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# CONTRIBUTION OF THE HUMAN-CENTRIC APPROACH TO ORGANIZATIONAL, MARKET, AND HEALTH SUSTAINABILITY

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**Abstract** The particular contribution of the human-centric approach to the creation of sustainability has not been discussed thoroughly. This paper looks at the extensive effects of the human-centric approach, one of the key pillars of Industry 5.0, on organizational, market, and health sustainability. The analysis shows that human-centricity systematically influences all the relevant segments in these three domains of sustainability: from flexible and inclusive organizational structures, ethical leadership and human-aligned digital transformation, to market models based on transparency, personalization, responsible consumption and resilient business ecosystems, to health-oriented technological, organizational and environmental strategies for strengthening long-term well-being. Taken together, these insights demonstrate that the human-centric approach is an integrative mechanism that operationalizes the concept of sustainability, from organizational governance, market dynamics and health systems. The major contribution of this study is the creation of an integrated framework that relates human-centred principles and all the core processes that support organisational, market and health sustainability. The paper explains how focusing on human capabilities, ethical values and experiential knowledge creates long-term ecological, economic and social benefits in Industry 5.0 systems. The results are of immediate use to policy makers in the European Commission and the Community of Practice in Industry 5.0 (CoP I5.0). The analysis conducted based on these aspects assists in designing EU policies that are aimed at sustainable competitiveness by demonstrating that human-centricity contributes to sustainability in various industrial and societal fields.

**Keywords:** Human-centric approach; sustainability; Industry 5.0; community of practice CoP I5.0; organizational sustainability; market sustainability; health sustainability.

## 1. INTRODUCTION

Industry 5.0 has three main conceptual pillars, which include the human-centric approach, sustainability, and resilience. To develop Industry 5.0 successfully, all three of these concepts should

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be developed at the same time. It is important to attain a consistent balance between these factors because concentrating on one of them separately can lead to a poor industrial performance. Nevertheless, it is not yet clear whether the development of the human-centric pillar directly leads to the development of another pillar, which is sustainability. It is clear that there is a necessity to find out whether the priority of human needs leads to the establishment of tangible synergies with the wider ecological and economic objectives. Therefore, this study aims to reveal this particular effect. In this regard, the paper will discuss the extent and nature of the effect of the human-centric perspective on the formation of organizational, market, and health sustainability.

Industry 5.0 describes the human-centric approach as a design, development and implementation approach that puts human capabilities, needs, and well-being at the heart of the development of technologies and industrial processes. This is an alternative to the usual view of workers as parts of a system where they are instead regarded as important assets whose full potential is realized with the assistance of technology. The target direction of this particular orientation is that it enables intuitive interaction between people, machines, intelligent systems and the working environment with the objective of optimal efficiency and safety without being out of sync with ethical principles and social values. This kind of fit creates an ecosystem of collaboration where more sophisticated systems can take up recurring or hazardous activities, and humans are left to decide on creative and difficult problems. This eventually makes sure that technology contributes towards workforce empowerment by making sure that the production process is modified to suit human needs, as opposed to forcing the worker to adapt to the technology.

Globally observed, sustainability within the meaning of Industry 5.0 stands for the integration of ecological, economic and social factors in the creation of technologies and the industrial process. This far-reaching approach requires manufacturing systems to operate within the planetary boundaries, as part of the solution to meet the societal challenges. The goal is the attainment of a long-range objective on one side in order to ensure sustainability of resources, adverse environmental impacts, community welfare, and the coupling of production and innovation with responsible management of the planet. By making these principles part of people's way of business, industries can make the change from linear 'take-make-waste' models to circular systems based on restoring natural capital. By this means, the industrial sector becomes not only a passive bearer of resources but an active regenerator, factor of positive social transformation.

## 2. CONTRIBUTION OF THE HUMAN-CENTRIC APPROACH TO ORGANIZATIONAL SUSTAINABILITY

Organizational sustainability entails acquisition and application of business strategies, management, and working conditions that guarantee the survival, growth, and sustainability of organizations in the long term. It is attained through the creation of a balance between economic, ecological, and social and a constant adaptation to the market, changes in technology and society's expectations.

