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The Strategic Role of Orange Technology in Cultivating Innovation and Well-Being

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ABSTRACT

This paper examines the integration of Orange Technology a human-centred paradigm advancing health, happiness, and care (H_2O triad) within strategic management frameworks. While strategic management provides the processes of environmental scanning, formulation, implementation, and evaluation, Orange Technology introduces models that emphasize well-being as a strategic asset. Employing an exploratory conceptual design, **this study** synthesizes interdisciplinary literature across information technology, biomedical engineering, psychology, and cognitive sciences, and maps them against the established stages of strategic management. **The analysis** highlights the potential for Orange Technology to enrich strategic processes by embedding health and happiness indicators into value propositions, governance systems, and performance evaluation tools. A phenomenon-level gap persists, however, as empirical evidence on governance systems, interdisciplinary adoption, and performance measurement remains scarce. **To bridge** this divide, two propositions are advanced for embedding an Orange Index into Balanced Scorecard frameworks, and developing a Three-Dimensional Transformational Balanced Scorecard to evaluate human centred innovation. **Finally, emerging applications** such as TRAIVIS demonstrate how Orange Technology principles extend beyond healthcare into education, combining AI, blockchain, and human centred learning to foster innovation and societal well-being.

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1. INTRODUCTION

Every part of our daily lives is affected by technology, and Artificial Intelligence (AI) poses comprehensive challenges, research shows that technology and the internet have a lasting impact on how people grow, interact, and survive, the negative social environmental impacts are more controversial than the negative impacts of the environment, especially technologies significant role in the workplace is growing which excessive use may lead to increased work stress, negatively impacting productivity and organizational performance. As a result, some governmental and professional groups have demanded additional study on digital screen time [1, 2, 3]. This indicates a growing academic concern about how technology influences psychological well being across various social contexts [4, 5]. To improve readability, this paragraph has been shortened and rewritten

for better flow and clarity, ensuring a more formal academic tone. It has resulted in the addition of measures of digital technology use to those already used to assess psychological well being in household panel surveys and extensive social datasets [6, 7, 8].

In line with the utilization of AI which aims to increase efficiency, simplify work, increase competitiveness and depth of information, especially encouraging innovation with AI can reduce uncertainty and costs, in its application, management must be able to innovate by organizing humans to play an important role in organizational transformation, because this requires hard work, especially for large scale organizations, a complex cultural transition is needed if you do not want the implementation of AI to be a burden for the organization [9, 10]. AI can support operations in ways that humans cannot. Even though evolution has greatly benefited humanity, it has also led to some major issues, like global warming, capitalism, utilitarianism, poverty, aging populations, and more [11, 12].

Because of recent developments, a lot of individuals have identified these issues and called for effective remedies, emphasize body and mind harmony. As a result, a practical solution for bridging the gap between technology and mankind is of the highest importance. However, existing studies rarely explain how Orange Technology's human centered values can be embedded within strategic management frameworks [13, 14]. This creates a clear research gap that this study aims to address by positioning Orange Technology as a strategic management paradigm linking innovation and well being [15, 16]. Introduce that The United Nations released its first ever World Happiness Report, emphasizing the global need for happiness as a governmental policy criterion and urging the development of science and technology in social and ecological sphere, the research devised for studying the new interdisciplinary "Orange Technology" which promote health, happiness, and humanistic care.

It is interesting linkage the strategic management of organizations may linkage to this orange technology [17, 18]. The objective is to identify synergies, tensions, and gaps between Orange Technology's human centred models and strategic management practices. Furthermore, the analysis incorporates the phenomena gap approach, which highlights discrepancies between technological innovation outcomes and their integration into organizational strategies, thus setting the stage for future empirical research. Based on the integration of strategic management theory and the unique dynamics of orange technology, the following three research questions are proposed, each designed to guide the subsequent Results and Discussion analysis by mapping Orange Technology principles onto the four stages of strategic management [19, 20, 21].

- How can the H_2O triad (health, happiness, and care) of Orange Technology be integrated into the environmental scanning stage of strategic management?
- In what ways can Orange Technology models be embedded into strategy formulation and implementation to create innovation driven and well being oriented competitive advantages?
- How might performance measurement systems, such as the Balanced Scorecard, be adapted through the Orange Index and transformational evaluation tools to capture both strategic and human centred outcomes?

2. LITERATURE REVIEW

2.1. Strategic Management

Strategic management is the integrative art and science of making and executing cross-functional decisions that enable an organization to achieve its long term objectives and sustain competitive advantage [22]. Unlike strategic planning which primarily concerns the formulation of goals strategic management encompasses the full cycle of formulation, implementation, and evaluation, embedding strategic intent into every facet of the organization's architecture and culture to drive continuous learning and adaptation.

