The Ethical Considerations of Business Artificial Intelligence Exploration Through the Lenses of the Global AI Technology Acceptance Model

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The present study aims to examine the ethical considerations about the exploration of Artificial Intelligence technology. As the field of artificial intelligence (AI) continues to grow, it is important to examine the ethical implications of its use. The Global AI Technology Acceptance Model and Innovation Resistance Theory are two theoretical frameworks that can be used to understand the impact of AI on ethical considerations. By analyzing these frameworks, we can better understand the factors contributing to adopting AI and how ethical concerns can be addressed. This paper aims to explore the intersection of these two theories and their potential implications for ethical considerations in the development and deployment of artificial intelligence. This research contributes to a deeper understanding of the ethical considerations surrounding the use of AI. It provides insights into how we can ensure that AI is used responsibly and ethically. The result of this study is of great importance given the rapid pace of technological advancement and the potential for AI to significantly impact society.

Keywords: business AI ethical considerations, business model, AI innovation

INTRODUCTION

The AI technology acceptance model was introduced in 1986 and was once considered an influential and common theory to describe someone's acceptance of a specific AI technology (Davis, 1986). The AI technology acceptance model depends on two variables: perceived usefulness and perceived ease of use (Lee et al., 2003). This theory helps to identify the gaps of the previous research as to the "why" someone will accept or decline innovation.

Innovation resistance theory was discussed first in the seminal works by Ram (1987) but later modified by Ram and Sheth (1989) to describe why consumers resist new innovations. In the seminal works of Ram and Sheth (1989), they stated that a consumer will resist innovations if the innovation either changes their lifestyle and status. A simple version of innovation resistance theory, known as *active innovation resistance*, can be defined as a pessimistic view that does not meet users' tolerance and gives a negative attitude towards the innovation (Sadiq et al., 2021) and is a main driver for innovation rejection (Joachim et al., 2017).

Innovation resistance theory and active innovation resistance used in the theoretical foundation as reasonings for consumers and employees to reject innovations that could improve the overall easiness of a job function or quality of life. Both innovation resistance theory and active innovation resistance have three

similar foundations of innovation rejection: postponement, opposition, or outright rejection (Szmigin & Foxall, 1998).

INNOVATION DEFINED

The term *innovation* is examined in several scientific or technical sources and is highly discussed in management and economics (Godin, 2008). Before the term was widely used, the terms *invention* and *creation* were preferred to describe new products and/or services (Godin, 2008), and have become a solution or even the concept of innovation for socioeconomic issues worldwide (Godin, 2020). The difference between *invention* and *innovation* is that an invention is a new idea or concept, while innovation is making the new concept successful or extensive use (Simsit et al., 2014).

When organizations fail to innovate, they do not survive (Chesbrough, 2003). Innovation is defined in several ways. For this research study, innovation is described as making products and services better than continuous or incremental innovation (Morris, 2013). Innovation is a concept introduced by Joseph Schumpeter in 1911, where he stated that innovation is when an organization launches a new product or upgrade of a new product, a new method of production or sales, the opening of a new market, a new industry structure that either creates or destructs a monopoly, or the acquisition of a new source of raw or intermediate goods (as quoted in Landini, 2020). In the Oslo Manual (OECD/Eurostat, 2018), which provides guidelines for collecting and interpreting innovation data, it is stated that "An innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)" (p. 20).

HISTORY OF INNOVATION

Although innovation has always existed, it was not always called "innovation." It was not until the 1930s that Austrian economist Joseph Schumpeter started to study how innovations affected the capitalist system. He explained that, whether the opening of new markets was foreign or domestic, the old process was being destroyed and a new process, which he named *creative destruction*, would form (Edwards-Schachter & Wallace, 2017). The changes in AI technology drive growth and development but have also been the causes of the expansion of cities, regions, and the global economy (Godin, 2017, p. 1).

Innovation in the 21st century is growing rapidly. Companies are advancing to higher levels, and the leaders in different industries making a profit are the ones who can step out of the box, evolve, and allow their innovation to be competitive. Organizations that lack change or innovation will not survive (Galetic & Vukelic, 2017).

The adoption of innovation models from the consumer side is discussed in Rogers's model known as the basic innovation adoption and diffusion model (Rogers, 1983). In this model, there are three steps: (a) the invention of the idea, (b) the development of production and testing, and (c) the diffusion to and adoption by users (Rogers & Schoemaker, 1971).

