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# FROM EFFICIENCY TO EMPATHY: RECONSTRUCTING TECHNOLOGY MANAGEMENT THROUGH A HUMANITIES APPROACH IN THE DIGITAL WORK ENVIRONMENT

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**ABSTRACT**

This study examines the paradox of digital workplace transformation where efficiency-driven technologies often dehumanize workers. Using qualitative library research and content analysis, the study identifies a humanitarian crisis in automation marked by algorithmic pressure, cognitive alienation, and weak legal protection for digital workers. The findings emphasize the need to rehumanize virtual workspaces by integrating ethics, aesthetics, and algorithmic justice through digital empathy and human-centered design. The research proposes an empathetic technology management model that prioritizes human well-being alongside productivity, promotes empathy-based leadership, and strengthens humanistic digital literacy. The study concludes that shifting from efficiency to empathy requires structural, managerial, and regulatory changes, supported by technology audits, HR policy reform, leadership training, and multi-stakeholder collaboration to create a fair and humane digital work environment



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## INTRODUCTION

The massive digital transformation that has taken place over the past two decades has brought fundamental changes to the global employment landscape, creating a paradox unprecedented in the history of industrial relations. On the one hand, advances in information and communication technology promise previously unimaginable efficiency, productivity, and flexibility, enabling organizations to optimize resources and respond to market dynamics with incredible speed. However, on the other hand , the implementation of technology that is not balanced with humanistic considerations has actually given rise to a profound humanitarian crisis, where workers experience psychological stress, loss of autonomy, and alienation from the meaning of work itself. This phenomenon cannot be understood as simply an inevitable side effect of progress, but rather as a direct consequence of the way we design and implement technology in contemporary

management systems. When efficiency is placed as the highest goal, while the human dimension is ignored, technology, which should be a tool of liberation, is transformed into a dehumanizing instrument of control (Bolis et al., 2025).

The concept of Industry 5.0, which is gaining widespread attention in contemporary academic literature, offers an alternative framework that places humans at the center of the technological ecosystem. Unlike the technocentric approach of Industry 4.0, which focuses solely on automation and efficiency, Industry 5.0 explicitly emphasizes the importance of human values, sustainability, and resilience in the development of socio-technical systems. This paradigm shift stems from the realization that technology not designed with human needs and dignity in mind will ultimately be counterproductive, not only to the well-being of workers but also to the sustainability of the organization itself. It is in this context that the human-centered design approach becomes increasingly relevant, as it offers a methodology for integrating user perspectives into the entire technology development cycle, ensuring that the systems built truly serve human needs, not the other way around. However, the implementation of this concept in daily management practice still faces major challenges, especially because the existing incentive structure and organizational culture are still heavily dominated by the logic of short-term efficiency (Bolis et al., 2025).

One of the most obvious manifestations of the humanitarian crisis in the digital era is the phenomenon of technostress or technological pressure experienced by workers in various sectors. When organizations adopt new information and communication systems without considering employees' psychological readiness, what happens is a decline in well-being and productivity in the long term. Recent research shows that specific support from superiors in the use of information and communication technology plays a crucial role in reducing the negative impact of technostress. Employees who feel supported by their leaders in addressing technology challenges tend to have better control over time and resources, and experience increased vitality and positive learning experiences. These findings confirm that the success of digital transformation is not solely determined by the sophistication of the adopted technology, but rather by how it is integrated into humane and supportive management practices. In other words, relational and leadership dimensions are key factors in determining whether technology will become a tool of empowerment or a source of new pressures (Zhang et al., 2025).

In the Indonesian context, the challenges faced in digital transformation are no less complex than those in other developing countries. The widening digital divide, particularly between generations who grew up with technology and those who had to adapt later in life, creates its own dynamics in the workplace. Research conducted at state-owned enterprises in Indonesia revealed that employee digital behavior, including digital knowledge and skills, technology availability, and adoption of technological innovations, has a significant impact on performance, particularly among Generation Z employees. Interestingly, however, the same research also showed that positive digital behavior in the workplace can only develop with leadership support, adequate technology availability, and a culture of collaborative learning among employees. This indicates that successful digital transformation requires an ecosystem approach, where technological, human, and organizational factors work synergistically, rather than in isolation (Nuraini et al., 2024).

The increasingly popular concept of smart workspaces post-pandemic presents new challenges in human resource management. When work can be done from anywhere and at

any time, the boundaries between professional and personal spheres are blurred, creating the need for more sophisticated and humane management strategies. The implementation of digital tools in HR management, such as cloud-based systems, digital communication platforms, and performance evaluation tools, has been proven to increase employee engagement and job satisfaction when implemented appropriately. However, the success of such implementation depends heavily on organizational readiness, management support, and ongoing training programs. Resistance to change and a lack of understanding of how to use technology effectively remain major barriers to overcome. Thus, digital transformation in HR management is not just a technical issue of technology adoption, but rather a complex change management issue that requires a holistic approach (Rahadi et al., 2025).