Strategic management is an integrative discipline that involves making cross functional decisions to ensure long-term organizational success and competitive advantage. It aligns resources, structures, and culture with environmental demands, adapting to external opportunities and threats, and fostering a learning oriented system. It emphasizes sustainability, social well-being, and ethical governance [23, 24, 25].

Within this integrative framework, strategy formulation, implementation, and evaluation represent the three interdependent phases of strategic management. Formulation focuses on defining vision, mission, and long term objectives, emphasizing environmental scanning and positioning to secure competitive advantage.

Most previous works only describe Orange Technology's technical aspects without evaluating its integration into managerial theory. This paper fills that gap by critically synthesizing both fields and proposing Orange Index and Transformational Balanced Scorecard as conceptual bridges.

2.2. Orange Technology

Orange Technology formerly introduced as orange computing, is emerging as a human centred paradigm that extends beyond the scope of green computing. It integrates existing Information and Communication Technologies (ICT), pervasive sensing, and human computer interaction to enhance health, happiness, and care (the "H_2O" triad) across a wide range of application domains from intelligent eldercare robots to affective computing systems that sense and respond to users emotional states.

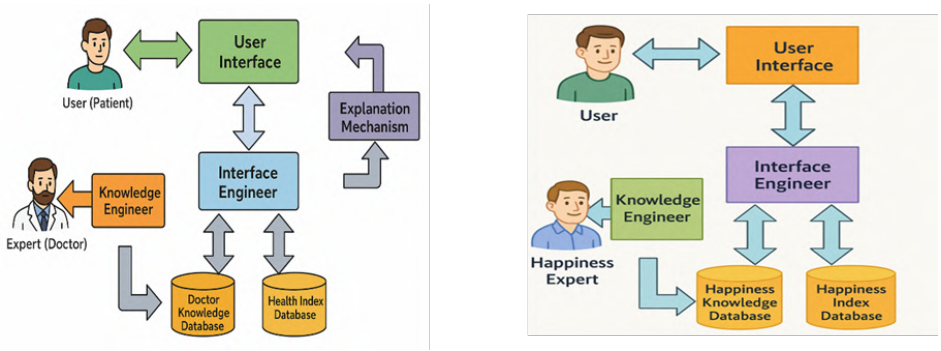

Figure 1. Framework of Health (Left) and Happiness Model (Right))

Figure 1 shows that:

(a) The health model is commonly utilized in medical expert systems, where a user queries an expert, who then merges their opinion into a knowledge database for a proper response.

(b) The happiness model requires user input and a predefined database, often measured from bio signals like blood pressure, heart rates, and laughter, making it challenging to determine happiness status.

(c) The Offering/Caring/Warning (OCW) model is crucial in orange computing, requiring precise feedback, accurate semantic understanding, and delicate human-computer interactions.

Building upon the frameworks illustrated in Figure 1, which focus on health and happiness interactions, Figure 2 introduces the Offering/Caring/Warning (OCW) model as an integrative extension of Orange Technology. While the previous models emphasize the expert–user exchange and data-driven interpretation of emotional and physiological states, the OCW framework advances this process by structuring the system's dynamic response mechanism. It enables continuous communication between users and the system through offering relevant information, providing empathetic care, and issuing timely warnings based on contextual understanding. This model highlights the evolution of Orange Technology from reactive expert systems toward proactive and adaptive human-centered computing environments.

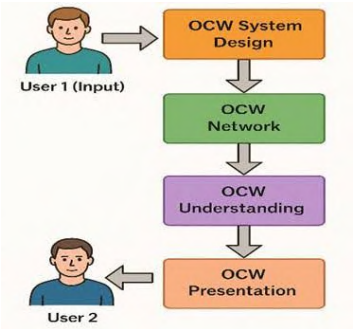

Figure 2. Framework of OCW Model

The research scope in computer science, electrical engineering, biomedical engineering, psychology/physiology, cognitive science, and social sciences was initiated by National Cheng Kung University by launching seven interdisciplinary sub-projects as shown in Table 1 as follow :

Table 1. The disciplinary scope of Orange Technology's Subprojects

Disciplinary Source	Subproject(s)
Computer Science	- Subproject 1: i-Care Cloud Robots for Senior Companion - Subproject 4: Recognizing Affection in Conversational Speech
Electrical Engineering	- Subproject 5: Research on Noncontact Millimetre-Wave Life Detection System and Related CMOS MLDS Sensor Circuits for Wireless Healthcare Applications
Biomedical Engineering	- Subproject 3: Development of Brain-Body Fitness Training Program
Psychological / Physiological Science	- Subproject 6: Assessment and Intervention for Brain and Cognitive Aging
Cognitive Science	- Subproject 7: Neuroscience of Well-Being: fMRI-Based Research on Happiness
Social Science	- Subproject 2: Study of Gross National Happiness

Table 1 show the seven disciplinary scope related with the projects, which the research scope of orange computing includes subject to health and security care for the elderly, children, and infants, care and disaster relief for the people in the disaster stricken area, care for low income families, care for the people with physiological and psychological problems and mind care.

