

The Role of Healthy e-Business in Society 5.0: The Empowerment of the Human-centric Era

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Abstract—The article is brain waded to simultaneously style healthy e-business and enlighten its role in the new world order that moves forward towards the worldwide innovative human-centric phenomenon designed for long-term prosperity and well-being of all. The research method adopted in the study is founded on secondary data collection using a selected literature review approach, considering the conceptual nature of the study. The research results reveal the definition of healthy e-business and signify the role of e-business in shaping society aimed at empowering human-centricity. The concluding remarks depict the contribution, limitations and future research required to be carried out before the entire implementation into practice.

Keywords - healthy e-business, human-centricity, prosperity, well-being, innovation

I. DEFINING A RESEARCH PROBLEM

The world nowadays is characterised by the pronounced ever-present changes that fly on the wings of a promising new world order at high speed.

A sharp transformation that was:

- initiated by the birth of Industry 4.0 in Germany in 2011.,
- accelerated by the COVID-19 pandemic phenomenon, which spread from China worldwide at the beginning of 2020.,
- reshaped by the Russia-Ukraine war that boomed at the beginning of 2022., and
- outlined by the early signals of the banking crisis that took place at the beginning of 2023.,

strongly indicates a long wave of a significant shift in science, policies, societies, civilisations, economies, businesses, and organisations [1-17, 23].

Recent global research results referring to capitalism and extreme poverty—an analysis that has taken into account human height, real wages, and mortality since the long 16th century [18] on the one hand, and the Kondratieff cycles, a popular method used to analyse war and financial crises [17, 19] on the other—imply a call for scientists to rethink capitalism as a sustainable solution for the future. In other words, lessons learnt from history, accumu-

lated challenges at a global scale [2], recent events, and researches strongly indicate a need for a transformational shift from capitalism to a new system that may satisfy the well-being and prosperity of all in the long run, taking into account all related human-centric aspects. Human-centricity is outlined by Society 5.0 and shaped by collective (hybrid) intelligence ecosystem concepts [1, 8].

Society 5.0 was developed in Japan by Keidanren – Japan Business Federation as a holistic and effective response to all global challenges, representing a future for the world, founded on a human-centric approach, and designed for all [1-3, 6-13]. Society 5.0 is defined as: "*A human-centred society that balances economic advancement with the resolution of social problems by a system that highly integrates cyberspace and physical space*" [1, 8], [12, p. 415], [23, p. 64]. The Government of Japan acknowledged Society 5.0's vision, concept, and strategy in 2016 and broadly boosted its visibility outside the country's borders [1-3, 6-13, 15, 23, 27, 28].

Four years later, i.e. in 2020., a group of authors from Serbia have shaped a human-centric approach by putting a sustainable future at the centre of an innovative conceptualisation that strengthens the collective (hybrid) intelligence ecosystem viewed in an integrated manner. The concept is defined as: "*an innovative approach that encompasses and encourages simultaneous development and growth of both, economies and societies by introducing a concept of deep integration of humans' and smart machines' cognitive and emotional intelligence and open innovation, thus by empowering collective intelligence for the long-term well-being and prosperity of different stakeholder groups in the ecosystem*" [8, p. 134], [12, p. 415], [23, p. 65]. The model is founded on three main building blocks [8, 11, 12, 23]:

- open innovation,
- human beings' cognitive and emotional intelligence,
- artificial cognitive and emotional intelligence;

The transformative journey towards the collective (hybrid) intelligence ecosystem with the vision of a sustainable, noble, and human-centric future implies a significant shift from challenges to opportunities, a set of aligned changes viewed in a multidisciplinary manner, and holistic

and smart management of change to maximise the potential for sustainable economies and societies in the long run [8, 23].

