

Leadership Perspectives on Emerging Technology Readiness: Basis for Developing an Organizational Framework for Philippine Industries

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Abstract

The advent of emerging technologies, including artificial intelligence (AI), robotic process automation, and data analytics, is changing how businesses conduct operations, compete, and innovate. This study aimed to explore the awareness, perspectives, and organizational practices of middle managers and executive leaders regarding emerging technologies and to develop an Emerging Technology Readiness Framework to guide organizations in technological adoption. A qualitative exploratory design using semi-structured interviews with twelve (12) leaders from various industries in the Philippines (IT, education, health care, retail, construction, transportation, and business process outsourcing) was used for the data collection. Results revealed that while the majority of leaders showed an awareness of new technologies, their level of understanding varied significantly by industry and by their respective organizational contexts. The adoption process for new technologies typically follows a strategic and cautious approach based on administrative considerations (costs, complexity, skilled workforce, uncertainty, etc.). Leaders in this study identified four (4) barriers to the successful adoption of technology: high costs associated with implementation; an insufficient supply of skilled workers; resistance to change; and a lack of necessary infrastructure, especially among micro, small, and medium enterprises (MSMEs). Additionally, the findings indicated that leadership is the primary driver for the successful readiness of new technologies and that a leader's effective use of their strategic vision, workforce development, infrastructure readiness, governance, and continuous evaluation is critical to achieving readiness. In conclusion, the research suggests that new technology cannot be adopted successfully unless a holistic and integrated approach is used. Therefore, an integrated and structured framework to supporting organizations increased digital readiness and transformation should be developed.

Keywords: Emerging technologies, Organizational readiness, Technology adoption, Digital transformation, Framework development, Philippines

Introduction

Artificial intelligence, robotics, automation, data analytics, Internet of Things applications, digital platforms, and immersive technologies are the emerging technologies that are transforming the way organisations operate, compete, and innovate. The technologies are often attributed to Industry 4.0 which is the era of integrating digital, physical, and intelligent systems into business processes and decision-making procedures (Choi, 2020; Javaid and Haleem, 2020). In any industry, the organizations deploy more sophisticated technologies that are not only aimed at minimizing the cost, but ensuring the enhanced customer -

involvement, service delivery, quicker decision-making process and responsiveness to the market. The issue of readiness to emerging technology now is strategic and not a technical one in this environment. The potential of new technologies is particularly pronounced in those industries that require speed, flexibility and decision-making that is based on data to define competition. Artificial intelligence can be used by companies to handle massive amounts of data and predictive insights that enhance service provision and planning (Prabhakar, 2025). Robotics and automation also assist in minimizing error and maximization of consistency, especially in settings requiring routine, precision and magnitude. Data analytics enables leaders to keep track of their performance, predict demand, and make decisions that have evidence instead of guesses. These technologies are seen in manufacturing in terms of productivity and intelligent operations. They facilitate diagnostics, scheduling and management of data in health care. They enhance personalization and engagement, logistical and operational efficiency in education, hospitality, retail and logistics. Consequently, a new technological tool has become an important subject of the discourse on innovation, organizational resilience, and long-term competitiveness (Lee et al., 2021; Vial, 2019).

Organizations that are more digitally mature tend to be faster to embrace emerging technologies at the global level as they have superior infrastructure, more mature talent flows, and leaders that are expert in innovation strategy. The studies indicate that companies, whose leaders have digital capabilities, are more prone to invest in sophisticated tools and have a positive attitude towards testing new systems and coordinating technology efforts with business strategies (Mishrif and Khan, 2023; Maroufkhani et al., 2020). Bigger companies can afford to invest in digital transformation both in terms of finances and organization and smaller businesses are taking slower steps towards the same since adoption constitutes an opportunity and a risk at the same time. Nonetheless, this does not mean that the change direction is unclear. Those organizations which do not embrace the emerging technologies can lose effectiveness, strategies and become less competitive in the long run.