3. RESEARCH METHODS

This research employs an exploratory qualitative design, aiming to investigate how Orange Technology, as a human centred paradigm, can be strategically embedded within organizational decision making frameworks [26, 27]. Since Orange Technology is still an emerging research domain with limited empirical validation, the exploratory approach is appropriate to capture its multi disciplinary scope and theoretical linkages. The design emphasizes the synthesis of conceptual models from computing, biomedical engineering, psychology, and cognitive science with established theories of strategic management, allowing for a cross domain examination of phenomena that extend beyond traditional business research boundaries.

The primary data sources include peer reviewed journal articles, interdisciplinary project reports, and case studies related to Orange Technology applications in health, happiness, and OCW models. Special attention is given to the seven subprojects initiated by National Cheng Kung University, which serve as empirical anchors for mapping the disciplinary scope of Orange Technology. Complementary data is drawn from strategic management literature particularly studies on strategy formulation, implementation, and evaluation to explore how managerial frameworks can accommodate human centred technological innovations. To ensure robustness, Scopus database are prioritized for literature collection.

The literature selection followed predefined criteria focusing on relevance to Orange Technology, Strategic Management, and human centered innovation published between 2010–2025 in peer reviewed journals. Keywords such as "Orange Technology," "strategic management integration," "well-being innovation," and "human centered technology" were used. Each source was assessed for theoretical contribution, methodological rigor, and conceptual relevance. The synthesis process employed thematic coding and conceptual mapping, allowing integration of theoretical frameworks from both domains. This ensured transparency and coherence in developing the proposed conceptual framework.

The study adopts a conceptual mapping and thematic synthesis technique [28]. First, thematic coding is applied to categorize Orange Technology research into its core disciplinary clusters (computer science, engineering, biomedical, psychology, cognitive, and social sciences). Second, cross mapping is conducted between these clusters and strategic management domains, focusing on areas such as resource allocation, organizational learning, and performance evaluation.

4. RESULT AND DISCUSSION

Strategic management, is the integrative art and science of making and executing cross-functional decisions that enable an organization to achieve its long-term objectives and sustain competitive advantage. The discussion in this section is structured to address the three research questions proposed earlier. It first explains how the $\mathbf{H_2O}$ triad is integrated within environmental scanning, then describes how Orange Technology models are embedded in strategy formulation and implementation, and finally discusses how performance measurement can be adapted through the Orange Index and *3D-TBSC*. Each part elaborates on how these questions are conceptually answered through theoretical mapping and interdisciplinary synthesis.

This dynamic discipline unfolds through a four stage cycle environmental scanning, strategy formulation, implementation, and evaluation that is especially potent for Orange Technology ventures. During environmental scanning, creative economy firms tap into consumer insights and macro cultural analyses to spot emerging artistic and technological opportunities; in formulation, they leverage tools like SWOT to craft differentiated value propositions grounded in their unique creative assets; through implementation, they operationalize strategic choices via resource allocation, partnerships with cultural institutions, and digital infrastructure; and in evaluation, they adapt balanced-scorecard metrics to capture both economic performance and intangible cultural impact, thereby fostering an iterative cycle of innovation and value creation [29, 30].

4.1. Linking Technology Innovation and Strategic Management

The strategic management of technology-driven innovation involves the intentional alignment of digital innovations with organizational objectives and stakeholder value creation [31]. Recent digital transformation analyses show that embedding technology innovation into corporate strategies fosters creative ecosystems, enhances competitive advantage, and drives social value outcomes [32]. By treating well being encompassing health, happiness, and care as a strategic asset, firms can develop differentiated value propositions that complement financial goals, thus unlocking new market opportunities and deepening stakeholder engagement.

In technology innovation implementation, formulation involves embedding human-centred innovations into corporate objectives to ensure strategic priorities extend beyond efficiency toward well being. Implementation translates formulated strategies into action through programs, structures, and leadership, drawing from the resource based view to leverage digital infrastructure, human computer interaction models, and organizational capabilities . This phase requires interdisciplinary collaboration across engineering, psychology, and computer science to operationalize healthcare technology projects.