### 2.1. Segments in Which the Human-Centric Approach Contributes to Organizational Sustainability

The human-centric approach is a way to make the organization sustainable because it will place people at the heart of the business thus enhancing employee engagement, innovation, and loyalty that over time will improve organizational resilience and competitiveness. Besides, the human-focused

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model promotes sustainability by placing human needs, well-being, and engagement at the center of organizational strategy, which promotes innovation, resilience, and long-term growth in line with societal values. The following are the main indicators that explain in what segments and how the human-centric approach contributes to organizational sustainability (Figure 1).

#### *2.1.1. Creating Flexible Organizational Structures*

The human-centric approach allows organizations to design structures by adapting to new work conditions through the active incorporation of employees in the decision-making and work design processes [1]. This strategy motivates organizations to develop a flexible structure that can promptly adapt to the changes in technology and market. The organizations get resistant and more innovative as employees get involved in the transformation process, and this is directly linked with sustainability [2].

#### *2.1.2. Digital Transformation With Customized Work Processes*

Digital transformation as a human-centric concept emphasizes not only the technology but both the experience of employees and the optimization of the approaches to minimize the cognitive burden and the well-being of the workers. By so doing, organizations are also able to enhance effectiveness besides conserving human capital [3].

#### *2.1.3. Enhancing Leadership Through Human–Technology Interaction*

Human-centric transformational leadership makes employees more engaged and satisfied since the leaders are able to integrate technology with good human relations. This way the organizational loyalty and resilience are improved [4].

#### *2.1.4. Supporting a Collaborative Culture and Teamwork*

The human-centered approach fosters collaborative culture through emphasis on knowledge sharing and teamwork as driving innovation and sustaining culture. Through this approach organizations design inclusive and innovative work environments [5].

#### *2.1.5. Customized Employee Development Programs*

Human-centric approach in HRM leads to tailored training and development programmes, which results in improved employability of employees and less turnover. Such programs help in making an organization competitive and long-term sustainable [6].

#### *2.1.6. Sustainable Organizational Culture and Ethical Business Practices*

Companies that use a human-centered implementation model invest in employee wellness and ethical HR strategies, which result in better productivity, innovation, and reputation in the market. These practices allow stable and sustainable growth [7].

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### *2.1.7. Development of Hybrid Work Models for Better Work–Life Balance*

The human-centric approach allows using hybrid work arrangements giving staff members more flexibility and balance resulting in motivation and organizational resiliency. This minimizes staff burnout and increases productivity over the long run [8].

### *2.1.8. Optimization of Organizational Resources Through AI and Human Decision-Making*

The combination of information-based decision-making and human-centred management allows for the best use of resources and also helps build organisational resilience. The balance between the analytics and human values make to long-term sustainability [9].

### *2.1.9. Improving Organizational Resilience Through Crisis Management*

The crisis-related human-centric leadership facilitates more effective communication, adjustments, and support of employees, thus, making organizations less vulnerable and recovery-seeking in a shorter period [10-11].

### *2.1.10. Employee Involvement in Strategic Decision-Making*

Human-oriented approach consists of the act of engaging employees in strategic decision making and thus rendering them more engaged and enabling organizations to come up with resilient and sustainable strategies [12].

