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**THE DIGITAL-READINESS-PERFORMANCE (DRP)
MODEL: INTEGRATING LEADERSHIP, EMOTIONAL
INTELLIGENCE, AND ORGANIZATIONAL READINESS
FOR SUSTAINABLE TRANSFORMATION IN THE
INDUSTRY 5.0 ERA**

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Abstract:

The fast-advancing Industry 5.0 (IR5.0), has ushered in a new era in how organization combine technology, people and processes to achieve lasting digital transformation. However, digital leaders continue to face significant challenges, including skill shortages, resistance to change, and cybersecurity threats that hinder effective transformation. The Digital-Readiness-Performance (DRP) model, a conceptual model with the objective of explaining how the dynamics relationship between digital leadership, organizational readiness, emotional intelligence and transformation performance occur. Based on recent leadership theory and supported by empirical evidence, the model makes clear that digital transformation succeeds not only through technology investment but also by strategic alignment of leadership capabilities, human adaptability and organizational readiness. Emotional intelligence (EI) is proposed as a moderating variable for increased leadership effectiveness by dissolving resistance, increasing trust, and decreasing technostress in technology change. The DRP model offers both theoretical and practical implications by providing a structured roadmap for organizations to assess readiness, strengthen leadership and digital capabilities, and sustain competitive advantage in the IR5.0 landscape. The paper is adding to the growing literature around digital transformation by bringing the human aspect more into focus within technology led organizational development.

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Digital Leadership, Digital Transformation, Emotional Intelligence, Industry 5.0, Organizational Readiness



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Introduction

Technological advancements in IR5.0 have ushered the world, including Malaysia, towards an inclusive and human-centred digital economy. According to Javaid et al. (2024), the digital platform economy involves various forms of commercial and social relations, which have broadly been extended through digital technologies. Bukht and Heeks (2017) describe the digital economy at three different levels: 1) a narrow definition that considers only the core ICT sectors, including digital products & services; 2) a broader definition that takes into account all economic activities exploiting digital technologies; and 3) an extensive definition which implies full integration of digital technologies in every economic sector. The digital economy may be conceptualized as the combination of core ICT sectors and other economic activities partially based on digital technologies, either complementary or substituting traditional non-digital ones. According to the 2019 Digital Economy Report of United Nations Conference on Trade and Development (UNCTAD), the global digital economy contributes between 4.5 -15.5% for total world's Gross Domestic Product (GDP). This estimate is a clear testament to the fact that we are rapidly transitioning from a digital economy as an ancillary part of business, into the core driver of value in today's world.

Malaysia recently initiated a range of national strategies including MyDIGITAL and the Malaysia Digital Economy Blueprint (MDEB) as part of its ongoing effort to position itself competitively, whereby the public sector, private sectors, and workforce can be digitally transformed holistically. The United Nations Conference on Trade and Development (UNCTAD) had reported in the 2024 Digital Economy Report that an estimated 70% of internet users in Malaysia were found to have made purchases online in 2023. This number reflects how more Malaysian consumers are comfortable in making online transactions, marking a huge leap forward for e-commerce in the country. And these developments also indicate that a significant, albeit inchoate, opportunity exists to further grow Malaysia's digital economy across sectors such as retail, delivery services and digital finance.

However, technological advancement alone is insufficient to ensure the success of digital transformation, effective leadership plays a pivotal role in driving and sustaining organizational change. Digital leadership that drives and idea of digital is designed not to enable technology but an innovative, fast-moving culture. According to Schiuma et al. (2021), effective digital transformation means that leaders must be able to both drive technology and develop an innovation-focused culture in order to create new values as well as iteratively improve work processes. Also, McCarthy (2024) highlights the necessity for digital leaders to always provide

work environment fostering agility, creativity and continuous improvement of employees' digital skills to enable all organizations to adapt continuously and be ready address uncertainties in the digital domain. This suggests the battle to win in digital transformation is not just about technological investment in isolation, but rather a shift of mindset at leadership level that ensures technology is deployed as a strategic enabler.