The Society 5.0 paradigm, initiated in response to the challenges of the digital era, offers a vision of a society where technology serves to improve the quality of human life, not replace it. In the context of talent management, the Society 5.0 approach emphasizes the importance of a human-centered strategy, where employee development is carried out by considering individual aspirations, psychological needs, and unique potential of each individual. Recent research shows that organizations that adopt this approach are able to create a work ecosystem that is not only productive but also supports well-being and long-term career sustainability. These findings have important implications for management practices in Indonesia, where the pressure to compete in the global market often sacrifices the human dimension of human resource management. By adopting a Society 5.0 perspective, organizations can design a more balanced talent development strategy, integrating business needs with employee aspirations (Demir & Dal, 2025).

The integration between digital technology and sustainable human resource management is a central theme in contemporary academic discussions. An integrative strategic approach that combines business information system optimization with sustainable personnel management has proven to be able to create a digital work ecosystem that supports both employee efficiency and adaptability. By adopting theoretical frameworks such as Sociotechnical Systems Theory and Sustainable HRM, organizations can optimize the potential of digital technology without neglecting the human aspects and employee capacity development. Case studies from large companies in Indonesia show that the success of digital transformation is largely determined by the synergistic collaboration between technology systems and long-term oriented HR management strategies. The implication is that investment in information systems must be balanced with strengthening HR management strategies, continuous training, and building an adaptive work culture so that productivity increases can be achieved consistently and sustainably (Sulaeman, 2025).

Furthermore, the issue of fairness and inclusivity in the implementation of digital technology cannot be ignored. When algorithmic systems are used in recruitment, performance appraisal, or promotion processes, there is a risk that existing biases in society will be reproduced and even reinforced by technology. Research on the integration of digital technology and Green Human Resource Management shows that digital transformation plays a dual role: on the one hand, strengthening the effectiveness of HR practices, but on the other hand, it can create new inequalities if not managed wisely. In the context of the Indonesian energy sector, for example, uneven digital readiness can actually weaken the relationship between sustainable operational practices and sustainability performance. This demonstrates that digital transformation is not a quick fix, but rather a

complex process that requires a coordinated, cross-functional strategy and serious attention to aspects of fairness and inclusivity so that its benefits can be felt by all stakeholders (Prasetyo et al., 2025).

Given the complexity of the issues outlined above, it becomes increasingly clear that a fundamental reconstruction is needed in how we understand and practice technology management in digital workplaces. This reconstruction goes beyond simply making technical adjustments or adding user-friendly features to existing systems. It demands a paradigm shift from a purely efficiency-oriented approach to a human-centered approach, where technology is understood as a means to human flourishing, not the other way around. The humanities, with their rich tradition of pondering questions of meaning, value, and the purpose of human life, offer invaluable conceptual resources for this reconstruction project. Philosophy teaches us to ask about the conditions that enable human flourishing, ethics provides a framework for assessing whether our management practices are just and dignified, aesthetics reminds us of the importance of experience and beauty in work, while hermeneutics emphasizes that understanding is always an interpretive process that can never be fully algorithmized. By integrating these perspectives into technology management, we can design digital workplaces that are not only efficient but also humane, just, and meaningful.

## METHOD

This study uses a qualitative approach with a library research method , which is a type of research conducted by collecting , reading, recording, and processing library materials as the primary data source to answer the formulated research problems. The selection of this type of library research is based on the consideration that the topic being studied, namely the reconstruction of technology management through a humanities approach in the digital workplace, is a conceptual-theoretical theme that requires an in-depth exploration of the thoughts of experts documented in various literature. Library research is not merely the activity of reading and recording literature, but rather a systematic process that involves the ability to analyze, synthesize, and critique various ideas to produce a new, complete and comprehensive understanding (Hamzah, 2022).

As a library research, this study does not require the researcher's presence in the field or direct interaction with the research subjects through interviews or observations, but rather makes written texts the main object of study that are analyzed critically and reflectively. Library research has special characteristics that distinguish it from other types of research, namely that the data used is ready-to-use, meaning the researcher does not need to go into the field to collect raw data because library sources are already available in libraries or digital repositories, the data is secondary, meaning the researcher does not obtain it directly from first-hand but through documents that have been written by other parties, and the data is not limited by space and time, allowing the researcher to trace thoughts from various periods and geographical regions. In this study, the library approach allows the researcher to comprehensively explore critical thoughts on the impact of technological dehumanization in the digital workplace from international thinkers such as Shoshana Zuboff on surveillance capitalism, Bernard Stiegler on cognitive disintegration, and other contemporary experts whose thoughts are documented in books published between 2020 and 2025 (Zed, 2020).

