

BECOME AN OPEN INNOVATIVE ORGANIZATION: AN INTEGRATION CONCEPTUAL FRAMEWORK

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ABSTRACT

Open innovation has emerged as a relevant concept both in literature and contemporary business practice. The study used an objective and systematic comprehensive review of the literature on open innovation. It identifies the gaps and provides a recommendation on how open innovation can be successfully integrated into an organization. The study adopts text mining of 139 journal articles on Open innovation from only 4-star top-ranked innovation journals on OI that enables robust non-empirical analysis of how open innovation is perceived and develop a cyclical framework for successful adoption and integration of Open Innovation. The study found that open innovation has become more open and sustaining it has become more challenging. A nine (9) phase cyclical framework model has been developed to address the challenge of sustaining open innovation with the introduction of sustainable leadership as the panacea to guide the integration process. Future studies should empirically test the developed cyclical framework to validate it in practice.

Keywords: Open Innovation; Conceptual Framework; Innovative Organization; Open Organization.

INTRODUCTION

The needs of customers have become complex and managing them requires continual application of a robust innovative approach. Market and technical knowledge from within and without the organization is critical Anim et al. (2018). The open innovation (OI) concept has therefore emerged in recent times to help address the complex process of innovation and manage stakeholders' expectations. Some researchers consider the concept of OI promising Chesbrough (2003); Chesbrough & Crowther (2006); Henttonen & Lehtimäki (2017); Brockman, Khuranab & Zhongc, 2018; Moretti, & Biancardi, 2020), others think it has conceptual pitfalls Dahlander & Gann (2010); Huizingh, 2011; Stefan & Bengtsson (2017). Open innovation refers to the integration and purposive use of internal and external knowledge and collaborations to accelerate the innovation process in an organization Chesbrough (2003).

There is extant research to assess how firms' can benefit from open innovation applications Bogers et al. (2018); Lee & Walsh (2016); Henttonen & Lehtimäki (2017); Moretti, & Biancardi, 2020). These studies focused mostly on how to improve open innovation outcomes concerning effective learning, the blend of external and internal knowledge to drive innovation, governance of innovation collaborators and external partners, and risk management in external collaboration Lee & Walsh (2016); Miozzo et al. (2016); Al-Belushi, Stead, Gray & Burgess, 2018). Notwithstanding the benefits that accrue from open innovation practices, Rauter, et.al. (2018) opined that there are limited open innovation firms as extant literature failed to address the

successful integration of the open innovation practices sustainably West & Borger (2014). In buttressing their argument, West & Borger's (2014) reviews of 291 open innovation-related publications, argued that the literature leaves major gaps in the integration and commercialisation of open innovation within organisations. Moreover, Rauter, et al. (2018) maintained that the full range of potentials of open innovation has not yet been sufficiently explored, and neither does the successful integration for organizational sustainability examined. Also, West & Borger (2017) after they review the top 25 innovation journals, recommend that future research on open innovation should consider gaps such as identifying the moderating factors in the integration of open innovation and the commercialization process of innovation. The current study seeks to fulfil this gap by conducting extensive reviews of empirical literature studies to examine how open innovation practices can be integrated into organizations sustainably; while addressing the potential limiting factors in the quest to leverage open innovation within an organization. The study objective is thus to examine a step-wise approach to the successful integration of open innovation practices sustainably in a business organization Barnett & Davis (2008).

Open Innovation

Open innovation has emerged as a relevant concept both in literature and contemporary business practice Henttonen & Lehtimäki (2017); Brockman, Khuranab & Zhongc, 2018; Moretti, & Biancardi, 2020). Chesbrough (2003) introduced the concept of open innovation and refer to it as for refers to the deployment of inbound and outbound internal and external knowledge and collaborations to accelerate the innovation process in an organization. Open innovation undertakes that organizations can deploy internal and external ideas to advance their innovation drive. The process combines inbound and outbound structures and systems to create an innovative environment for organizations to thrive in meeting the changing needs and expectations of stakeholders. The whole concept of open innovation is about re-engineering business models to utilize ideas generated by internal as well as external sources for value creation within and outside the organization Cropanzano (2009).