The development of the digital economy investment trend in Malaysia from 2023 to reflect greater emphasis on leadership and sustainability for transformation. In just the first half of 2024, approved digital investments hit RM66.22 billion, which is more than double the RM46.2 billion for the full year of 2023. The aggregate digital sector investment value target for 2024 jumped to RM163.6 billion (MDEC, 2024), and generated over 48,000 high-skilled employment opportunities, indicating a rise of around 250 %. This expansion persisted into the second quarter of 2025 as digital investments grew by 125% against the previous quarter, at RM29.47 billion in the sector, involving 261 entities and the creation of over 17,495 knowledge-based jobs. This breakaway growth underscores that digital transformation in Malaysia is not a technology agenda but one, which requires encompassing leadership to ensure that these significant investments translate into the kind of sustainable and inclusive growth fuels its overall economic progress.

In order to reveal the dynamics of digital transformation within the IR5.0 era, it is important to have a closer look on the theoretical underpinnings behind the concept of digital leadership. The next section provides a review of the leadership theories and perspectives that unpack leaders' role in as far as steering technological change, fuelling innovation and harmonizing human capabilities with digital progress.

Digital Leadership Theories

Digital leadership can be described as a leadership style that is used and implemented in line with the needs of digital time (Khalil et al., 2022). It also includes those who increase value to an enterprise through application of technology and their own skills (Khawaja & Hamdan, 2023). Digital leadership is also depicted as leaders who employ technological interventions as a core element in their leadership practices (Salamzadeh, 2021). Together these definitions describe digital leadership as a form of leadership where technology is used actively, but with a strategic capacity to be used for purposes of improving organizational efficiency, and communication and innovation.

In parallel with developments in the digital economy and the IR5.0 era, models of leadership and organizational learning have undergone substantial evolution. According to Cheng et al. (2025), IR5.0 leaders should show a great level of flexibility and think ahead of the curve as to quickly align their organizations with you market changes and evolutions in technology. As a result, there are a number of recent leadership theories that have been developed to account for the skills and abilities needed by current leaders who must strategically navigate technology while also ensuring a human focus in organizations. This is consistent with Leal-Rodríguez et al. (2023), a digital organizational culture is the common mental model and values held by employees about the conduct of the organization in a digital environment.

Firstly, ecosystem leadership, as defined by Foss et al. (2023), refers to the actions and investments undertaken by individuals or organizations to influence, coordinate, or establish boundaries with other actors within an ecosystem, both existing and potential collaborators, in

order to create and sustain a robust and resilient ecosystem. This has become particularly important within the digital organizations and IR5.0, because organizations are part of an ecosystem where they interact with multiple stakeholders such as technology providers, customers, policy makers and communities. The leaders of the ecosystem must therefore practice open thinking, and a sharing leadership style that goes beyond organization boundaries with shared value creation. This fits with the systems thinking idea developed by Senge (2010) in *The Fifth Discipline* that focuses on a holistic and interconnected system perspective for organizations. Building upon this perspective, Schiuma et al. (2025) applied ecosystem leadership theory within the context of IR5.0 organizations, emphasizing that leaders must balance human, technological, and sustainability-oriented relationships. Therefore, leaders in the digital ecology need to develop strategic networks and empower all stakeholders continually to steer their organizations in line with transformative societal, economic and environmental shifts.

Secondly, Khattak et al. (2025) claims that many initiatives for global digital transformation are delayed and fail because of a lack of understanding of complex interrelations between organizational capabilities and human factors necessary to succeed. Some scholars connect digital performance with being agile, prepared for strategic moves, adaptable, and to the ability of change managing (Shen et al., 2022; Vogelsang et al., 2018). Accordingly, the Agile Leadership approach has gained recognition as a relevant form of leadership in complex, uncertain, and constantly evolving digital environments. Originating from software development practices around 2001 (Bianchi et al., 2020), Agile Leadership has since been extended to broader organizational management contexts. The foundation of agile leadership lies in flexible work structures through small teams, emphasis on collaboration within strategic networks, and prioritization of customer needs and experiences (Denning, 2016). According to Rialti and Filieri (2024), this idea also connects with design thinking approaches of developing solutions through lean principles such as team-based collaboration, consistent learning across the board, and real-time performance measurement. It therefore requires institutions to sustain readiness for uncertainty. Without appropriate leadership principles, digital transformation remains technology-focused and does not result in deeper organizational change.