The debate about new technology trends is increasingly loud in the Philippines but with an uneven uptake. Although companies in the large segment are intensifying their artificial intelligence, automation, online platforms, and analytics use, smaller thousands of organizations, micro, small, and medium enterprises, still experience ample organizational barriers that create a sluggish pace of technology implementation. High costs, limited training access, un-developed digital network, and lack of technical capacity are recurring barriers to the adoption of technologies in the studies and policy reports on technological use in the Philippines (Department of Trade and Industry [DTI], 2020, 2022; Quimba, Moreno, and Salazar, 2024). According to a report by Philippine Institute of Development Studies, a minor fraction of firms is utilizing AI in order with their usage being centralized among organizations with larger capital and organizational aptitudes. Equally, a study of smart manufacturing technologies within the Philippine MSMEs discovered that despite the existing awareness of technological applications in robotics, Internet of Things, artificial intelligence, augmented reality, and 3D printing, their application is still low and uneven when the results were commissioned by the firm size category (Barroga, Wabina, and Sales, 2021). These results indicate that readiness and implementation cannot be assured by awareness.

The difference in level of awareness and adoption is of concern especially since technology decisions are influenced by leadership. Middle managers and executive leaders affect the way organizations perceive technological change, whether they see value in its adoption, and which risks take precedence, and resource allocation. Leaders define whether technology will be a strategic priority, whether the employees are ready to change, and whether the systems will be oriented towards change. When the leaders possess low knowledge on the emerging technologies, the adoption can be delayed, uncoordinated or reactive. On the contrary, with the leaders endowed with technological awareness and strategic clarity, it is more prone to seek innovation as a strategic choice, in line with longer-term objectives (Gonzalez-Varona et al., 2024; Tursunbayeva and Chalutz-Ben Gal, 2024).

There are various theoretical lenses that can explain the importance of leadership in preparing organizations to the new technologies. Technology Acceptance Model suggests that Gullibility to use technology is dependent on the perceived usefulness and perceived ease of use (Davis, 1989).

Though the model initially targeted at the user on an individual basis, it can be applied to a leadership situation since leaders also go through the evaluation of whether a certain technology is useful, manageable, and in line with the organizational needs. Diffusion of Innovations is a theory that describes how a knowledge of a technology is developed and the stages of innovation that diffuses through the process including knowledge, persuasion, decision, implementation and confirmation (Rogers, 2003). This view fits in the Philippine context where most organisations seem to be characterized at the knowledge and persuasion level with minimal shift to the full implementation level.

Technology-Organization-Environment framework further expands the argument by providing the fact that adoption of technology is not just on the technology itself, but also on organizational preparedness and environmental pressure (Tornatzky and Fleischer, 1990). This is because an organization might realize the importance of a technology and still not implement it due to lack of infrastructure, funding, support by the leadership or because of competitive pressure. The Dynamic Capability Theory further examines that organizations need to acquire the skill to perceive opportunities, pursue them with calculated moves, and re-align resources in line with change (Gonzalez-Varona et al., 2024). The Human Capital Theory also plays a role in the given study by underlining that the investments in improving organizational performance require training, skills development and learning (Becker, 1993). Workforce preparedness in technology contexts cannot be disaggregated with leadership preparedness.

The current paper is based on the premise that leadership orientations provide a valuable theoretical approach to discerning why technology adoption is not even across the Philippine industries. Current studies usually concentrate on the adoption rates, the technical use, or the firm level obstacles. There is a smaller number of studies examining how leaders specify their own understanding of new technologies, their practices in terms of how they assess adoption, what organizational realities influence their decision, and what circumstances they think are required to be ready. This is a massive gap since perceptions of leadership have actual organizational behavior. Leaders make choices about whether to focus on building capabilities, whether to sanction investments, whether to redesign working processes, and whether to describe technology as a threat or opportunity.

The research thus aimed at finding out the awareness, views, and organizational behaviours of middle managers and executive leaders towards the emerging technologies in the chosen industries in the Philippines and in the selected industries. In particular, it sought to characterize how organizational executives make sense of the emerging technologies, including artificial intelligence, robotics and automation, Internet of Things, augmented and virtual reality, and data analytics; research how organizations prepare to adopt and embrace technologies; define issues of barriers and readiness that affect implementation; and design a working framework that can guide organizations on what to do in preparing to embrace emerging technologies. With the emphasis on the leadership views as opposed to the measurement of adoptions on their own, the research brings to the picture a more strategic and context-sensitive perception of the digital preparedness within Philippine environment.