Chesbrough (2003) argues that open innovation involves both the use of internal and external ideas as well as internal and external paths to market to advance innovation. Chesbrough and Bogers et al. (2017) posit that open innovation is a distributed innovation process based on purposively managed knowledge flows across organizational boundaries. The concept highlights the need to harness inflows and outflows of knowledge to successfully improve the innovation process. It has been widely recognized in various domains and provides to be useful in many industries Chesbrough & Crowther (2006); Henttonen & Lehtimäki, 2017; Brockman, Khuranab & Zhongc, 2018). Different from the traditional thinking of limiting innovation to research and development (RD) activities alone, OI goes beyond RD activities alone and looks at the zeal and willingness to integrate third parties' knowledge and competencies into organizational innovation drive. Rauter, Globocnik, Perl-Vorbach and Buamgartner (2018) argue that the main import of open innovation is the sharing of competencies among stakeholders beyond the value chain with implications for building external relationships. Also, Erna, et.al (2019) defined open innovation as the "*process in which companies use external knowledge to expedite internal innovations and bring new ideas to the maker and commercialize these ideas*", p.195. OI can be classified as internal and external popularly referred to as inbound and outbound. Inbound innovation focuses on new knowledge that can be gained within the firm current experiential space while Outbound Innovation focuses on external knowledge outside the firm that can be harnessed to support the innovation process (Chesrough, 2003; Chesbrough & Crowther (2006).

IO is a paradigm that assumes two-directional technological and knowledge exchanges between an organization and third parties. Hannigana et al. (2018) argue that OI can be classified as informal and formal. Much of OI studies are focused on the latter where conscious and formal collaborative arrangements are reached among the collaborating players. In the case of the Informal OI, the firms use external knowledge without any formal arrangement or collaborative agreements for any stakeholders. For instance, the use of product innovation rumours for OI drive in the organization is a classical example of informal OI Hannigana et al. (2018). Despite the potential of OI similar to regular innovation, Lewin et al. (2017) noted that many researchers have concluded that organizations are far from open and rather resistant to innovation. Reasons attributed to the resistance could be a lack of requisite enabling organizational climate to carry out potential innovation ideas that demand complex experimentations and integration across the organizational spectrum. OI can take a separate approach depending on the exigencies of the organization's business model or industry involved Du Toit & Mouton (2013).

Study Design

The study mimics the approach of West & Borger's (2014) non-empirical reviews by conducting a systematic process of reviewing the literature using content analysis as the main technique. The approach involved locating existing studies that are relevant to this study, evaluating and selecting the suitable studies, and analyzing and synthesizing their results to arrive at justifiable findings in a manner that allows clear and logical conclusions to be drawn concerning what is known and yet to be known. A three-step approach was used. First, a corpus of the search was established using the top-ranked innovation journals publication according to the Association of Business Schools (ABS). The process yielded more than 10 top-ranked journals in innovation. The study, however, limits the focus to only 4-star journals. Only two journals met this criterion: Research Policy Journal and Journal of Product Innovation Management Du et al. (2016).

A keyword search was conducted on these journals using the phrases Open Innovation and Sustainability in their title, abstract or keywords. The search was further limited to only publications within five years, 2016-2020. The essence was to review and address recent emerging issues about open innovation practices. A total of 139 articles were retrieved from the journals: the research policy journal produced 104 articles, while the Journal of Product Innovation Management yielded 236 articles. A preliminary review of the titles resulted in the exclusion of 51. A further review of the remaining articles' abstracts resulted in the further exclusion of 35. A total of 53 of the articles were very relevant to the purpose and objectives of the study and were therefore used. Also, a few seminal works on sustainable leadership (Hangreaves & Fink, 2004; Avery & Bergsteiner (2011), open innovation such as Chesbrough (2003), Chesbrough & Crowther (2006), among others were reviewed.

Conceptualized Framework for Sustainable Integration of Open Innovation

Du, et al. (2018) posit that sustainability in open innovation plays a relevant role in a firm's new product development process Bogers et al. (2017) argue that there increasing studies on open innovation but several aspects of its management remain under-studied. Gleaning from the literature on the integration of open innovation, the study conceptualized a cyclical framework to successfully guide firms to adopt and integrate open innovation practices Hargreaves & Fink (2004). A framework of nine step-wise-themes approaches with sustainable leadership at the centre of direction to the other themes is discussed.