Finally, evaluation measures outcomes against planned objectives, relying on the dynamic capabilities perspective to ensure learning, adaptation, and reconfiguration of resources. Evaluation extends beyond financial metrics, incorporating measures of health improvement and social impact through systematic assessment frameworks.

Despite conceptual maturity, there is a phenomenon-level gap in understanding how organizations actually implement strategic management practices to operationalize healthcare technology innovations. Prior studies have detailed digital transformation frameworks and strategic approaches, yet empirical evidence is scarce on the processes, governance structures, and performance measurement systems that firms adopt when integrating human-centred innovations into their strategic routines.

4.2. Linking Orange Technology and Strategic Management

The strategic management of *Orange Technology* involves the intentional alignment of H_2O-driven innovations with organizational objectives and stakeholder value creation. National innovation analyses show that embedding *Orange Technology* into corporate and government strategies fosters creative ecosystems, enhances brand identity, and drives social welfare outcomes [33]. By treating well-being—encompassing health, happiness, and care—as a strategic asset, firms can develop differentiated "well being value propositions" that complement financial and environmental goals, thus unlocking new market opportunities and deepening stakeholder engagement.

In the case of *Orange Technology*, formulation involves embedding human-centred innovations—such as health, happiness, and care into corporate objectives to ensure strategic priorities extend beyond efficiency toward well being. Implementation translates formulated strategies into action through programs, structures, and leadership, drawing from the resource-based view to leverage ICT infrastructure, human–computer interaction models, and organizational capabilities. For *Orange Technology*, this phase requires interdisciplinary

collaboration across biomedical engineering, psychology, and computer science to operationalize projects like senior-care robotics and brain–body fitness programs [34, 35]. Finally, evaluation measures outcomes against planned objectives, relying on the dynamic capabilities perspective to ensure learning, adaptation, and reconfiguration of resources. Evaluation in extends beyond financial metrics, incorporating measures of health improvement, happiness validation, and social impact through OCW systems. Figure 3 differs from existing ESG and well-being frameworks by embedding the H_2O (health, happiness, care) dimensions directly into strategic management through the *Orange Index* and *Three-Dimensional Transformational Balanced Scorecard* (3D-TBSC), making well-being a measurable strategic capability rather than only a social indicator.

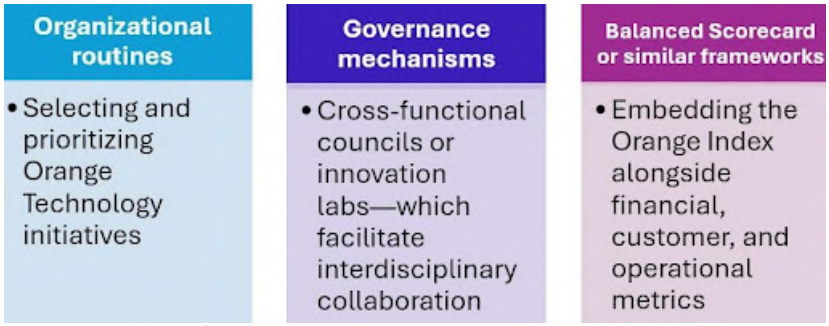

Figure 3. Proposition of Strategic Management Framework related Orange Technology

P1 : Balance Scorecard (BSC), it's important to pay attention where should be embedded the Orange Index, propose this index will be embedded alongside the measurement.

Despite conceptual maturity, there is a phenomenon level gap in understanding how organizations actually implement strategic management practices to operationalize *Orange Technology*. Prior studies have detailed prototype technologies and policy frameworks, yet empirical evidence is scarce on the processes, governance structures, and performance-measurement systems that firms adopt when integrating H_2O-centric innovations into their strategic routines. It is suggested as follows:

P2 : Three dimensional orange technology with BSC embedded in it.

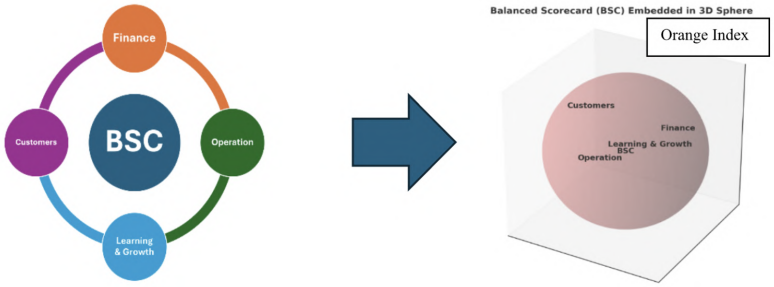

Figure 4. Proposition of Three-dimensional orange technology with BSC

Figure 4 shows the intersection of Orange Technology and strategic management lies in the strategic adoption of human centric technologies to differentiate offerings and build enduring stakeholder value. Studies of national innovation policy in Taiwan illustrate how embedding Orange Technology into corporate and governmental strategies fosters creative ecosystems, enhances brand identity, and drives social welfare [36, 37]. By treating health and emotional well-being as strategic assets, organizations can craft "well-being value propositions" that align with Environmental, Social, and Governance (ESG) goals and unlock new market segments outcomes [38].