Third, Siemens (2005) developed Connectivism Theory as result of the inadequacy of other learning theories in dealing with digital-era challenges, and especially those traditional paradigms like behaviorism, cognitivism and constructivism. According to Siemens (2005), these earlier theories fail to explain the drastic changes in how humans' access, process, and share information, particularly in environments driven by social networking technologies and real-time communication. Connectivism stresses that learning is no longer just a private process for the individual but distributed across networks of human, machine and virtually real connections. In line with Corbett and Spinello (2020), they noted the interplay of human learning with access to information readily available in modern technology. Thus, in the context of digital leadership and IR5.0, the theory suggests that leaders should not be solely knowledgeable owners of information but also to act as a facilitator who links strategically resources, technologies and humans together in order to establish a culture of collaborative learning and active engagement. For example, intelligent organizations that rely on a cloud-based management infrastructure digital leaders are chartered with keeping knowledge flow activities of departments-customers and industrial partners aligned. This includes tools like collaborative apps such as Microsoft Teams and Google Workspace that demonstrate Connectivism in action, through dynamic information sharing and learning across different functions in real time.

Moreover, the Collaborative Control Theory (CCT) presents an operational model as well as a robot's capability of being self-capable in which human and intelligence systems collaborate on equal footing with adjustable autonomy and mutual decision making (Fong et al., 2003). Instead of the traditional master–slave concept, CCT emphasizes dynamic control negotiation, allowing robots to request human input, when necessary, thereby reducing operator workload and enhancing system adaptability. Originally developed for human–robot interaction applications, this principle has since gained relevance in digital leadership within the IR5.0 era, where leaders are increasingly positioned as orchestrators of strategic collaboration between humans and artificial intelligence (AI) systems. IR5.0 is a reflection of an emphasis on human-centricity, sustainability and resilience that challenges leaders to develop adaptive structures capable of making machines manage tools where necessary but when relevant, withholding cognitive conditions, emotional protection and process resilience (Breque et al., 2021; Xu et al., 2021). In this way, CCT offers a strong theoretical framework for digital leaders to lead an ecosystem which seamlessly integrates humans and AI mutually as complementary resources towards technological deployment without obstructing human involvement, a critical prerequisite as organizations move forward toward becoming IR5.0 that informed such a human-centered paradigm (Demir et al., 2019; Oztemel & Gursev, 2020).

Last but not the least, this concentration on humans has been gaining importance in leading towards IR5.0, where the organizations today are stressing not only efficiency with technology, but also human values of empathy, wellness of employees and sustainability. Whereas Industry 4.0 (IR4.0) primarily emphasized digitalization and automation, IR5.0 places human beings at the core through three key pillars: resilience, sustainability, and human-centricity (Ivanov, 2022). The concept of human-in-the-loop is a reminder that technology should be used as an instrument to improve well-being instead of replacing roles filled by humans (Xu et al., 2021). Within this situation, it is the leader's job to be certain that technology facilitates human decision making and innovation while at the same time augmenting organizational resilience. This aligns with the vision of IR5.0, which aims to harness digital technologies in an innovative yet balanced manner that enhances human–machine interaction (Alves et al., 2023). Thus, leadership styles that emphasize human interaction are key to ensure that organizations are not just technologically supercharged, but remain robust, sustainable and truly people oriented.

Although existing leadership theories provide useful insights into effective leadership behaviors in the digital era, their applicability within the IR5.0 context remains limited and presents new challenges. The increasing acceleration of technology and changing expectations and composition of the workforce present new challenges for industry leaders in overcoming digital maturity obstacles. The next section presents the principal challenges digital leaderships are facing in defining a way ahead while roaming in the transformational world of IR5.0.

Challenges of Digital Leadership in IR5.0

A key challenge of digital leadership in the IR5.0 context lies in the digital divide, which manifests through unequal access to digital infrastructure, uneven digital competencies, and varying levels of organizational readiness to support inclusive digital cultures. Even as tech-savvy organizations quickly adopt AI, others are left due to resource constraints which deepen the technological and socio-economic gap. In 2023, the International Telecommunication Union (ITU) estimated that some 2.6 billion people still did not have access to the internet around the world. In Malaysia 2.3% of the society-approximately 825,000 people-still lack

access, especially in rural and remote areas of Sabah and Sarawak who still have geographic and infrastructural challenges (Kemp, 2025). This challenge can only be tackled with digital leadership at scale, including investment in cloud computing and improvement of digital skills, and also joint action across industries to create new pathways to prosperity for underserved communities.