OBJECTIVES OF THE STUDY

The main concern of the study is to explore the awareness, perspectives, and organizational practices related to high-impact technologies among middle management and executive leaders in key sectors in the Philippines. While high-impact technologies such as AI, robotics, augmented/virtual reality (AR/VR), the IoT, automation, and advanced digital technology are changing and accelerating industries on a global scale, some research suggests that organizations in the Philippines—specifically micro, small, and medium enterprises (MSMEs)—are still catching up with global counterparts with respect to awareness, capacity, and adoption of technology. There remains limited understanding of how organizational leaders perceive and prepare their organizations for emerging technologies.

Specifically, this study seeks to answer the following questions:

1. What is the organizational and respondent profile of the participating leaders in terms of:
 - 1.1. Industry sector,
 - 1.2. Business size,
 - 1.3. Years of operation,
 - 1.4. digital infrastructure and
 - 1.5. leadership position
2. How do organizational leaders describe their awareness and understanding of high-impact emerging technologies such as artificial intelligence, robotics, Internet of Things (IoT), augmented and virtual reality (AR/VR), and data analytics?
3. How do organizational leaders describe their organizations' experiences, practices, and challenges in preparing for and adopting emerging technologies?
4. Based on the insights and experiences of organizational leaders, what framework can be developed to guide companies in preparing for emerging technologies?

Methodology

Research Design

The research design employed in this study was qualitative exploratory study to research about leadership views on the preparation of emerging technology. The qualitative design was suitable since the research was interested to gain insight into the meaning-making of leaders in relation to technological change and how they explain their ready state of the organization and in relation to the meanings they place on adoption, risk, ability, and strategic direction. The study did not look at adoption quantitatively, but rather the organisational experience and perceptions of the leaders who are part of the decisions in the areas of technology, innovation, and digital transformation. The qualitative character of the design was also suited since there is limited research conducted on leadership in the light of emerging technology readiness on the Philippine setting.

Population and Sampling Technique

The subjects of the research were twelve executive leaders and middle managers of selected organizations in Philippines. The respondents were used to represent eight industry groupings which included information technology, hospitality, education, healthcare, retail, construction and property development, transportation and fast-moving consumer goods. The reasons behind the choice of these sectors include the fact that they are different in terms of operational structure, intensity of competition, contact with customers, and vulnerability to technological breakage and therefore they are suitable areas of application of leadership perspectives in different organizational settings.

Purposive sampling allowed the researcher to identify participants with definite qualities, namely, they had to hold middle management or executive roles within the organization, belong to the organizations that provide their services in one of the mentioned industries, and be somehow involved in making decisions related to the technology or planning the organization. This was a suitable method since the research needed information-filled cases, and not statistical illustration. Professional contacts, industry referral, and organizational networks were used in order to approach the participants. The number of participants was guided by data saturation, as the subsequent interviews did not produce new themes or categories that were substantially new.

Instrumentation

A semi-structured interview guide that was created by a researcher was used as the primary data collection instrument. A semi structured format was taken since it enabled the researcher to address main areas of the study yet provide the participants with ample flexibility to articulate their experiences, priorities and organizational realities on their own words. The key theories that guided the interview guide were the major theories that formed the basis of the study and these include the Technology Acceptance Model, Diffusion of Innovations, Technology-Organization-Environment, Dynamic Capability Theory and the Human Capital Theory.

The guide was divided into a few sections and the participant and organizational profile, awareness of new technologies, organizational practice regarding adoption of new technology, perceived obstacles and -

and challenges, and organizational readiness recommendations on the leadership front. The participants were inquired about which technologies they think are impacting on their industries, their level of familiarity with technologies like AI, robotics, IoT, AR/VR and data analytics, how their organizations make a decision to adopt a specific technology, what are the determinants of readiness in their opinion and what are the elements of a framework that they would deem necessary to prepare organizations to adopt emerging technologies.