INNOVATION IN ORGANIZATIONS

IBM, HP, Xerox Corporation, and Bell Labs are just a few organizations that took innovation to a new level at their peak. Xerox Corporation led the industry in copying machines (Chesbrough, 2006). Xerox also created the Palo Alto Research Center (PARC) where it developed innovations, developed them into products, and sought to distribute these products to make a profit (Chesbrough, 2003, p. 4). A couple of the innovative ideas from Xerox's PARC are 3COM and Adobe, which are still running at the time of this research study, publicly.

3Com was founded by Robert Metcalfe and David Boggs in 1979, and its products were an idea developed at the PARC. 3Com created products such as the network interface card (NIC), dial-up modems, and protocols that helped shape the history and early beginnings of the Internet and network devices. First,

these ideas were completed at the PARC, where Xerox held onto the idea but did nothing about it. This caused Robert Metcalfe to leave Xerox and incorporate 3Com, which acquired USRobotics in 1997. 3Com and USRobotics had a combined revenue of \$5B (CNET, 1997). 3Com was acquired by Hewlett-Packard in 2009 for \$2.7B (Hewlett Packard, 2009).

Adobe Inc., another product from Xerox's PARC, was founded in 1982 by John Warnock and Charles Geschke (Warnock & Geschke, 2019), who developed a programming language that was specifically for the use of printers to provide digital fonts that could be printed on practically any device (Warnock, 2018). Adobe officially went public on August 20, 1986 (Adobe.com, 2020) and has developed applications such as Adobe Acrobat Reader, which contains the international standard of a portable document format (PDF) ISO 32000-1:2008 (Acosta-Vargas et al., 2020).

Netflix is another example of innovating how consumers "rent" a movie for their Friday nights. When Blockbuster and Hollywood Video had a great deal of market share on renting VHS videos, Netflix established a service to rent DVDs by mail in 1997 (Netflix.com, 2023). By offering a subscription to consumers for allowing unlimited DVD rental without due dates or late fees, allowed Netflix to grow their membership to over 5M by 2006, less than ten years of the idea (Netflix.com, 2023).

INNOVATION CAPACITY AND TYPES

There are several types of models of innovation. For this quantitative research study, I will define the following models of innovation: open innovation (OI), closed innovation (CI), disruptive innovation (DI), and free innovation (FI). The main differences in these innovation models are where the innovation or inventions have been created and how they are accessible to communities and organizations, either inside or outside of their organization. OI is a phenomenon where organizations utilize the knowledge of internal and external innovation from other organizations (Chesbrough, 2005, p. 1). OI has spread beyond firm-to-firm collaborations particularly in supply chains and ecosystems, and is becoming more difficult to detect (Chesbrough, 2019). An example of OI is Mozilla. Mozilla is an open-source software application that allows developers world-wide to advance their products, or simply-report bugs within their software and offer a fix of the application.

CI is where an internal innovation is created, but not made available to the public, and where the organization is focused internally and typically will hire the smartest people in the industry to come up with ideas or inventions, but not share the knowledge outside of the organization (Alawamleh et al., 2018). An example of CI would be where Apple is developing its latest and greatest iPhone, and during this production there are a few individuals that know about the AI technology but will not leak any of the information to the public.

DI is a model rarely discussed by researchers in AI technology or the business sector, and "dramatically disrupts the current market" (Schmidt & Druehl, 2008, p.347). Schmidt and Druehl (2008) described DI as a new product that invades the existing market on the low end and diffuses upward. DI is often confused by any new threats or changes in any industry (Christensen, McDonald, Altman, & Palmer, 2018).

FI is the developed innovations that consumers gave away as a free good or service resulting in advancements in social welfare (Von Hippel, 2016, p. 1). An example of FI is Amazon's usage of cameras to detect whether its warehouse workers were following social distancing rules during the COVID-19 pandemic. Amazon engineers were able to provide real-time feedback to their employees when they were working in their warehouses; they referred to these systems as *distance assistants*. Amazon later published the source code and instructions on how to build this concept for the public for free, which makes it FI. Von Hippel (2016) described different types of innovation regarding FI research studies. In his book, he noted that several categories were being studied, including craft and shop tools, sports and hobbies, and categories related to dwellings, gardening, children, vehicles, pets, medical, and computer software (Von Hippel, 2016).