Security of information and preservation of data are among the most important challenges in terms of digital leadership within IR5.0. With the growing cyber threats and increasing attacks being detected, digital leaders must implement strong cybersecurity governance and hard security policies to be certain that company assets are secure from data breaches and privacy violations. At the 3rd Malaysia National Cyber Defence and Security Exhibition and Conference (CYDES) 2025, the National Cyber Security Agency stated that there were more than 4,600 cybersecurity incidences in 2024, a rise of up to 43% compared to the previous year with victim counts of over 35,000 for various cybercrime incidents including a total estimated loss amounting RM1.5 billion (CYDES, 2025). Al-Azzawi et al. (2025) also suggested that AI based cyber-attacks could overcome conventional security solutions which result in new and more complex level of cybersecurity challenges for modern enterprises. In turn, Malaysia adopted the Cyber Security Act 2024 and presented the Malaysia Cyber Security Strategy 2025–2030 with focus on protection of critical infrastructure, law disposal, building cyber capability and cyber-enabled awareness (CYDES, 2025). As a consequence, digital leaders should work on comprehensive policies that put together risk assessments, incident reporting, employee training and talent development as they lead to increasing the cyber resilience of economies and ensure that digital transformation is done securely.

Resistance to change is also a major barrier in digital transformation, as employees and organizational units may hesitate to adopt new technologies due to fears of job loss, uncertainty, or skepticism about their benefits. Noriega Del Valle et al. (2024) discovered that the lack of psychological safety, low organizational trust, negative emotions, broken or scarce self-efficacy and low frustration tolerance obstruct employees' readiness to change in addition, Thoti (2024) emphasized high degree of social norms and social support with regard to behavioral towards technology adoption. This resistance can even become a cultural barrier that slows or halts efforts at transformation. As such, digital leadership requires proactively guiding the change process by creating an environment conducive to transformation, engaging employees through open and transparent communication about the purpose of change, and implementing a structured, strategic approach to managing it. Komariyah and Ismawanti (2024) discovered that the role of change management as a mediating variable in digital transformation through employee engagement was the strongest, and for successful organizations to overcome resistance by gaining leadership support and involving them actively in all processes of organizational change.

In the context of IR5.0, digital leaders also face significant and growing challenges arising from skills shortages and limited workforce awareness or preparedness. The adoption of emerging technologies including AI and the Internet of Things (IoT) is requiring leaders to equally value technological knowledge with human-centered skills. Ertiö et al. (2024) pointed out that EI is a critical skill for digital leaders to address technostress of employees by recognizing it emotionally, empathy and open communication in highly digitized context at work. Similarly, Hossain et al. (2025) argued that technical competences not only are insufficient for being considered as a leader but also leadership capability framework should include creativity, ethical judgment and emotional intelligence. Yet, many organizations have

difficulty hiring or training leaders that combine deep digital expertise and interpersonal skills, often because of lack of training and development budget, but also due to competition for digital talent. As such, the method for addressing this gap, whether through targeted reskilling initiatives, leadership development programs, or strategic workforce planning that will determine how leaders capable of managing the complexities of IR5.0 are developed and how they guide sustainable digital transformation.

Organizational Relevance of the Digital-Readiness-Performance (DRP) Model

The discussion on digital leadership challenges reinforces that successful digital transformation extends beyond the mere adoption of technology, it relies on visionary leadership, organizational preparedness, and a values-based, human-centred approach to integration. While existing leadership theories offer valuable insights, they do not sufficiently explain how these constructs interact in sense-making processes within the volatile context of Industry 5.0. Therefore, this paper advances a new conceptual model to address these gaps by providing an integrated perspective on leadership, organizational readiness, and performance in sustainable digital transformation.