Analysis of Data

The information was gathered in the form of recorded interviews and transcribed to be analyzed. The transcripts were read through several times to become familiar with the data, as well as to find repeated patterns, meaningful phrases and insights about the organization. The thematic analysis applied in the study was considered to include code response of the participants followed by grouping codes bearing common meaning hence giving a synthesis to the group of themes. This method was suitable, as it enabled approaching consistency as well as variation of leadership views in sectors.

The analysis produced four principal themes, those were, awareness and understanding of emerging technologies, organizational practices and preparedness to adopt technology, challenges and barriers to technology adoption, and leadership strategies and framework components to technology preparedness. The results were presented based on these themes and then interpreted.

Ethical Considerations

Ethical considerations were followed throughout the research. The participants received information concerning the aim of the research, voluntary character of their participation and the confidentiality of the information. They were assured of anonymity in this research and their names and organizations will not be disclosed in the study and that any data provided will only be utilized in academic context. Participants were further notified that they were free to either refuse answering any of the questions or giving up on the research at any time without any consequence.

Results & Discussion

Thematic analysis of interview data provided four significant themes that describe themes on leadership perceptions on emerging technology preparedness in the selected industries in the Philippines. These were awareness and understanding of emerging technologies, organizational practices and readiness to adopt technology, challenges and barriers to technology adoption, and leadership practices and elements of technology readiness strategies and frameworks.

Awareness and Understanding of Emerging Technologies

Table 1 reports the theme, the participant responses which were chosen, and the interpretation towards the awareness of emerging technologies among leaders and their comprehension.

Table 1
Leadership Awareness and Understanding of Emerging Technologies

Theme	Participant Response	Interpretation
Awareness and understanding of emerging technologies	"P1: "AI, robots, cryptocurrency and blockchain, machine learning."	Organizational leaders demonstrate awareness of various emerging technologies, particularly AI and automation-related innovations.
	P4: "Artificial Intelligence, Generative AI, Robotic Process Automation, Cloud Computing."	Leaders exhibit broader and more advanced awareness depending on industry exposure and operational needs.

The answers show that most of the leaders in the industries that participated in the study are usually knowledgeable on the emerging technologies. The most mentioned technology was artificial intelligence, then automation, robotics, analytics, cloud systems, and digital platforms. This implies that new technology has already got into the vocabulary of organizational leadership, although in other instances actual adoption has not widely taken place. The level of awareness, however, was not even. Certain participants generalized technology, and others could provide specific applications and directly related technology to organizations processes including customer service, process optimization, demand forecasting, workflow integration, and decision support.

Organizational leaders in the information technology field, and other analogous digitalized fields, were more likely to describe more advanced awareness. Their reactions indicated that they were not only familiar with the names of technology but they also understand categories of use, implementation logic, and strategic relevance. In comparison, leaders in more traditional or resource-poor settings talked more broadly about technologies and tended to see them as a trend that could be perceived in the broader market but not yet elucidated in their respective organizations. This trend indicates that exposure creates awareness. At the point organizations have already been in digitally intensive environments, leaders will be able to proceed to higher levels of recognition and applied knowledge.

Organizational Practices and Readiness for Technology Adoption

Table 2 demonstrates the theme connected with organizational practices and preparedness to adopt the emerging technologies.

Table 2

Organizational Practices and Readiness for Technology Adoption

Theme	Participant Response	Interpretation
Organizational practices and readiness	P1: "We are very careful... cost of change, human resource redundancy, and effect on operations."	Organizations adopt technologies cautiously, considering operational and human implications.
	P6: "Adoption is based on client demand, ROI, scalability, and alignment with long-term strategy."	Adoption decisions are driven by strategic and economic considerations. Adoption decisions are driven by strategic and economic considerations.

The statistics indicate that new technologies are not purchased by organizations without a reason. Rather, leaders characterized adoption as a process which is tactical and cautious. The participants stressed that it was necessary to consider cost, possible return on investment, feasibility of operation, and organizational fit before proceeding towards implementation. Some of the respondents explained about pilot testing, restricted implementation, or gradual implementation as their strategies of choice since they enable the organization to see results without engaging in massive investment.