The framework includes sustainable leadership, open innovation policy, budgeting for resources, developing an appropriate culture, identifying the source of knowledge channels, validation and acquisition of knowledge, developing an implementation plan based business model, monitoring and evaluation of innovation performance and succession planning to ensure continuity of open innovation strategies and mechanisms within the organisation Figure 1.

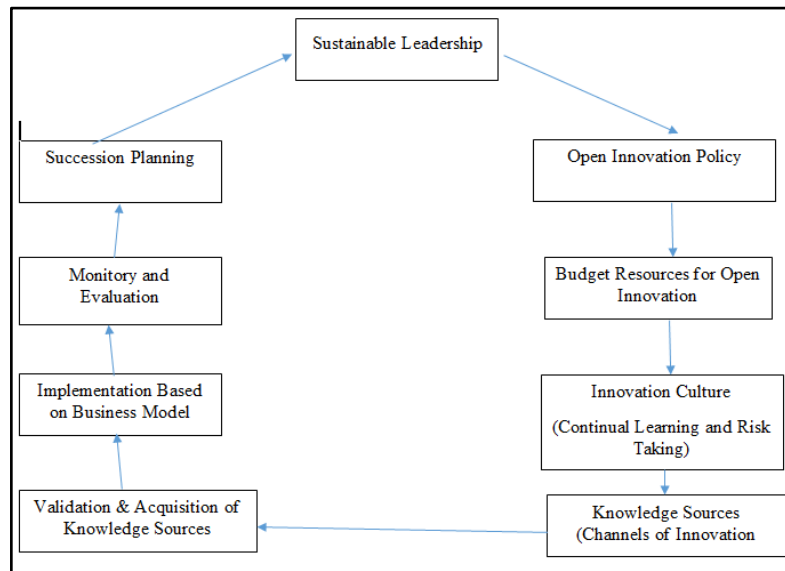


FIGURE 1
AUTHOR'S CONSTRUCTION CONCEPTUAL FRAMEWORK FOR THE SUSTAINABLE INTEGRATION OF OI (2021)

Sustainable Leadership

The contingency leadership theories argue that the appropriate leadership style is context bound on the firm's situational factors. The relationship between Innovation and traditional leadership behaviours has been the focus of many studies Rangus & Černe (2019); Jung et al., (2003). In recent times, a new leadership behaviour sustainable leadership emerged as distinct from traditional leadership types, theories, and models Burns et al. (2015); Peterlin et al. (2015). Sims et al (2009) argue that leadership styles such as transactional, autocratic and directive styles are barriers to innovation because these style appears to be controlling and stifles followers' creativity drive. Sustainable leadership is considered an approach to delivering more sustainable returns and accelerating innovation Avery & Bergsteiner (2011). Open innovation focuses on inflows and outflows of knowledge between an organization and third parties to support the innovation process. Bogers et al. (2017) argue that employees' human competencies are therefore required to critically examine the appropriateness of the knowledge to be explored and exploited. Lee & Cole (2003) also argue that open innovation requires leaders who can effectively manage human capital. Naqshbandi & Tabche (2018) argue that the nature of such leadership behaviour should be characterized by the promotion of ideas sharing among employees, and the establishment of a learning culture among employees, that support innovation drive and organizational change Hatak & Roessl (2015).

One of the contemporary leadership styles that support these features is sustainable leadership Avery & Bergsteiner (2011). Sustainable leadership focused on stakeholder value

creation, employees' development, strategic vision and meeting social and environmental responsibilities Dalati et al. (2017); Lambart, 2011; Hangreaves & Fink, 2004). Avery & Bergsteiner (2011) presented the honeybee model of sustainable leadership behaviours that organizations can adopt. A critical review of behaviours such as stakeholder consideration, shared vision, knowledge sharing and retention, strategic innovation at all levels, long-term orientation and organizational change management will have an impact on open innovation. Sustainable leaders are conscious of their internal and external environment Dalati et al. (2017) which is a key attribute of open innovation as they seek to adopt business strategies that are considered ethical and socially responsible. To successfully integrate open innovation practices, leaders must have a sustainable mindset for the organization and be flexible enough to adapt to changes within the business environment to accommodate external ideas and knowledge for innovation purposes. The study thus argues that sustainable leadership is considered the driver for the adoption and integration of open innovation practices.