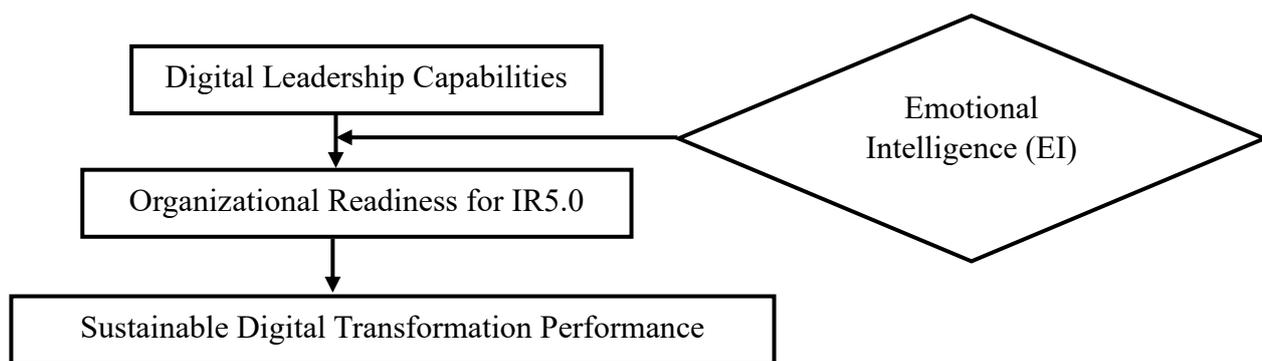


Figure 1: Proposed Conceptual Framework - DRP Model

The DRP model is developed to explain the mechanism through which organizations are able to maximize their performance in managing digital transformation issues. It provides a holistic view bridging digital leadership, organizational readiness and transformation performance and support organizations to ensure their leadership capabilities align with the strategic, structural and cultural elements that contribute to successful change. It is about being equally strong on both the technological and human horse of transformation, to ensure digital initiatives are technically feasible and organizationally sustainable. According to Bonnet and Westerman (2020), digital transformation is the “reimagining of how an organization operates” through the integration of technology, people and processes in order to improve business performance. Furthermore, Elia et al. (2023) highlights the fact that digital transformation is not just a matter of technology, but a strategic initiative to enhance competitiveness and innovation potential as well as acquire new skills and competences for creating meaningful interactions with cutting-edge technologies.

At the core of the DRP model lies the premise that digital leadership influences transformation performance through both direct and indirect pathways, directly through strategic vision and decision-making, and indirectly through the enhancement of organizational readiness. This highlights that the success of digital transformation depends not only on leadership vision but

also on the organization's capacity to adopt and implement technological innovations effectively. Leaders therefore play a crucial role in fostering a culture that embraces change, facilitates collaboration, and strengthens digital competencies among employees to ensure adaptability in the IR5.0 environment. As O'Connor and Martinez (2025) argue, visionary leaders that set an example for digital behaviors and inspire innovation and adaptability are key to increasing a firm's readiness to go digital. The same is argued by Zulu and Khosrowshahi (2021) in which they claim that leadership and digital transformation are mutually supportive to each other, contributing for the overall success of long-term change. Sacavém et al. (2025) also highlights the need for successful digital leaders not to be just technically able, but flexible in their thinking and forward-thinking. Consistent with the hypothesis, Qiao et al. (2024), among 579 respondents of a cross-industries sample, digital leadership catalyzes transformation through employee empowerment and developing the context where it is propitious to develop further digital initiatives. Collectively, these findings suggest that digital leadership is more than providing direction for technology investments, rather it is about inspiring and engaging employees while empowering them to adopt innovation on an ongoing basis and change.

The dimension organizational readiness highlights a basic prerequisite of developing capabilities within the enterprise that serve as foundation for digital transformation. It urges organizations to assess and strengthen key areas such as digital culture, employee engagement, continuous training, and resource allocation to ensure long-term adaptability. Change involves not just the external changes of tools and systems but also creating strong internal infrastructure and culture that supports the changes which is experimentation, learning, support for change and creativity. Kumar (2023) notes that, digitization requires a strategic approach for the successful fusion of technology, personnel and processes where executives' visions must align with what their staff desire to achieve, including those at the front line who need an assurance that there are common interests in certain transformation objectives through evidence. This coincides with recent scientific studies that have suggested that not technology, but people and organizational processes are crucial for a successful digital transformation. In agreement with this, Gonzalez-Varona et al. (2024) have identified SMEs who develop formal learning and adaptive internal practices are more prepared to manage their digital transformation initiatives than those who do not, following a qualitative multi-case analysis.