E-business has a significant role in empowering a human-centric era. E-business represents the business that employs the internet to network to empower e-commerce, e-business processes, e-collaboration, and e-communication with all stakeholders. In other words, e-business utilises the internet, intranets, extranets, and other networks to support commercial processes effectively. During its evolutionary journey driven by innovations, e-business has played a notable role in developing the new economy [20]. The development of a new economy can be grounded on key e-business models that determine a business path. For example: "Business to Business (B2B), Business to Consumer (B2C), Consumer to Business (C2B), Business to Government (B2G), Consumer to Consumer (C2C), Peer to Peer (P2P), Government to Citizen (G2C), Citizen to Government (C2G) and Business to Employee (B2E)" [24].

The energetic and high-speed development of information and communication technologies and the birth of Industry 4.0 have fostered the adoption of e-business on a global scale, simultaneously creating various benefits and opportunities on the one hand and costs and risks on the other. Recent research has depicted a growth of financial and non-financial costs and risks as a result of the exponential growth of cyber-attacks on governments, organisations, and individuals. The costs and risks include losses of revenue, sensitive data and reputation that influenced around 49% of organisations worldwide. In 2017, an evidenced loss amounted to more than \$5 billion [10, 25, 26]. To create a sustainable future for all, the key concerns of the study arose:

- What would represent a healthy e-business?
- What is the role of healthy e-business in shaping a human-centric society?

The purpose of the article is to enlighten the reader on the definition of healthy e-business and its role in the new world order that moves forward towards the human-centric era conceptualised by Society 5.0 and collective (hybrid) intelligence ecosystem, a worldwide phenomenon designed for the long-term prosperity and well-being of all.

The paper is structured as follows: The introduction fashions a research problem. The research method sheds more light on the most appropriate method that fits the research problem based on the maturity level and research scope. Research results bring to the table key aspects needed to be considered as an effective response to the research problem. Finally, the paper ends with concluding remarks that contain key limitations, contributions, and future research towards a noble, human-centric era conceptualised for all.

II. RESEARCH METHOD

The overall research study is founded on the analogy of the building blocks of Beckhard and Harris's change model [4, 5, 46-48] where:

- Dissatisfaction with the status quo equals the research problem definition;

- Vision is equivalent to sustainable human-centric concepts of Society 5.0 and Collective Intelligence (Hybrid) Ecosystem [1, 8];
- First steps towards the preferred future state correspond to research results shown in Section 3.

When the research method is in question, the article opted for secondary data collection, considering that the existing theoretical fund has no evidence on the definition of healthy e-business and its role in empowering a human-centric era. In other words, the conceptual nature of the study and the research subject shown in this study for the first time have established a convenient research method grounded on the literature review approach. The review process consists of five stages, i.e. [10, 21, 23]:

- Definition of research criteria,
- Inquiry of relevant literature using reliable databases,
- Selection of the most suitable articles that fit the purpose and scope of the study, including published articles of the authors of this paper followed by Saaty's example of theory development [e.g. 49],
- Examination of selected articles,
- Derivation of results and conclusions.

The research results emanated according to the efforts viewed from two perspectives.

The narrow perspective comprehends a holistic view on:

- Dimensions definition,
- Healthy e-business requirements definition and categorisation in the corresponding dimension,

The broad perspective apprehends a healthy e-business as an entity in the ecosystem, harmonious to satisfy a human-centric vision. With that in mind, the role of healthy e-business is analysed and shown in the section hereafter.

The opted research method aims to maximise reliable research results for the research problem according to the research purpose and scope [21, 22, 10].

III. RESEARCH RESULTS

In order to design a healthy e-business concept that empowers a human-centric era, the study reveals building blocks that outline the phenomenon, based on which definition may be derived. Table 1 shows the holistic overview of aspects that constitute a healthy e-business concept introduced in this article [4, 5, 7, 8, 10, 11-14, 17, 23, 29, 30, 31, 32, 33, 34, 35, 36, 37-44].