This trend indicates that organizational planning is directly related to preparedness. The use of technology is no longer considered as a purchase of a tool; it is perceived as a process that can have influence on the work process, personnel, equipment, service provision, and corporate identity. It was further observed by some leaders that the readiness decisions are affected by client or customer expectations. Whenever the impact of a technology is predicted to be visible in enhancing service quality, competitiveness, or efficiency, organizations will be more apt to adopt the technology. Nevertheless, even at this, there are instances where the leaders have reported that adoption is determined with regard to whether the organization has enough internal capability to handle implementation.

Challenges and Barriers to Emerging Technology Adoption

Table 3 shows the challenges and barriers that the leaders perceived influenced technology adoption in their organizations.

Table 3

Challenges and Barriers to Emerging Technology Adoption

Theme	Participant Response	Interpretation
Challenges and barriers to adoption	P3: "Many will be jobless... fear of error and production quality issues."	Workforce concerns and fear of technological reliability hinder adoption.
	P4: "Resistance to change, limited technical skills, high implementation cost."	Structural and organizational barriers significantly affect adoption.

The findings indicate that obstacles to the adoption of emerging technologies are numerous and interrelated. The most mentioned problem was high implementation cost. Leaders clarified that in most cases implementation of the advanced technology needs more than the software or equipment purchase; it needs infrastructure improvement, training, integration, support and in some other cases; redesigning of the organization. In most organizations, particularly the MSMEs, such expenses have not been easy to absorb. This results in slower adoption, reduced pilots, or total adoption delay.

The other critical hindrance is the unskilled labor force. On multiple occasions, the participants observed that despite the interest of the organizational leaders in a technology, it can hardly be adopted when there are small numbers of employees who can utilize, read, or sustain the new systems. Other change resistant responses were also very evident. Leaders noted that at times employees may view new technology as a threat to them due to the way they feel that it can change their work positions, enhance supervision, or cause them to have fears of losing their jobs. The infrastructural constraints provided an extra challenge to it particularly to those organizations that continue to use disjointed digital frameworks or poor connectivity. The combined effects of these responses indicate that there are no isolated adoptions barriers.

Leadership Strategies and Framework Elements for Technology Readiness

Table 4 shows the leadership practices and components of the framework viewed to be significant by the participants towards organizational preparedness.

Table 4

Leadership Strategies and Framework Elements for Technology Readiness

Theme	Participant Response	Interpretation
Leadership strategies and framework elements	P2: "We must prepare ahead of time and be proactive."	Proactive planning is essential for technology readiness.
	P5: "A framework should include vision, infrastructure, workforce readiness, governance, and continuous improvement."	A structured and multi-dimensional framework is necessary for adoption.

The participants repeatedly stressed the role of leadership as the significant source of readiness. They reported proactive planning, strategic vision and communication in an organization as part of technology preparation that was required. The responses suggest that leaders should not be waiting to be disrupted to adopt. They ought to follow progress in technology instead, evaluate the relevance of an organization, and initiate capacity-building prior to the influence of outside forces becoming overwhelming.

Leadership vision was one of the strongest subthemes. Respondents elaborated that leaders have to articulate the reason why a certain technology is important to the organization and how it helps the organization reach greater objectives. Another major factor was workforce development. The key elements that participants identified towards being ready were the importance of training, upskilling, coaching, and lifelong learning. Infrastructure preparedness was also regarded as crucial. The process of adoption based on data systems, digital tools, interoperable platforms, and resources allocation was described by leaders. Governance also became a separate issue. The participants emphasized the necessity to provide policies, ethical principles, accountability measures, and performance controls to ensure that the use of technology will not be vindictive of the organization standards and responsibility.

