nevertheless, contemporary organisations are developing competencies towards successfully adapting to open innovation. Five major cases merit attention in this paper, and their success confirms that open innovation is a real phenomenon.

Association of African Business Schools (AABS), South Africa - "Solution Room"

In its annual conference, AABS co-create with attendees a plenary session called "Solution Room" which lasts for 60 minutes. The session is designed to provide an institution peer-supported solution in the form of advice and suggestions in order to solve the organisation's most demanding challenge. For instance, AABS, through its presenters, will pose a challenge that it is currently facing. Attendees are usually divided into groups of 12-15, each group

having about 20-30 minutes to brainstorm creative ideas to proffer solutions to address the challenge. Each group have the opportunity to present their solution. At the end of the presentations, the presenters will offer overall feedback to the audience, and the best solution is ultimately chosen and implemented by AABS. An important point in AABS open innovation case is the opportunity to generate workable solutions from external sources - conference attendees who were not members of staff of the organisation.

Samsung – "Four Legs of the Open Innovation"

Samsung, an electronic giant, is seen as one of the most innovative electronic companies in the world. With a strong internal R&D unit, Samsung also practices by collaborating with a tech start-up and also advocating for open innovation. The unique part of Samsung's open innovation collaboration is it "four legs of the open innovation categories " namely: *Partnerships* in terms of collaboration with start-ups in Silicon Valley; *Ventures* that involves investment in the early life of start-ups such as Mobeam; *Accelerators* which provide conducive environment and facilities for start-ups to create new products; and *Acquisitions* which bring in start-ups working on innovations that are at the core of Samsung's strategic areas of the future. An example is the acquisition of an Internet of Things (IoT) company called *Smart Things*. By collaborating with start-ups, Samsung benefits from a pool of external ideas capable of seeing to the company's continuous innovation and enhanced commercialisation possibilities throughout Samsung's life span.

Lego – Use of Community Ideas to Create New Products

Another successful open innovation case is that of Lego. Lego establishes two idea-generation sites to activates its users, namely: *Create and Share site* and *Lego Ideas site* which enable Lego community members to share their designs and Lego pictures and ideas aimed at new product development. It is done in such a way that, at the materialisation of such product idea, Lego compensate the original community members who created the idea. This innovative approach provides Lego with a bunch of new product ideas yearly. This provides Lego with a steady flow of free ideas that people are already waiting to buy.

Center for Public Service Innovation- Public, Private and NGO Collaboration

In South Africa, the Center for Public Service Innovation is another example of the successful implementation of open innovation in public sector governance. The centre facilitates collaboration amongst public, private and Non-Government Organisations to build a database of ideas that could be used in making socio-economic policies having a positive impact on the masses.



Conclusion

This paper has interrogated the notion that open innovation is either a fad or a phenomenon, and three main conclusions are drawn from the study. First, open innovation is highly beneficial for organisations, irrespective of size and nature. And for firms in developing countries, they should strive to overcome their structural and behavioural constraints to innovate and grow successfully openly. Second, though not widely documented and published, evidence abounds in developing countries of cases where organisations have successfully adopted open innovation approach as a strategy for gaining competitive edge example include the AABS, the Center for Public Service Innovation in South Africa (Lee et al., 2012). Other organisations should emulate and find ways to harness their internal resources toward achieving the objective of open innovation. Third, given the many pros (and the pros outweigh the cons) of open innovation, it is very instructive to conclude that the use of open innovation in industries and governance is never a fad but a phenomenon.

One critical lesson learned in the course of this assignment is the abundance of literature on open innovation and its usage in diverse organisations. This may suggest its acceptability amongst scholars and practitioners, thus, validating its phenomenal nature. Notwithstanding the plethora of studies on the concept, very little literature was surprising, found on how African managers and policymakers have so far embrace, practice and perceive innovation openness. Though the study of open innovation practices in the public sector by Lee et al. (2012) provided a little encouragement, only South Africa was considered. Other available ones, to the best of our search, were more of anecdotal evidence rather than peer-reviewed articles. Consequently, a call is hereby made for studies in African context examining the issues to compare and conclude whether the use of open innovation in Africa is a fad or phenomenon.

Acknowledgement: The authors express sincere gratitude to Amaka Okafor of the Business School at the University of South Wales for providing crucial access to the case study organisations used in this study



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