Open Innovation Policy

Organisation policy provides direction for organizations. To effectively integrate open innovation, the leadership of the organization must develop and widely communicate an open innovation policy to all employees. Randhawa et al. (2016) argued that policy creates attention and awareness to inform the firm OI strategy formulation and implementation plan. This shall guide and inspire employees' sense of commitment to be innovative and open up to fresh ideas while executing professional duties. Arora et al. (2016a) posit that an innovation policy should focus on the external supply of inventions to innovators because most often firms limit their focus on local/internal sources Randhawa et al. (2016). The policy defines the mechanisms and procedural processes that employees can engage in to bring in new knowledge that can support the innovation process. Arora et al. (2016b) argue that firms' position within the industry determines how open they should be when it involves collaborations and patenting. It must be noted that before an open innovation policy is developed, firms should first assess their competitive position within the industry. Identifying the position will enable the firm to clearly define within the policy the nature of collaboration and external sources of knowledge that will be acceptable or sold out. A tentative broad list of search sources could be included in the policy to guide employees. The policy should also outline the benefits that shall accrue to employees who successfully introduce innovative ideas to enhance the operation of the organization Huizingh (2011).

Budget for Open Innovation (Resources)

Resource-based viewpoint argues that firms will be competitive if they possess resources that are rare and inimitable. Similar to all forms of innovation, open innovation could be very demanding in terms of human capital and financial resources. Lewin et al. (2017) argued that the lack of targeted resources is one of the limitations in the integration of open innovation. This study believes that firms' resources determine their absorptive capacity in the innovation process. Laursen & Salter (2006) argue that the absorptive capacity of a firm is a critical component of the integration of open innovation. Cohen and Levinthal (1990) defined absorptive capacity as the "*ability to recognize the value of new information, assimilate it and apply it to commercial ends*". To successfully integrate open innovation, the organisation must first enhance their absorption capacity fueled by the nature of the employees they recruit. Open innovation is theorized as using both internal and external sources of knowledge to drive innovation. It is thus important to recruit employees' innovation mindset as Bogers et al. (2017) noted that it takes human capital to identify

and assess the relevance of the knowledge inflows and outflows to support the firm's innovation process. In supporting this argument, Boger et al. (2016) found a positive correlation between employees' knowledge diversity and the ability to identify and absorb external knowledge. Achieving a diverse workforce that can integrate external knowledge, requires investments of financial resources from the firm to recruit a workforce with a diverse background. It is proven empirically that employees' educational diversity is positively associated with firm-level openness Bogers et al. (2018). Firms should purposefully include a budgetary allocation for open innovation at the beginning of every planning horizon, it would provide a conducive atmosphere for the integration of the practices.

Establish Innovation Culture: Continual Learning and Risk Taking

Culture plays a significant role in the organizational innovation process. Organizational culture can either be a limitation or a promotional factor in innovation. Gurtner & Reinhardt (2016) posit that culture affects the ambidextrous idea generation of firms. Idea generation is an essential starting point for innovation and if a firm culture does not support this phenomenon, innovation would not suffice. In the case of open innovation, culture is even more relevant and Bogers et al. (2017) noted that the existence of non-responsive culture is one of the barriers. If open innovation would succeed in an organization, then, the culture of continual learning, open-mindedness, teamwork, initiative taking and risk-taking are indispensable. Rational and group culture influence employees' open-mindedness, shared vision and teamwork Choa et al. (2013); Gutierrez, Llorens-Montes, & Sanchez, 2009) and this should be encouraged by firms seeking to successfully integrate open innovation. Culture affects organizational actions and behaviours. One of the cultural attributes that can affect open innovation integration is organizational learning. Employees should have a supportive culture in their learning drive as experiential learning would result in knowledge creation Argote & Miron-Spektor (2011).