Table I. A holistic overview of dimensions that constitute healthy e-business concept

Dimension	Healthy e-business requirements
Political, legal and policy	<ul style="list-style-type: none"> ▪ Strong and secured telecommunications infrastructure at the country level with well-established resilience and risks frameworks through business continuity management, ▪ Legal and policies harmonisation of elements required for reliable healthy e-business at country, regional, and global level aimed at creating values for all: <ul style="list-style-type: none"> □ healthy e-business governance, □ industry standards and performance evaluation, □ clear rules at the market, □ intellectual property rights, □ copyrights, □ security and privacy requirements, □ strict rules for fraud prevention, detection and response. ▪ Effective healthy e-business strategies and change management, ▪ Efficient and effective government and governmental support to all stakeholders, ▪ Effective education governance regarding healthy e-business to all involved parties.
Economic	<ul style="list-style-type: none"> ▪ Healthy growth based on simple, comfortable, cost-efficient, human-oriented and secured doing business in a healthy e-business ecosystem empowered by integrated technologies from Industry 4.0, ▪ Empowerment of a knowledge-based economy.
Organisation and management	<ul style="list-style-type: none"> ▪ Establishment of clear healthy e-business strategies, ▪ Healthy e-business ecosystem development, ▪ Open innovation utilisation in healthy e-business models, ▪ Resilience development and utilisation in healthy e-business models, ▪ Trust development and empowerment in an ecosystem, ▪ Customer-centric orientation in the e-commerce business model, ▪ The shift from shareholders to stakeholders value creation, ▪ Effective change, project and innovation management, ▪ Effective education to all stakeholders, ▪ Effective leadership and trust-based collaboration development, ▪ Development of soft skills that fit the context of Society 5.0.

Technology	<ul style="list-style-type: none"> ▪ High quality of infrastructure, ▪ Strong cybersecurity, information security and privacy, ▪ Emerging technologies integration with healthy e-business models and technologies (e.g. blockchain, AI), ▪ Interoperability, ▪ Resilience utilisation in business continuity management, ▪ Emotional intelligence utilisation in healthy e-business models and technologies, ▪ Dynamic, agile and responsive technology development and effective interactions with humans.
Process	<ul style="list-style-type: none"> ▪ A well-defined, secured, resilient, easy-to-use, efficient process that strongly supports cyber and physical space integration and orientation to human-centric needs.
Social ethics	<ul style="list-style-type: none"> ▪ High morals, integrity and fairness in a healthy e-business ecosystem, ▪ Development of security culture and trustworthy collaboration, ▪ Taking care of mental health in humans, ▪ Respectiveness of human rights and human needs.
Individuals / Humans	<ul style="list-style-type: none"> ▪ Emotional intelligence development in humans, ▪ Empowerment of cognitive intelligence in humans, ▪ Effective decision-making based on fairness and integrated emerging technologies (e.g. AI, big data), ▪ Social and economic equity, ▪ Empowerment of quality of living, ▪ Inclusion into development and further evolution of healthy e-business concept.

Taking into account the holistic overview of healthy e-business requirements that constitute the healthy e-business concept introduced in this article, depicted in Table 1, the healthy e-business represents: *a holistic, multidisciplinary driven and innovative approach of simple, comfortable, resilient, secured, trusted, fair and human-oriented e-business, empowered by an effective support of integrated innovative technologies in a healthy e-business ecosystem with the purpose to ensure prosperity, well-being, and healthy growth of economies and societies in the long run suitable to fit noble sustainable future designed for all.*

Based on the vision and holistic overview of dimensions that build, in an integrated manner, healthy e-business, the role of such a notion in shaping a human-centric society is viewed in two key aspects.