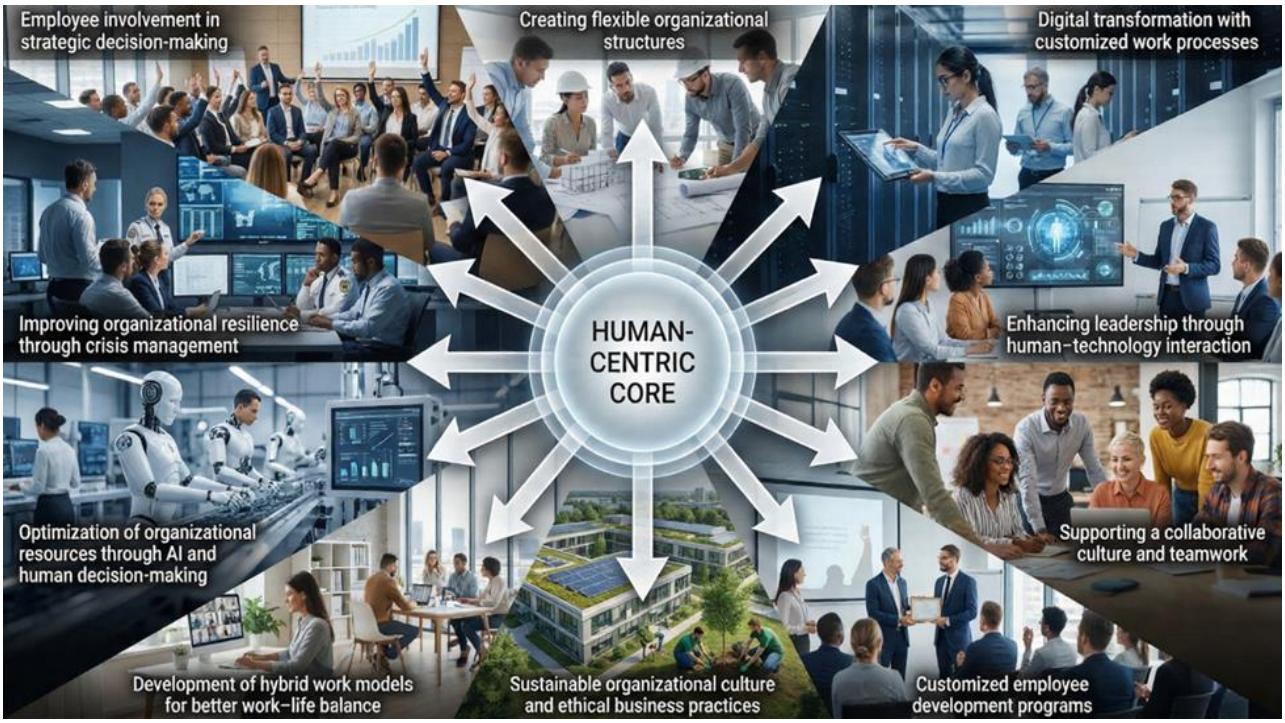


**Figure 1. Main segments in which the human‑centric approach contributes to organizational sustainability (figure created using a digital graphic tool to illustrate conceptual relationships).**

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## 3. CONTRIBUTION OF THE HUMAN-CENTRIC APPROACH TO MARKET SUSTAINABILITY

Market sustainability is connected with the development of long-term, stable and ethical market models, which allow achieving sustainable economic growth, reasonable competition, flexibility to consumer needs and changes, and accountable management of resources and relationships with consumers, and minimise adverse effects on the society and the environment.

### 3.1. Segments in Which the Human-Centric Approach Contributes to Market Sustainability

Human-centered approach allows designing market models that meet consumer demands and social trends, and also ensure ethical business practices, healthy competition, and sustainability of markets. Under the interaction of people and technology, businesses can forecast and address consumer needs, minimize risks in the market, and enhance business longevity. The indicators below explain in what major segments (where and how) the human-centric approach helps to make the market sustainable (Figure 2).

#### *3.1.1. Personalization of Products and Services Through User Interaction*

The human-centric approach allows customizing products and services based on the feedback of users collected and analyzed. This enables businesses to develop products that are more pertinent and long-term sustainable since they are in line with the real needs of the consumers [13-14].

#### *3.1.2. Maintaining Fair Competition Through Transparency and Ethics*

The human-centric approach to designing and implementing algorithmic systems implies the involvement of various stakeholders in the decision-making process, which enhances transparency and minimizes the risk of discrimination. By engaging in multidisciplinary cooperation between researchers, practitioners, policymakers, and citizens, one can come up with solutions that will improve fairness and accountability in market interactions [15]. The human-centric market models enhance consumer confidence by being transparent and ethical in their supply chains. By doing so, the threat of monopolies is minimized and healthy competition promoted [16].

#### *3.1.3. Dynamic Adaptation to Market Changes*

The human-centric approach will allow organizations to make strategic adjustments out of the perception of user needs and experiences, and it allows them to achieve greater responsiveness to shifts in market conditions. This strategy helps to develop the versatile models of the business that may respond to the new requirements and expectations, combining the technological, strategic, and organizational levels [17]. A good digital communication enabling user experiences also enhances the competitiveness and organisation in a changing and dynamic market.