In open innovation, organizations are supposed to be continually searching for new knowledge from their experience and future expectations both internally and externally and using that acquired knowledge to drive the innovation process. If the culture of organizational learning is not developed, firms and their employees will not consciously tune their minds to recognize any new knowledge that can be harnessed to support the innovation process. In our quest to integrate open innovation, it is important to first build a culture of continual learning and open-mindedness among employees of the organizations. One of the ways to build such a culture is to include words such as innovation and teamwork as part of the institutional core and shared values. Values are the sum of our preferences and priorities and help shape how employees make decisions. If this culture is established, resistance to change will be minimized and it shall enhance the organization's absorption capacity to integrate open innovation.

Identify Knowledge Sources /Channels of Innovations

It is noted that open innovation combines internal and external knowledge to drive innovation. This suggests that in open innovation, several sources of knowledge can be leveraged to enhance the innovation process. Walsh et al. (2016) argue that organizations need to consciously search for knowledge using a combination of knowledge search space to identify innovation that is relevant to solving organisational problems. The critical question that beckons answers, is where to start the search and how to search. Lopez-vega et al. (2016) asserts that is important to predetermine the knowledge categories and knowledge combinations that would provide the required knowledge competencies for the organization. The authors developed a

framework that identifies two search dimensions and four resulting search paths to guide the organizational search process. This involves search space (local search versus distant search) and search heuristics (cognitive versus experiential). The four search paths include situated paths (trial and error refinement), analogical path (recombination), sophisticated path (puzzling solving) and scientific path (breakthrough).

Arora et al. (2016a) examine the viability and effectiveness of the different search strategies that can enhance innovation. The study found that distant partners such as customers, suppliers and technology specialists (universities, consultants) were the source of knowledge that resulted in 49% of the new products introduced by organizations. The most common source of knowledge for innovation is customers but in terms of knowledge that resulted in high economic value, the major source is a technology specialist Arora et al. (2016b).

Randhawa et al. (2016) co-citation analysis and text mining of published OI articles found that OI research is predominantly inward-looking and does not sufficiently draw from other external field. Rauter et.al (2018) also argued that in a situation where external sources are used, most often the search is limited to only those directly associated with the company such as customers, suppliers, universities and technical experts' while neglecting the broader ecosystem. Rauter et.al (2018) extended the broader ecosystem to include NGOs, intermediaries, public organizations and community members and examined their relationship with sustainable innovation performance. In recent times, the media and especially social communication platforms have become a major source of information, it may be prudent to include these mediums as part of the broader ecosystem to search for knowledge that can leverage the innovation process. Du, Yalcinkaya, and Bstieler (2016) found that social media-driven open innovation enhances new product development and customer focus. Future studies should empirically examine the contribution of these search sources and mechanisms (sourcing, scouting, collaboration, licensing) to overall innovation ideas that drive organizations.

Validation and Acquisition of Knowledge

Once the sources of new knowledge are identified and an idea is generated. It is imperative to validate that knowledge or idea. Lopez-vega et al. (2016) argues that there are two types of knowledge; perceived and validated knowledge. Validated knowledge is the knowledge which has been identified to be real and can support organisation operations. It is not every new knowledge that would be relevant to the business operation. It is therefore important for firms to review and ensure that the new knowledge to acquire fits their business model Zott et al. (2011). Chesbrough (2003) posits that the successful commercialization of open innovation must be aligned with the firm's business strategy. Validation would also require that the firm assess whether its budget resources would support such innovation; whether the timing is right for the open innovation Bahemia et al. (2018); whether the employees are psychologically prepared for such organizational change to embrace the new knowledge.

If new knowledge is not validated before the acquisition, it will become a cost instead of a benefit to the firm. Validation sometimes may include examining the reputation of the external source in which the new knowledge would be acquired. It may be detrimental to associate your brand with certain collaborative partners, hence firms out to be circumspect in deciding who to partner with or collaborate with for innovation purposes. Firms should develop a criterion to be used for the validation of their sources of new knowledge. The template shall make it easy for employees to be confident about reviewing the external source of knowledge that can be harnessed for innovation.