First, when a socio-economic aspect is in question, healthy e-business contributes to the new emerging human-centric era in two fundamental ways:

- Development of healthy growth of economies and societies by integrating all requirements into the healthy e-business ecosystem, depicted in Table 1;
- Development of a new political and economic system, considering that capitalism cannot fit into the new human-centric era. For example, new GDP calculation may take into account the measurement of responsiveness and evolution of government, social and economic equity, resilience level, quality of living, intellectual property, copyrights, human rights, knowledge-based economy results, emotional intelligence development and adoption, mental health, quality of infrastructure, cybersecurity, information security, privacy, and other related aspects that do not constitute the healthy e-business concept [45].

Second, when humans are in question, healthy e-business may ensure a noble, resilient, comfortable, fair, secured, trusted, and high-quality environment that perfectly satisfies the needs of people, enabling perfect work-health-private life balance [11, 23].

From a strategic perspective, the key preferences of the healthy e-business concept lie in empowering a sustainable society and economy based on the development of efficient and effective e-businesses with incorporated hard and soft components, implying a beneficial supply of safe, trusted, resilient and healthy growth of all in the perfect integration of the vision of super-smart and human-centric society drawn by Society 5.0 or Collective Intelligence (Hybrid) Ecosystem [1, 8].

Research results imply significant changes in all related aspects, i.e. in science, societies and economies to satisfy the desired effects. The research results also emphasise the development of a new political-economic system as part of needed changes to align all corresponding components in the human-centric vision.

However, this transformative voyage conveys some challenges needed to be addressed. The main challenge refers to understanding the vision of a human-centric society, the concept of healthy e-business and its role in the human-centric society. Next, unalignment of all required aspects at all levels, inadequate strategic change management and lack of knowledge in the implementation process may end up with poor short-term results and low long-term outcomes.

Accordingly, the transformative journey of healthy e-business towards the Society 5.0 or Collective (Hybrid) Intelligence Ecosystem with the vision of a sustainable and people-oriented future suggests a strong wave shift from challenges to possibilities, with the primary principle on development and alignment of all described building blocks, considered and managed holistically, wisely and in a multidisciplinary mode to maximise the prospect of sustainability to humans, economies and societies [8, 23].

IV. CONCLUDING REMARKS

The article is conceptualised with the purpose to simultaneously fashion healthy e-business and shed more light on its role in the new world order that moves forward towards the worldwide innovative human-centric phenomenon designed for long-term prosperity and well-being of all. Human-centricity is outlined by Society 5.0 and shaped by collective (hybrid) intelligence ecosystem concepts [1, 8].

E-business plays a vital role in strengthening a human-centric society and developing a new economy. However, the rapid growth of information and communication technologies and the origins of Industry 4.0 have accelerated the adoption of e-business, simultaneously bringing benefits and opportunities on the one hand and costs and risks on the other. Moreover, the exponential growth of cyber-attacks on governments, organisations, and individuals as a result of poor resilience have initiated new concerns at a global scale regarding costs and risks that encompass losses of revenue, sensitive data and reputation of all. In 2017, an evidenced loss at a global level amounted to more than \$5 billion [10, 25, 26].

Taking into account that the existing theoretical fund has no evidence on the definition of healthy e-business and the role of healthy e-business in empowering a human-centric era, the paper opted for a secondary data collection using a selected literature review approach that fits the research problem according to the research scope.

Having all in mind, a healthy e-business reveals the holistic overview of dimensions and requirements that constitute a healthy e-business concept introduced in this article for the first time. The results are shown in Table 1, based on which the definition of a healthy e-business is carried out. Besides, the research results depict the role of healthy e-business in shaping a human-centric era, focusing on two key aspects: socio-economic and human beings.

The paper may contribute to the further development of e-business theory, a new political and economic system that measures healthy e-business requirements into the GDP calculation, and a human-centric future. However, despite the contribution, the key limitation of the article lies in the maturity level in the initial phase of conceptualisation. Accordingly, before the implementation into practice, future research should include qualitative and quantitative research analysis [15], simulations and deep test that considers the integration of all requirements enlighten in the study to maximise potential towards the desired outcome according to the vision of the human-centric era.

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