TRAIVIS (Training Vision) as one of the orange technologies due to its human centric strategy in educational institutions with learning styles including chatbot, Graduate prediction, Blockchain Metaverse, Blockchain Certificate verification, TRAIVIS token, and E-sport tournaments, spreading the utilization of AI, Blockchain, and Gaming, combining the use of the latest technology through AI and blockchain with human

centric through gaming to achieve the best education certified by the best professors in their fields with the pleasure of playing games to gain financial benefits [? 39].

The four parts of the TRAIVIS Ecosystem TRAIVERSE, Blockchain solutions, AI features, and e-sport are based on three technologies: gaming, blockchain, and artificial intelligence [40] shows in Figure 5 below. To guarantee effectiveness, scalability, and security, TRAIVIS Ecosystem integrates centralized (CE.DB) and decentralised (DE.DB) databases. These elements will be separated into several features and functions that form the system as a whole and provide consumers a distinctive experience. The following users will be served by educational institutions: colleges, universities, professional training facilities, accrediting agencies, etc. Students will utilize services on their own. Organizational service consumers will be third parties. These might include any company that needs validation services for job seekers accreditations, large brands from various sectors that will promote their products on TRAIVERSE.

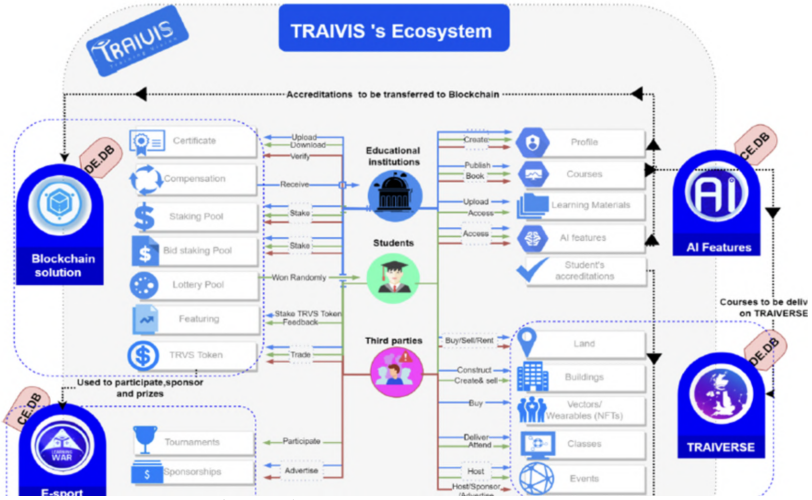

Figure 5. TRAIVIS Ecosystem [41]

The Human centred parts can be tracked when TRAIVIS additional tool that will assist in gauging students comprehension of the course materials is the feedback system. Using the live feed from the users webcam and the picture classification approach, the feedback system will be the ideal tool for getting real input from users. Using AI technology, students facial expressions will be recorded during the lesson and used to forecast how focused and understanding they will be of the material as shown in Figure 6.

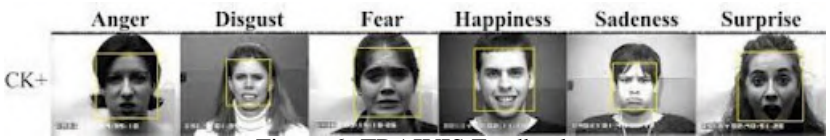

Figure 6. TRAIVIS Feedback

The advantages of employing a feedback system that uses facial expressions to identify areas in which a student struggles to focus. It will specify that a lesson or learning style may not align with the student's interests, and as a result, it will assist teachers in tailoring the course materials.

Empirical observations from preliminary TRAIVIS trials show that integrating AI driven feedback increased student engagement scores by approximately 18% and improved comprehension rates based on system log data. User feedback also highlighted higher satisfaction and reduced stress levels during AI facilitated sessions. These indicative results demonstrate the framework's potential applicability and strengthen its practical value beyond conceptual discussion.