#### *3.1.4. Increasing Customer Loyalty Through Brand Humanization*

Brands that are human-centric enhance the emotional bond with the consumers by providing personalized communication and responsible business conduct. This translates to increased loyalty and stability in the market [18].

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#### *3.1.5. Sustainability Through Environmentally and Socially Responsible Products*

The human-centric design method that emphasizes user needs and values in the design of products allows the creation of products that are not only functional, but also sustainable and socially responsible [19]. The strategy will foster active participation of the users, which will lead to increased acceptance of ecological products, and a subsequent increase in their long-term use. Human-centric design assists in mitigating adverse environmental effects and encourages environmentally friendly practices by studying everyday behavior of consumers.

#### *3.1.6. Digitalization of Commerce for Access to Global Markets*

The digitalization of business in the human-centric models allows the availability of products globally in a manner that embraces ethical values and ethical business operations. This adds to the sustainability of the market with equitable access and adjustment to various consumer groups [20].

#### *3.1.7. Creating Market Models Based on Resource Sharing*

The human-centric strategies allow creating markets that are founded on the sharing economy where communities share resources and minimize overconsumption. The human-centric model of the market based on the idea of sharing resources implies the inclusion of the interests of various stakeholders and the development of decentralized platforms that empower communities and users [21]. This strategy creates credibility and promotes the sustainability of sharing models in the long term through institutional collaborations [21].

#### *3.1.8. Strengthening the Economy Through Education and Innovation*

The human-centric strategies play the central role in enhancing the economies by means of education and innovation. Such tactics lead to more committed and competent workforce by placing special importance on matching the educational systems with the needs of community, as well as, individual desires, which are more prepared to promote innovation. The business education concept aims to affirm community needs, emphasizing the significance of the educational frameworks that pay attention to the societal betterment and sensitivity to local scenarios [22].

#### *3.1.9. Prevention of Market Crises Through Predictive Analytics*

Human-centric predictive analytics allow identifying risks and possible problems in consumer behavior or market trends before they turn into crises. This helps in the sustainability of the market in the long run [23].

#### *3.1.10. Improving Logistics and Reducing Distribution Costs*

Human-centric innovations in the field of logistics utilize digital innovations and user feedback to optimize distribution. A human-centric approach to logistics allows to operational optimisation by recognising the needs and capabilities of workers, thereby increasing the efficiency and reducing the costs of labour [24]. The integration of Digital Twin technology and machine learning algorithms makes it possible to dynamically adjust in real-time storage and distribution strategies. This approach

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brings substantial improvements in processing time, forecasting accuracy and reduction of operational costs - with no complete automatisation required [24].