A key differentiating feature of the model is its recognition of EI as a moderating variable that strengthens the relationship between leadership and organizational readiness. EI introduces a human-centered dimension to digital transformation by addressing the emotional and psychological barriers that often impede change initiatives. According to Ertiö (2024), digital leaders with high EI help mitigate employee technostress which manifested through techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty, by demonstrating emotional awareness, transparency, and trust. Leaders who are excellent in emotional intelligence are also better at handling resistance, clearly communicating strategic vision, and building trust among teams. In alignment with this, Alwali and Alwali (2022) argue that the emotional intelligence of leaders significantly affects trust and employee performance, as wisdom, rational judgment and empathetic interaction enables them to gain trust. This leadership style enables organizations to facilitate a supportive culture, in which employees feel appreciated, sympathized with and inspired based on the mental prerequisites of change. Therefore, the incorporation of EI in the model reaffirms that digital transformation is not a technological process as much as it is an emotional journey to lead people through change with empathetic trust and interacting intelligently.

The DRP model is a pragmatic framework for organizations to assess readiness, surface capability gaps and focus in on the kind of training and enablement necessary for sustained digital transformation. It encourages a forward-looking, integrated approach to the development of leaders, change management and capacity that allows organizations to maintain the short-term needs while focusing on long-term transformation priorities. Empirical evidence and latest research work validate the model's applicability in heterogeneous organizational settings, proving its value as a guide for leadership enhancement, policy formulation, and strategic planning. As digital disruption accelerates, aligning leadership, organizational readiness, and performance becomes increasingly critical. The DRP model provides theoretical and practical implications on the theoretical effects of technology shaping by human beings, as to enhance the competitiveness, innovation and resilience in IR5.0.

Conceptual Propositions and Research Directions

According to the DRP model, digital leadership exerts an impact on transformation performance directly and indirectly shaping organizational readiness, while emotional intelligence also acts as a moderator in strengthening leadership effectiveness by diminishing resistance, building trust and encouraging employee's adaptation toward technological changes. Drawing from these theoretical associations, we propose three hypotheses for empirical testing in the future; digital leadership has a positive impact on readiness (H1), readiness has a positive effect on transformation performance (H2), and emotional intelligence moderates the relationship between digital leadership and readiness such that higher emotional intelligence will strengthen the significance of this association (H3).

Together, these propositions provide a foundation for empirical validation of the DRP model and enable a systematic examination of the interplay between leadership, organizational readiness, emotional intelligence, and transformation performance in the context of IR5.0. Future studies might consider empirically testing the model through surveys distributed to a sample of employees and leaders working in public and private organizations that are undergoing digital transformation, given that digital leadership and readiness are essential for successful outcomes of transformation. In this wider, organizational context, Technical and Vocational Education and Training (TVET) institutions are one interesting empirical context as they increasingly adapt to the uptake of digital technologies, automation and people-centered systems. Special attention is given to examining the DRP model within both leadership and risk management literature by applying the pioneering approach adopted in this study. Empirical support for the proposed model is established through the use of standardized measurement instruments and Structural Equation Modelling (SEM), enabling the examination of direct and indirect relationships, as well as the moderating role of emotional intelligence.

Conclusion

This paper introduces the DRP model for a cohesive approach to the comprehension and sustenance of digital transformation in the IR5.0 context by directly associating leadership competency, readiness of the organization and emotional intelligence to sustainable performance results. Beyond its contributions to academic research, the model offers important managerial implications for organizations by serving as a diagnostic framework to assess digital leadership readiness at an early stage. This early assessment enables organizations to identify readiness gaps before implementing specific digital initiatives, thereby reducing the

risk of failure in digital transformation efforts. The model also emphasizes the value of creating organizational readiness through strategic investments in skill development, digital infrastructure, and supportive work systems that foster adaptation and innovation. In addition, the integration of emotional intelligence yields practical implications for leadership development and recommends that organizations integrate EI competencies in leadership training, performance measurement, and change management for reducing resistance to technological changes and increasing levels of employee engagement. The DRP model may help policymakers and organization leaders design human-centered digital transformation strategies recovering both technological progress and the employee's well-being, resilience, and long-term competitive advantage for organizations in the digital age.

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