Figure 7. TRAIVIS e-Sport

Last but not least, TRAIVIS Gaming Solution utilize e-sports aim to reduce stress, improve study skills, enhance teamwork, social skills, communication, and decision-making that shows in Figure 7. E-sports, which uses English as the primary language, allows players to interact and collaborate, ultimately improving academic achievement. Furthermore, e-sports can generate income for players, as winning competitions can lead to sponsorships and full-time employment opportunities. Overall, video games offer numerous benefits to individuals and society.

5. MANAGERIAL IMPLICATIONS

The core managerial implication is that organizations must strategically embed Orange Technology the human centric paradigm of health, happiness, and care ($\mathcal{H}_2\mathcal{O}$)—into their strategic management cycle. Managers must treat employee and user well-being as a crucial strategic asset, extending corporate objectives beyond mere financial efficiency. This requires developing differentiated "well-being value propositions" and fostering interdisciplinary collaboration across engineering, psychology, and computer science to effectively operationalize projects like senior-care robotics or AI-driven feedback systems, such as TRAIVIS. These leaders must leverage existing digital infrastructure and human-computer interaction models to successfully translate formulated strategies into practical action, making well-being a measurable competitive advantage.

To bridge the empirical gap in implementation, management must reform performance measurement systems to accurately capture these human-centric outcomes. The study proposes two specific frameworks: first, incorporating an Orange Index directly into the existing Balanced Scorecard (BSC) to measure well-being metrics alongside financial performance. Second, adopting a Three-Dimensional Transformational Balanced Scorecard (3D-TBSC) to capture the intertwined organizational, social, and humanistic impacts of their innovations in a unified framework. By using the Orange Index and the 3D-TBSC, organizations can provide a practical pathway to operationalize Orange Technology principles, linking their long-term profitability and competitiveness directly with advancements in human well-being.

6. CONCLUSION

This study concludes that Orange Technology has the potential to reshape strategic management by embedding human-centric values of health, happiness, and care into organizational practices. Strategic management's established cycle of scanning, formulation, implementation, and evaluation can be significantly strengthened when Orange Technology models are integrated alongside traditional financial and operational indicators. This study differs from previous well-being models by embedding the H_2O (health, happiness, and care) framework directly into strategic management through the Orange Index and Three-Dimensional Transformational Balanced Scorecard (3D-TBSC). This integration provides a new managerial perspective that links innovation performance with human-centric well-being outcomes.

Despite this promise, a phenomenon-level gap remains, as empirical research has yet to fully address governance systems, interdisciplinary collaboration, and performance frameworks for effective implementation. To address this, two propositions are introduced: first, the inclusion of an Orange Index within Balanced Scorecard models to measure well-being outcomes alongside financial metrics; and second, the adoption of a Three-Dimensional Transformational Balanced Scorecard to capture organizational, social, and humanistic impacts in a unified framework. These approaches provide practical pathways for organizations to operationalize Orange Technology while sustaining competitiveness. Finally, innovations such as TRAIVIS highlight how the

paradigm extends into education and creative domains, demonstrating its broader benefits in advancing human well-being, driving innovation, and aligning technological progress with long-term societal sustainability.

This study suggests that policymakers integrate the Orange Index and 3D-TBSC into national innovation and well-being frameworks, while industries embed the H_2O (health, happiness, care) principles into ESG and performance systems to link profitability with human well-being.

7. DECLARATIONS

7.1. About Authors

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7.2. Author Contributions

Conceptualization: DY; Methodology: HD, GP and NA; Software: HD and GP; Validation: NA and DY; Formal Analysis: HD and GP; Investigation: NA, DY, and HD; Resources: DY; Data Curation: HD; Writing Original Draft Preparation: DY, HD, GP, and NA; Writing Review and Editing: DY, GP; Visualization: HD; All authors, DY, HD, GP, and NA, have read and agreed to the published version of the manuscript.

7.3. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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The authors received no financial support for the research, authorship, and/or publication of this article.

7.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

REFERENCES

[1] G. of the Republic of Indonesia, "Law no. 11 of 2019 on the national system of science and technology," Jakarta: State Secretariat of the Republic of Indonesia, 2019, this regulation emphasizes the development of innovation and technology to enhance human well-being and national competitiveness, aligning with the human-centered principles of Orange Technology.

[2] T. Suminar, J. Sutarto, Y. Siswanto, and A. D. Cahyani, "Creating a technopreneurship-based life skills education model with methods of project-based learning," *APTISI Transactions on Technopreneurship (ATT)*, vol. 7, no. 2, pp. 567–581, 2025.

[3] M. G. Hardini, N. A. Yusuf, A. R. A. Zahra *et al.*, "Convergence of intelligent networks: Harnessing the power of artificial intelligence and blockchain for future innovations," *ADI Journal on Recent Innovation*, vol. 5, no. 2, pp. 200–209, 2024.