INNOVATION MANAGEMENT

Innovation management has recently been a trend in managing what organizations should be investing in. Like all other types of management, such as people, resources, and money, innovation management is becoming popular in organizations. Like knowledge management, innovation management is defined as the discipline of process management in innovation to develop a product, process and/or organizational innovation (Simsit et al., 2014). The innovation management framework, absolute innovation management (AIM), is to help provide a deeper understanding of innovation and how to make it more implementable (Aslam et al., 2020). Nambison et al. (2017) explained that as technologies change, which essentially changes organizations, innovation management should be researched to incorporate concepts that reflect and capture the ways in which technologies are changing (Nambison et al.).

With AI technology emerging, a new concept called digital innovation is on the rise. Nambisan et al. (2017) described digital innovation as the usage of digital AI technology during the innovation process. Take the digital innovation definition to a new level and describe digital innovation as a process that involves all work associated with creating and developing a new digital product but does not limit these innovations to sales and distribution (Khotamov & Avazoz, 2020).

ADOPTION OF INNOVATION

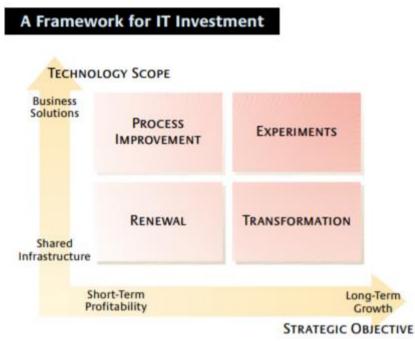
Not all organizations will decide to innovate. Those that do not innovate can survive within their business. Determining how long an organization can survive without innovation is not part of this quantitative study. Yun (2020) stated that organizational performance has two parts: (a) Organizational performance impacts innovation adoption early on which can be negative for organizations with low performance and positive for organizations with high performance. And (b) "adoption of an innovation is positively influenced by direct experience (p.808)."

For an organization to adopt innovation, the organization must adopt the innovation successfully to accomplish or succeed in organizational performance (Boyne & Gould-Williams, 2005). Michael Aiken and Jerald Hage (1970) created the innovation adoption process and divided the process into four stages: evaluation, initiation, implementation, and routinization (Hage & Aiken, 1971).

INVESTMENT

Organizations have several types of investments such as real estate, employee, long-term, short-term, etc. For this research study, I will concentrate on IT investments of organizations such as process improvements, experiments, transformations, and renewals involving innovation. IT investment categories such as enterprise resource planning (ERP) tools, hardware, software, and network infrastructure are just a few categories that will be discussed. Strategic objectives and the AI technology scope are two dimensions that were reviewed for IT investments. Ross and Beath (2002) interviewed 18 different companies and found the following IT investment framework useful. The framework is highlighted in Figure 1.

FIGURE 1 A FRAMEWORK FOR IT INVESTMENT



Note. From "Beyond the Business Case: New Approaches to IT Investment," by J. W. Ross & C. M. Beath, *MIT Sloan Management Review*, 2002 (https://sloanreview.mit.edu/article/beyond-the-business-case-new-approaches-to-it-investment/).

Process improvements is an efficient way to identify, analyze, and improve an existing process by an organization to enhance performance or improve the quality of the user experience for either a customer or end-user. An experiment may result in a process improvement by simply trying a new way of performing a process to improve efficiency. An experiment does not always result in a process improvement and should be determined on efficiency and final cost or savings of the experiment in its result.

A transformation investment is usually necessary when an organization's infrastructure reduces its capacity to improve products to a long-standing success (Ross & Beath, 2002). A renewal is where something has become outdated, but still has its value and is renewed. An example would be Microsoft Office 2007 being renewed to Microsoft Office 2010 and then to Microsoft Office 2013 (Chuwku & Kasztelnik, 2021).

ORGANIZATIONAL PERFORMANCE

Most organizations have objectives that are measurable and tend to be profitable. In a recent study, researchers represent organizational performance in multiple dimensions where the management and organization itself impacts the concepts of efficiency, effectiveness, and financial performance (George et al., 2019). Without measuring organizational performance, organizations have no real purpose to survive without the established goals and/or objectives (Khalid et al., 2019). Ahmed (2018) defined organizational performance as an organizational performance and internal environment.