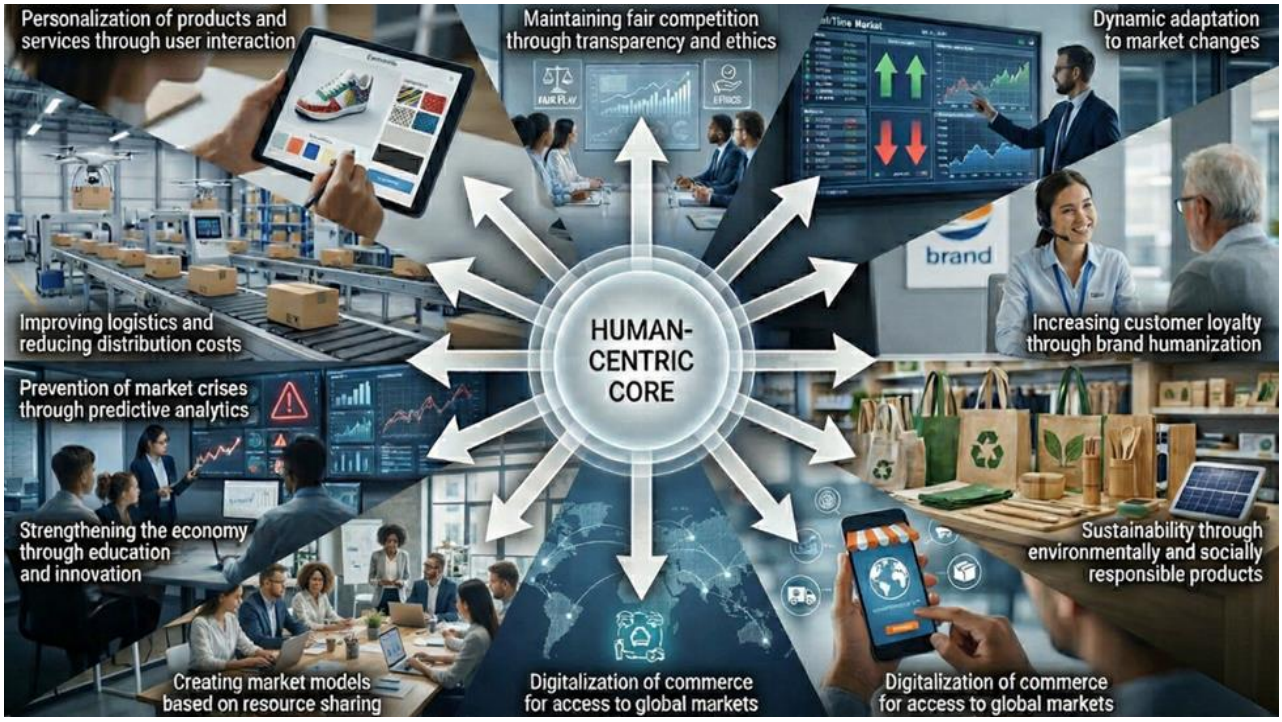


**Figure 2. Main segments in which the human‑centric approach contributes to market sustainability (figure created using a digital graphic tool to illustrate conceptual relationships).**

## 4. CONTRIBUTION OF HUMAN-CENTRIC APPROACH TO HEALTH SUSTAINABILITY

Health sustainability is the establishment and application of strategies, technologies, and work models that allow maintaining and enhancing physical and mental health in the long term, minimizing adverse industrial effects on the health of the population, and providing safe and healthy working and living conditions.

### 4.1. Segments in Which the Human-Centric Approach Contributes to Health Sustainability

The human-centric approach allows the development of working conditions, technologies, and organizational strategies that enhance the long-term health of employees and society. This is done by optimization of the workplace, reduction of stress, proper rest and greater access to health resources. The following are some of the indicators that indicate the segments, where and how, the human-centric approach can help in health sustainability (Figure 3).

#### *4.1.1. Designing Ergonomic Workplaces to Reduce Physical Injuries*

The human-centric approach also helps in promoting the health of the employees by creating ergonomic work environments that minimize the chances of musculoskeletal injuries and increase the physical resilience of the workers. Ergonomic assessment tools in the context of Industry 5.0 are

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digital and allow monitoring the movements of workers individually and adjusting the work processes in time [25].

#### *4.1.2. Reducing Occupational Stress Through Working Time Management Systems*

Human-centric approaches incorporate smart methods of time management, the balance of productivity and employee well-being. Grubisic [26] shows that efficient organization and management of working time can relieve the stress of employees and conducive to improvement of working condition and emphasizes the research methodology that is apt to discover this phenomenon in an organizational context.

#### *4.1.3. Implementation of AI Diagnostics for Early Detection of Health Issues*

Utilization of AI in human-centered healthcare systems allows the discovery of diseases early in their progression and offers customers medical services. Physiologically-based AI diagnostics help to achieve the accessibility and equity of healthcare services [27].

#### *4.1.4. Reducing Exposure to Hazardous Substances in Industry*

The human-centric approach to the industrial setting entails the creation of strategies that focus on the health of the workers by determining and managing the exposures to the dangerous substances. With the help of the combination of the modern risk evaluation techniques and specific preventive strategies, the number of contacts of employees with heavy metals and other harmful agents can be decreased. Begic [28] is concerned with the selection of personal protective equipment (PPE) in accordance with the risks associated with the welding fume emissions, and the fact that in the cases where engineering controls are not sufficient to completely eliminate the hazards, PPE is the last and the only line of defense against exposing and injuring workers.