Discussion

The results of this research indicate that the leadership views offer valuable understanding of the reason why the use of emerging technologies is still not evenly distributed across the industries in the Philippines. On the simplest level, the research suggests that awareness on emergent technologies has already taken place among the executive leaders and middle managers. Some of the technologies that the participants identified include artificial intelligence, automation, robotics, cloud systems, analytics, and digital platforms, which indicates that technological change is evident in the modern organizational discourse. This confirms literature on the increasing applicability of these technologies to industries and their primary role in Industry 4.0 transformation (Javaid and Haleem, 2020; Lee et al., 2021). Nevertheless, the statistics also indicate that the levels of awareness are different. Other leaders were able to relate technologies to tangible applications in organizations whereas some leaders just explained them vaguely.

This difference is important because there is a difference between awareness and readiness. The findings made are corroborated by the existing Philippine studies indicating that the understanding of smart manufacturing and AI may not be easily converted to adoption (Barroga et al., 2021; Quimba et al., 2024). Leaders might have knowledge that there is a technology, may even come into belief that it matters, but they just do not know how they should introduce the technology, the resources that it needs, and whether the organization is ready to cope with such technologies. This trend portrays the Technology Acceptance Model and the Diffusion of Innovations theory. Where there is perceived usefulness, ease of use, clarity of application and organizational confidence might be low (Davis, 1989; Rogers, 2003).

The organizational practices findings indicate that the leaders treat the issue of technology adoption as a strategy but not the sole technical upgrade. Cost, return on investment, scalability, client demand, and strategic alignment were mentioned numerous times by participants. Such cautious consideration is in line with what the Technology-Organization-Environment framework suggests the point that need to adopt is also based on organizational capacity and context as much as it would be based on the nature of the technologies (Tornatzky and Fleischer, 1990). Executives do not just ask a question of whether a technology is innovative. They pose questions on whether it is affordable, sustainable, useful, and compatible with the current operations. This defensive measure is particularly logical in the settings in which resources are limited and the failure of the implementation may be rather expensive.

Simultaneously, the results indicate that caution may turn out to be delay when organizations do not have such structures that may enable them to test, learn, and evolve. The pilot projects and a phased adoption process were also mentioned by the participants as their preferred methods, which means that organizations seek less risky methods of experimenting with new technologies. This is an adaptive orientation that is in line with Dynamic Capability Theory. Companies that build the ability to feel technological opportunity and achieve it through strategic experimentation and rearrange internal resources have a better chance to -

transition interest to action (Gonzalez-Varona et al., 2024). However, this does not seem to be equally possible across organizations. To others, small investments and inefficient infrastructure contain experimentation to a dream instead of a present reality.

The problems mentioned by the participants support the fact that technology adoption is a socio-technical problem. The most obvious one was high cost, although it was tightly confined to other problems, including the ability of the workforce, infrastructure, and cultural resistance. It also aligns with the earlier findings, which indicate that the digital transformation barriers tend to be interrelated and interdependent, as opposed to detached (Ciasullo et al., 2022; Polonara et al., 2024). Considering this, organizations with fewer financial capabilities cannot invest in training as much. Without training, the employees will tend to become resistant of the emerging technologies or may use them effectively. In cases of weak infrastructure leaders grow less assured of the fact that investment will bring value. Therefore, obstacles build up and become mutually reinforcing.

Of particular importance is the workforce dimension. The issues related to the lack of skills, challenges of the adjustment, and fear of losing a job expressed by the participants show that the preparation relies greatly on the human potential and organizational faith. This attributes to Human Capital Theory which underscores that the performance of organizations is enhanced in when leaders invest on training, development of knowledge, and human capabilities (Becker, 1993). The current results indicate that not only systems and tools should be viewed as the factors of readiness. It also should be put in context whether individuals perceive what the technology is, and feel they can operate it, and that the organizational leaders will be responsible in handling the transition.

One of such barriers in the study that should be taken very seriously is resistance to change. Resistance was not necessarily put across as irrational opposition. In others, it manifested itself as confusion in terms of exactness, safety, morals, job design, or operational interference. This implies that resistance is not to be addressed through compliance requirement in the organisations. The leaders are required to convey purpose, model the value, train and engage employees through the transition process. Resistance is most probably to increase when the change is forced without preparation or explanation. Resistance may be addressed more effectively when leaders demonstrate the reasons why a technology is significant and help people during the transition. This reinforces the literature that digital transformation relies not only on technological resources but also on communication with top leadership and corporate culture (Vial, 2019; Ross, Beath, and Sebastian, 2017).