[4] W. C. Hsu, N. C. Huang, and S. C. Hu, "Well-being trajectories and dynamic resource shifts in the transitions of retirement: A longitudinal study of taiwanese older adults," *Frontiers in Psychology*, vol. 16, pp. 1–15, 2025.

[5] P. C. Verhoef, T. Broekhuizen, Y. Bart, A. Bhattacharya, J. Q. Dong, N. Fabian, and M. Haenlein, "Digital transformation: A multidisciplinary reflection and research agenda," *Journal of Business Research*, vol. 122, pp. 889–901, 2021.

[6] Q. Aini, E. P. Harahap, N. P. L. Santoso, S. N. Sari, and P. A. Sunarya, "Blockchain based certificate verification system management," *APTISI Transactions on Management (ATM)*, vol. 7, no. 3, pp. 1–10, 2023.

[7] D. J. Teece, "The multinational enterprise, capabilities, and digitalization: Governance and growth with world disorder," *Journal of International Business Studies*, vol. 56, no. 1, pp. 7–22, 2025.

[8] A. Usai, F. Fiano, A. M. Petruzzelli, P. Paoloni, M. F. Briamonte, and B. Orlando, "Unveiling the impact of the adoption of digital technologies on firms' innovation performance," *Journal of Business Research*, vol. 133, pp. 327–336, 2021.

[9] S. Allam, "The impact of artificial intelligence on innovation: An exploratory analysis," *International Journal of Creative Research Thoughts*, vol. 3, no. 4, pp. 2–8, 2024.

[10] A. Iqbal, S. Qureshi, and M. A. Chishti, "A review of the good and bad of ai for the environment: Decarbonizing ai," in *Proceedings of the 1st International Conference on Logistics (ICL 2024)*, 2024.

[11] L. Aksoy, S. Choi, T. Dogru, T. Keiningham, M. Lorenz, D. Rubin, and J. B. Tracey, "Global trends in hospitality," *Journal of Business Research*, vol. 142, pp. 957–973, 2022.

[12] M. W. Wicaksono, M. B. Hakim, F. H. Wijaya, T. Saleh, E. Sana *et al.*, "Analyzing the influence of artificial intelligence on digital innovation: A smartpls approach," *IAIC Transactions on Sustainable Digital Innovation (ITSDI)*, vol. 5, no. 2, pp. 108–116, 2024.

[13] L. K. Choi, P. A. Sunarya, and M. Fakhrezzy, "Blockchain technology as authenticated system for smart universities," *IAIC Transactions on Sustainable Digital Innovation (ITSDI)*, vol. 4, no. 1, pp. 57–61, 2022.

[14] G. Nicola and R. Setiawan, "Creating competitive advantage through digital innovation: Insights from startupreneurs in e-commerce," *Startupreneur Business Digital (SABDA Journal)*, vol. 3, no. 2, pp. 131–140, 2024.

[15] C. Citro, G. Cohen, and S. Sturnk, *Innovation, Global Value Chains, and Globalization Measurement*. National Academies Press, 2022.

[16] E. Sansovini and A. Magida, "Effect of digital technologies on employee wellbeing and mental health," *Behaviour and Information Technology*, 2025.

[17] J. W. Creswell and J. D. Creswell, *Research Design*. Sage Publications, 2023.

[18] S. Wijaya, A. Husain, M. Laurens, and A. Birgithri, "ilearning education challenge: Combining the power of blockchain with gamification concepts," *Journal of Computer Science and Technology Application*, vol. 1, no. 1, pp. 8–15, 2024. [Online]. Available: https://journal.corisinta.org/corisinta/article/view/11

[19] F. R. David, F. R. David, and M. E. David, *Strategic Management: Concepts and Cases*, 17th ed. Pearson Education, 2020.

[20] S. Dewi, U. Rahardja, R. A. Sunarjo, E. S. N. Aisyah, and N. P. L. Santoso, "Ai-driven strategic management: A bibliometric study of emerging trends and future opportunities," in *Proceedings of the 12th International Conference on Cyber and IT Service Management (CITSM)*, 2024.

[21] U. Rahardja, P. A. Sunarya, Q. Aini, S. Millah, and S. Maulana, "Technopreneurship in healthcare: Evaluating user satisfaction and trust in ai-driven safe entry stations," *APTISI Transactions on Technopreneurship*, vol. 6, no. 3, pp. 404–417, 2024.

[22] R. Aprianto, R. Haris, A. Williams, H. Agustian, and N. Aptwell, "Social influence on ai-driven air quality monitoring adoption: Smartpls analysis," *Sundara Advanced Research on Artificial Intelligence*, vol. 1, no. 1, pp. 28–36, 2025.