Implementation Based on Business Model

Lewin et al. (2017) noted the absence of actionable strategy can prevent the integration of open innovation. It is thus critical to develop an actionable strategy to guide the implementation process. The implementation should be done following the firm-level strategy so as capture value for the firm Randhawa et al. (2016). The purpose for which the new knowledge was acquired should be the focus at this stage of the integration. The department and unit responsible for the implementation should be identified and the team required to work on the implementation should be inaugurated and tasked to ensure the successful implementation.

Randhawa et al. (2016) noted that if marketing perspectives are integrated into the innovation process, the firm can better understand and implement open innovation. The internal structures should be aligned with the new knowledge to deliver the value expected. Depending on the nature of the new ideas, an implementation plan and strategy should be developed with timelines Randhawa et al. (2016). If the implementation is not timely, the value to be captured will be lost Bahemia et al. (2018). It is thus expedient to develop the implementation plan with assigned responsibilities, key performance areas and key performance indicators to guide the process. Implementation is context-bound and varies from one organization to another. Firms are encouraged to adopt an implementation strategy that would ensure smooth continuity in business operation while working alongside to make the requisite changes as a result of the new knowledge.

Monitory and Evaluation

Appleyard & Chesbrough (2017) argue that innovation has become more open in recent times and the challenge of sustaining that openness is not well understood. Once an innovation is implemented, there is a need for continual monitory and evaluation of outcomes to ensure value is captured. An organization must develop and implement a monitory and evaluation (M& E) strategy to determine in advance what key indicators to use to monitor the innovation introduced. The indicators may vary depending on the adoption acquired. As part of the M& E strategy, the organization needs to identify when to change a proprietary new adoption or revised it Appleyard & Chesbrough (2017). It should also be noted that M&E should not be limited to only the new adoption but must include monitoring innovation performance, process and people. Some of the indicators that can be used to monitor may include sales growth, market share, productivity levels, and customer satisfaction level, among others Rothwell (2010).

Succession Planning

The relevance of succession planning cannot be underestimated in organisational sustainability. Innovation is a culture developed over some time and without appropriate succession plans to sustain the momentum, the culture may erode with time. Open innovation is integrated by human capital and if they are not properly mentored, they may develop apathy due to the complication sometimes involved in implementation. Supporting the need for succession planning, Santorin's (2004) Relay Succession Planning model argues that succession planning affects employee development and overall organizational performance. Hills (2009) posit that succession planning is more than filling top positions and Barnet and Davies (2008) argue that it is a deliberate effort of an institution to invest in the best current or potential performing talent at all levels of the organisation. This study argued that without deliberate efforts to empower

employees to maintain the innovation culture, the passage of a totemic leader (crusader) of open innovation may result in the departure of the existing culture. In the case of Haier, Lewin et al. (2017) found that employees are sceptical about continuity in the case of the sudden departure of the CEO who had championed open innovation for several years within the company. It can be inferred that if succession planning is well implemented, any form of replacement, as noted by Rothwel (2010) be it death, retirement or dismissal, should not adversely change operations or affect employee morale to continue with the already developed status quo of open innovation practice. Integration of Open innovation is costly and sustainable leaders must be proactive to develop and implement succession plans that keep the competencies of employees in check to meet the demands of innovation.

CONCLUSION AND RECOMMENDATION

The study review extant literature on the exploration and exploitation of open innovation. The reviews were carried out to develop a framework to guide the integration of open innovation in organisations. Integration has been identified as a critical challenge for firms wishing to practice open innovation. the framework involves components such as establishing sustainable leadership, developing OI policy, budgeting resources for IO, developing a culture of learning to support IO implementation, identifying knowledge-based sources, validating and acquiring knowledge, implementing innovative ideas based on the business model, monitoring and evaluating the IO and establish a succession plan for continuity of laid down systems and structures. Sustainable leadership is the heart of Open Innovation and the implication of the studies is that managers seeking to adopt an open innovation approach can follow through with the components espoused in the model. Future studies should empirically test the signing of the framework in integrating open innovation in organizations.

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