The fourth theme that emphasizes the leadership strategies and framework components in readiness are one of the most powerful contributions made by the current study. Strategic vision, workforce development, infrastructure, governance, and continuous evaluation were regularly highlighted by the participants. This implies that leaders themselves view readiness as a system. This position is important as it is not based on such simplistic ideas that readiness is achieved when an organization buys a technology. Readiness is instead regarded to be a consequence of leadership commitment, organizational preparation, support mechanisms, and learning.

According to the answers of the participants, one could develop an Emerging Technology Readiness Framework based on five mutually dependent elements. One of them is leadership familiarity and direction. The leaders have to gain informed knowledge about the technologies in use, and establish how the technologies match the organizational objectives. Second is organizational preparedness and infrastructure. This incorporates digital systems, funding capacity, interoperability and structural technological assistance. Thirdly is workforce ability and growth. Both the employees and managers require training, upskilling, coaching and support of change within organizations. Fourth is government and effective execution. Policies, ethics, accountability systems and monitoring procedures are required in order to make sure that technologies will be utilized in an adequate way. Fifth is, constant measurement and improvement. Regular reviews of adoption must be done to determine whether the technology is generating value, emerging risks or not and to evaluate whether it needs additional adaptation. This theoretical framework is congruent with the theory of the proposed study. Leadership awareness is associated with TAM and DOI that highlights perception and knowledge. The organizational readiness relates to the TOE framework.

Dynamic Capability Theory is represented in strategic adjustment. Training of workforce is in line with the Human Capital Theory. Combining these concepts with the experience of the participants, the framework will be theoretically and practically informative.

Such a structure is particularly important within the Philippine context. There are many organizations especially the MSMEs which are under real constraints and are not able to implement all the emerging technologies at the same time. A preparedness system assists the administrators to prioritize. It helps them to question whether the organization is knowledgeable about the technology, whether it has adequate infrastructure, whether the employees are ready, whether there are policies, and how the results would be measured. The framework does not propose a trend to be followed and adopt technology but, instead, one that should be used in a more thoughtful and context-specific fashion.

All in all, the results indicate that the effective implementation of emerging technologies within the Philippine industries is considerably based not on enthusiasm per se but requires the combination of the following factors: leadership aptitude, organizational capabilities, employee readiness, and reflective implementation. Leaders do not only act as gatekeepers of technology decisions. They are decoders of the technological transformation and planners of preparedness. Organizations are better placed when they are strategic and have systems to aid in the transition to awareness to adoption in a commendable manner. Practically, the paper recommends that employers are to spend on leadership training, digital literacy programs, incremental experimentation, human resource development, rules to govern the utilization of emerging technologies that are responsible. Such moves can be useful in closing the longstanding divide between awareness and actual application within the Philippine industries.

CONCLUSIONS

In order to understand how middle managers and executive leaders consider emerging technologies as being related to their businesses, this study examined the level of awareness, perspectives, and practices related to emerging technologies in a number of different industries throughout the Philippines. Four themes were developed through thematic analysis: knowledge and understanding of emerging technologies, organizational practice and readiness, impediments and barriers, and strategies for leading technology readiness.

An overall finding from the study indicates that, in general, organizational leadership has an awareness of emerging technologies which include artificial intelligence, automation, data analytics, and other sector specific technologies. However, the degree of awareness varies among organizational leaders based upon the amount of exposure to a specific industry, the capacity of the organization, and the extent to which digital transformation initiatives are executed. While many leaders demonstrated a high level and application driven knowledge of emerging technologies, others had only a minimal or low level of understanding. The latter were generally found in resource limited environments such as micro, small, and medium sized enterprises (MSMEs).