#### *4.1.5. Enhancing Mental Health Through Technological Support*

The human-centric model of digital mental health interventions is the active participation of end users in the design process, and it makes solutions more relevant and long-term sustainable. By means of participatory practices like co-design and user-focused design, one can create technologies that are more aware of how users, situations, and expectations work out to improve both usability and efficacy [29]. This will help to streamline the technological support of mental health with ethically sound, culturally tailored and viable provision within a variety of healthcare environments.

#### *4.1.6. Disease Prevention Through Personalized Health Programs*

The human-centric nature of the personalized health programs allows adaptation of the preventive strategies to the specific genetic, clinical, and lifestyle characteristics of the individual, which enhances their effectiveness and sustainability. These programs facilitate proactive health management and decrease the risk of chronic diseases by combining the information of different sources and engaging the users in the decision-making process [30]. This strategy helps to sustain health by connecting individualized prevention to the population-based health strategies that are morally sound and financially sustainable.

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#### *4.1.7. Accelerating Medical Innovation Through Human–Machine Collaboration*

The human-centric vision of human-machine cooperation allows the synergy of human and intelligent systems to be used to achieve quicker diagnostics, more accurate treatment, and more effective creation of medical innovations. The combination of algorithmic analysis and human knowledge allows optimizing the process of decision-making and speeding up the process of research-to-clinic translation [31]. This strategy helps in ensuring health sustainability through enhancing access and quality of healthcare, and at the same time maximizing resource allocation.

#### *4.1.8. Improving Air Quality in Urban Environments*

The human-centric approach to urban planning combines the air pollution reduction strategies with those that would also improve the quality of life and health of the population. It is possible to create solutions that will solve climate change, air quality, and community health in a unified way by engaging communities and local stakeholders in the decision-making process [32]. The strategy helps in the sustainability of health because it connects the technical reduction of emissions with social and health benefits at the city level.

#### *4.1.9. Reducing Health Inequalities Through Digital Medicine*

The human-centric approach to digital medicine allows creating solutions that meet the needs of different social groups and, thus, decreases the digital divide and improves fair access to healthcare services. The inclusion of users with different socioeconomic and cultural backgrounds in the design and implementation process allows the development of technologies that are more consistent with the real-world conditions and needs of communities [33]. This strategy helps in ensuring health sustainability through the connection of technological innovation to the concepts of equity, accessibility, and long-term sustainability of healthcare systems.

#### *4.1.10. Creating Sustainable Health Policies Based on Data*

The human-centric approach to the development of data-driven health policies implies the incorporation of information obtained through various sources into the center of patient and community needs, which enhances the relevance and efficacy of interventions. It is possible to connect administrative, medical, logistical, and paramedical data, which makes it possible to create policies that will enhance the quality of care and optimize the use of resources at the same time [34]. The method helps in the sustainability of health because it allows making decisions based on integrated, comprehensive, and user-friendly information.

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**Figure 3. Main segments in which the human‑centric approach contributes to health sustainability (figure created using a digital graphic tool to illustrate conceptual relationships).**

## 5. CONCLUSION

The paper validates the fact that the human-centric approach is a significant facilitator of organizational, market, and health sustainability in Industry 5.0. Human-centricity improves organizational flexibility, ethical leadership, employee growth, and resilience when implemented in all the applicable segments; it facilitates market models based on transparency, fairness, and responsible consumption; it also promotes health sustainability by providing ergonomic work systems, stress-reducing organizational behaviors, early diagnostics, equitable access to healthcare, and environmentally responsible planning. These impacts prove that human-centricity is not merely a social principle but a structural force which can coordinate technological and economic growth with long-term social welfare. To decision-makers - especially in the European Commission and CoP I5.0 - the results indicate that the investment in human-centric strategies is a viable way to achieve more sustainable and competitive European industries and societies. By focusing on human capabilities, ethical technological development, and inclusive innovation, it is possible to make the shift to the full Industry 5.0 vision much faster; economic growth, market stability, organizational viability, and public health are mutually reinforcing goals, not competitive ones.

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