[23] M. Dieste, G. Orzes, G. Culot, M. Sartor, and G. Nassimbeni, "The "dark side" of industry 4.0: How can technology be made more sustainable?" *International Journal of Operations and Production Management*, vol. 44, no. 5, pp. 900–933, 2024.

[24] L. Larisang, S. Sanusi, M. A. Bora, and A. Hamid, "Practicality and effectiveness of new technopreneurship incubator model in the digitalization era," *APTISI Transactions on Technopreneurship (ATT)*, vol. 7, no. 2, pp. 318–333, 2025.

[25] B. Rawat, A. S. Bist, P. A. Sunarya, M. Hardini, N. A. Santoso, and R. Tarmizi, "Unveiling happiness disparities: A machine learning approach to city-village comparison," in *Proceedings of the 11th International Conference on Cyber and IT Service Management (CITSM 2023)*, 2023.

[26] D. Sunaryo, E. P. Lestari, S. Puryandani, and H. Hersugondo, "Driving shareholder value through technopreneurship innovation," *APTISI Transactions on Technopreneurship (ATT)*, vol. 7, no. 3, pp. 751–765, 2025.

[27] T. Pujiati, H. Setiyowati, B. Rawat, N. P. L. Santoso, and M. G. Ilham, "Exploring the role of artificial intelligence in enhancing environmental health: Utaut2 analysis," *Sundara Advanced Research on Artificial Intelligence*, vol. 1, no. 1, pp. 37–46, 2025.

[28] B. Tjahjono, D. Hermawan, S. Millah, and R. Evans, "Bridging the skills gap: Curriculum transformation for automation industries and the role of digital technopreneurship," *APTISI Transactions on Technopreneurship (ATT)*, vol. 7, no. 2, pp. 650–662, 2025.

[29] A. Baiyere, H. Salmela, and T. Tapanainen, "Digital transformation and the new logics of business process management," *European Journal of Information Systems*, vol. 29, no. 3, pp. 238–259, 2020.
[30] R. W. Puyt, F. B. Lie, and C. P. M. Wilderom, "The origins of swot analysis," *Long Range Planning*, vol. 56, no. 3, p. 102304, 2023.
[31] J. B. Barney, D. J. Ketchen, and M. Wright, "Resource-based theory and the value creation framework," *Journal of Management*, vol. 47, no. 7, pp. 1936–1955, 2021.
[32] S. Kraus, F. Schiavone, A. Pluzhnikova, and A. C. Invernizzi, "Digital transformation in healthcare: Analyzing the current state-of-research," *Journal of Business Research*, vol. 123, pp. 557–567, 2021.
[33] L. Yiming, L. Yan, and Z. Jinsheng, "Effects of organizational climate on employee job satisfaction and psychological well-being: the role of technological influence in chinese higher education," *BMC psychology*, vol. 12, no. 1, p. 536, 2024.
[34] L. C. Chang, Y. Liao, H. Tang, S. Huang, Y. Liu, and S. Zhu, "An ecosystem-oriented business model to promote well-being via digital technology: a multi-case narrative inquiry in china," *Asia Pacific Business Review*, pp. 1–21, 2024.
[35] S. Estrada, N. Montalván-Burbano, M. Cabrera-Flores, A. León-Pozo, and J. A. Rueda-Prieto, "Innovation and entrepreneurship: A colour economy glance," in *SHS Web of Conferences*, vol. 211. EDP Sciences, 2025, p. 01001.
[36] O. Al Kasasbeh, "Integrating technological innovations and human resource practices for enhancing organizational performance and employee well-being in developing countries," *ORGANIZE: Journal of Economics, Management and Finance*, vol. 3, no. 2, pp. 101–113, 2024.
[37] Y. Zhang, "Cultivating a culture of innovation: The impact of leadership style on employee well-being and organizational creativity," *International Journal of Global Economics and Management*, vol. 2, no. 1, pp. 202–210, 2024.
[38] "Behavioral patterns of supply and demand sides of health services for the elderly in sustainable digital transformation: A mixed methods study."
[39] G. S. Atencio, "The role of the orange economy in the digital age: An exploratory study in costa rica," *Journal of Comprehensive Business Administration Research*, 2025.
[40] S. Ding, "Impact of board diversity on chinese firms' cross-border m&a performance: An artificial intelligence approach," *International Review of Economics and Finance*, vol. 92, pp. 1321–1335, 2024.
[41] U. Rahardja, S. Graf, L. de Souza Mendes, K. Stylianos, L. Anido-Rifon, and M. J. Fernandez Iglesias, "White paper traivis," Training Vision Ltd, 2022.