Organization performance is typically defined as the ability to achieve the goals and objectives that an organization sets quarterly, annually, or in its mission statement. An organization's performance is usually measured by the success of profits and the return on assets, equity, sales, and investments (Rahman et al., 2018). The performance of an organization is a key performance measurement of its outcome and, while

innovation may be risky, innovation generally has a positive outcome for an organization's performance (Walker et al., 2015).

INNOVATORS METHOD

Furr and Dyer (2014) researched both quantitatively and qualitatively organizations that were either successful or unsuccessful in implementing innovation. The companies that were researched fell into four different categories (1) companies that maintained innovation capabilities after founding, (2) companies that had lost their innovation capabilities and then reignited them, (3) successful and failed innovation initiatives in new ventures, and (4) successful and failed innovation initiatives in established companies (Furr and Dyer, 2014, p.20).

The method Furr and Dyer (2014) found that was successful in adapting innovation within an organization were to follow the steps of: (1) *insight*, (2) *problem*, (3) *solution*, (4) *business model*, and (5) *scale it* (p. 19). Furr and Dyer (2014) also found that between three to five years of adoption, publicly traded companies that adopted innovation elements, their innovation premium scores rose over 57% (p.21).

CONSUMER ACCEPTANCE

In several of the theories mentioned in the theoretical foundation section of this paper, the innovation diffusion theory was highly discussed and mentioned innovators to laggards. The AI technology acceptance model coincides with the perceived ease of use where a person's perception of using AI technology is beneficial and accepted. Research shows that a consumer accepts innovation that is a service when the service is easy to use (An et al., 2023).

Perceived usefulness is another factor influencing consumers to adopt innovative technologies (Alsyouf et al., 2023). When a product or service is not easily adoptable to a consumer, consumers can reject it until it becomes simple to use.

INNOVATORS

As previously stated, innovators are open-minded people who will freely try new products or services immediately (Halton, 2021). Research shows that an innovator's characteristics have different social behaviors and communication styles than those that are non-innovators (Colladon et al., 2023). Innovators also tend to use complex language and positive, factual-based language; innovators are those with a higher level of education, self-confidence, and tolerance for vagueness (Maddi, 1996).

LAGGARDS

Laggards are those on the opposite side of an innovator. They are skeptical and conservative about innovations (Ruokamo et al., 2023). And, as previously defined, a laggard is typically forced into using a new product or service. Muduganti et al. (2005) researched the characteristics of laggards, late majority, early, majority, early adopters, and innovators within a bell curve and defined laggards of an attitude range of 1-3. Their research simulated that laggards' adoption rate of IT innovations will adopt IT innovations when there are low intentions of adopting AI technology. Laggards may be sometimes known as the older population due to the newness of several types of technological advancements in the past 20 years.

CONCLUSIONS

We reviewed the literature of several studies and theories that will be used in this quantitative correlational study. The themes found in the literature suggest a correlation between innovation management and an organization's firms' performance. The theories discussed, such as the AI technology acceptance model and innovation resistance theory, explain why innovation is accepted or not. A new

industry that uses technological improvements and innovative ways to get the product from seed to sale, particularly artificial intelligence (AI), I feel that my experience in adopting innovative AI technology or procedures qualifies me to understand strategies of other organizations that might engage consumers and organizational employees in finding more information on these topics of consumer acceptance and innovation management as it relates to organizational performance.

The major gap in the literature review is that not all organizations have innovation management departments or teams. Yet, some organizations can excel and understand the consumers' innovation acceptance without innovation management. While some organizations have innovation or knowledge management, this research study will be able to understand on the "why" some organizations can be more successful than others that have knowledge or innovation management while others do not care can still be successful in their performance.

The implication for positive social change is to show the potential of management innovation, which could promote professional development and performance strategies. Results from this study may show the importance of investing in AI technological advances or innovative initiatives that will support long-term sustainability to an organization. Internal to an organization, leaders can justify the reason to manage innovation and expose innovative practices that may improve their performance. The results of this study may also show that an organizational leader or leaders can also lead their organization to improve innovation to where the study results may show that management innovation can be resourceful in their organizational performance. The implications for positive social change may also show how business owners can improve their organizational performance to create job opportunities, resulting in a more competitive, sustainable environment within their selected industry.

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