Organizational practices for emerging technology adoption have been approached with caution and strategy. Organizations follow a formal evaluation process for emerging technology that includes all aspects of a project including cost, return on investment, aligning with their business strategy, infrastructure readiness, and employee capabilities. The adoption of technology by organizations tends to be gradual and not implemented all at once. Organizations will pilot test and modify based upon pilot results prior to a complete rollout, and many organizations will implement their technology in phases. Even though the benefits of emerging technologies are readily acknowledged, many barriers impede their acceptance by organizations. Barriers to accepting emerging technologies include implementation costs, insufficient skilled labor, resistance to change, infrastructure limitations, and regulatory constraints. These barriers are especially problematic for MSMEs due to limited finances and technical capacity to achieve readiness.

Furthermore, the study revealed the importance of leadership in preparing an organization to adopt emerging technologies. The importance of strategic vision, workforce development, infrastructure readiness, governance and ongoing evaluation were reported by organizational leaders as being key variables of technology adoption and organizational transformation.

Proposed Emerging Technology Readiness Framework

To support organizations in preparing for the adoption of emerging technologies based on the research findings, an Emerging Technology Readiness Framework will be an effective guide.

There are five basic components to the proposed framework and all of them are interrelated.

1. **Leadership Awareness and Strategy** - A good organizational leader must have a shared vision of emerging technologies and relate that vision to the overall organizational goals. In leading the digital transformation process, organizational leadership is the key to initiating and continuing efforts.

2. **Organizational Readiness and Infrastructure** - Organizations are required to have sufficient amounts of digital infrastructure, financial resources, governance structure, and technological systems to support the adoption of emerging technologies in advance of their adoption.

3. **Workforce Capability and Development** - Organizations must have ongoing training, skills improvement, and change management programs to prepare their employees to develop the capabilities and competence required for the adoption of technology and lessen potential resistance to change.

4. **Strategic Technology Adoption Process** - The strategic technology adoption process will consist of a structured evaluation and testing of the technology, as well as a phased implementation and its alignment with the business objectives.

5. **Continuous Evaluation and Improvement** – Organizations will require continuous evaluation and improvement of their technology adoption strategies to ensure long-term effectiveness and adaptability.

The integrated interrelationships of these components comprise an integrated system that organizations may utilize to move from the stage of awareness to the stage of readiness and from the stage of success in adopting emerging technologies.

The activities and the hurdles identified in the research represent the components of the Technology Readiness Framework and address the key issues regarding the perception of emerging technology awareness and the gap between perception of emerging technology awareness and actual adoption of emerging technologies, barriers within an organization to adopting emerging technology, as well as the requirements and structure of a strategic technology adoption process. In this way, the implementation of a context-specific model will provide support for all Philippine industries to avoid problems of digital transformation as they occur in other countries.

RECOMMENDATIONS

Based upon the results obtained from this study and the proposed framework, the following recommendations have been developed:

To Government Agencies and Policymakers. Government agencies, such as DTI, DICT and DOST, should offer funding, training programs and policy frameworks that will promote and support the digital transformation of micro, small and medium enterprises (MSMEs) through technology adoption.

To Leaders and Managers. Leaders and managers should take an active and strategic approach in aligning their organisation's technological initiatives to its strategic goals. They should focus on building their leadership capabilities as well as developing their employees' digital skills and capabilities for future success in the workplace and create a culture of innovation and openness to change.

To Micro, Small and Medium Enterprises (MSMEs). Micro, small and medium enterprises are encouraged to adopt new technology incrementally, with the option to scale their use. They may achieve a greater level of digital readiness by developing partnerships with technology providers and participating in training programs.

To Large Enterprises. Large enterprises should continue their digital transformation efforts and may act as role models for best practices. Collaboration with smaller enterprises will also assist with the progression of the industry as a whole.

To Training Institutions and Academic Organizations. Training and educational institutions should create programs that will assist in developing new employee skills and leadership from emerging technologies, digital skills and leadership development while ensuring alignment with the needs of the respective industries.

To Technology Developers and Industry Stakeholders. Technology providers should create technological solutions that are accessible and scalable across different organisational contexts while supporting these efforts with training and technical assistance services.

To Future Researchers. Future researchers should explore how the digital transformation framework can be applied to different industries or validated using quantitative or mixed methods, as well as investigate the long-term impact of emerging technologies on the performance of organisations.

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