The data sources in this study are classified into three main categories, each of which has a specific role and function in building research arguments. The first category consists of books, both international English-language books and national Indonesian-language books, which serve as primary sources because they present comprehensive, systematic, and in-depth thoughts from experts on themes relevant to the research. The books used as sources in this research were deliberately selected based on the following criteria: relevance to the research topic, which includes issues of automation, technology management, humanities, digital ethics, worker welfare, and the transformation of the digital workplace; recency with a publication period of 2020 to 2025; the credibility of the authors recognized in their fields; and availability of access through physical libraries and digital repositories. The second category consists of scientific journal articles published in reputable international and national journals, which serve to enrich the analysis with the latest empirical research findings and contemporary academic debates on the issues studied. The third category is research reports from trusted research institutions, including government agencies, non-governmental organizations, and international organizations, which present empirical data on the real conditions of digital workers, the psychological impact of algorithmic pressure, and best practices in humanistic technology management (George & Paul, 2024).

The data collection technique in this library research is carried out through the documentation method, which is a data collection technique carried out by searching , finding, collecting, recording, and documenting library sources relevant to the research topic. The data collection process is carried out through several systematic stages starting with identifying data needs based on the problem formulation and theoretical framework that has been prepared, followed by a literature search both manually through visits to physical libraries and digitally through academic databases. In the digital literature search, researchers use relevant keywords both in English such as "algorithmic management," " digital labor ," " workplace alienation ," " humanistic management ," " digital empathy ," " algorithmic fairness ," " workplace well-being ," " humanities and technology ," as well as in Indonesian such as "algorithmic management," "digital workers," "work alienation," "humanistic management," "digital empathy," and "digital worker welfare." After the literature has been successfully identified and accessed, the next stage is to conduct a selection and critical evaluation of the literature based on the criteria of relevance, currency, author credibility, and the quality of the arguments presented, then continued with systematic recording using data collection instruments in the form of note cards or summary tables containing the identity of the source, main ideas, important quotes, and their relevance to each sub-discussion in the research (Burke, 2025).

The data analysis technique in this study uses a qualitative content analysis approach, which is a systematic analysis technique for processing and interpreting the meaning of collected texts through the process of coding, categorization, and drawing conclusions. The data analysis process is carried out through three main stages that are interrelated and continuous. The first stage is data reduction, namely the process of selecting, focusing, simplifying, and abstracting raw data obtained from library sources. In this stage, the researcher reads in depth all the collected literature, identifies parts relevant to each sub-discussion, assigns specific codes to each unit of meaning found, and groups these codes into broader categories according to the research conceptual framework. The second stage is data presentation, namely the process of compiling and organizing the reduced data into forms that facilitate drawing conclusions, such as matrices, networks, or charts. In this study, data presentation was carried out by compiling a thematic synthesis for each sub-

discussion, where ideas from various sources were integrated to build a coherent argument about the humanitarian crisis, the rehumanization of virtual workspaces, and empathetic technology management models. The third stage is drawing conclusions and verifying, namely the process of formulating meaning from the data that has been presented by identifying emerging patterns, themes, relationships, and propositions, and verifying these conclusions by checking back with the original data sources and ensuring that the conclusions are supported by adequate evidence (Ahmad & Muslimah, 2021).

Data validity testing techniques in qualitative research, including library research, are a very crucial aspect to ensure that research findings can be scientifically accounted for. In this study, data validity testing was carried out through four main criteria put forward in the qualitative research tradition, namely credibility, transferability, dependability, and confirmability. To meet credibility criteria, researchers triangulate data sources, comparing and cross-checking the trustworthiness of information obtained from various sources. In the context of this research, source triangulation is conducted by comparing the thoughts of different experts on the same issue, for example, comparing Shoshana Zuboff's analysis of surveillance capitalism with Bernard Stiegler's thinking on cognitive disintegration or with empirical findings from research reports on the psychological impact of platform work (Sugiyono, 2022).

## RESULTS AND DISCUSSION

### The Humanitarian Crisis in the Age of Automation: Between Algorithmic Pressure and the Alienation of Digital Workers

Discussions about the humanitarian crisis in the age of automation must begin with a deep understanding of how digital technology has transformed from a mere tool into a controlling structure that determines the dynamics of labor relations. This phenomenon cannot be understood simply as a technical advancement, but rather as a fundamental shift in the power relations between workers and the systems that manage them. As algorithms take over managerial functions previously performed by humans, there is a radical shift in how workers experience their daily lives in the digital workplace. Workers no longer face superiors with whom they can discuss or understand their personal circumstances, but rather face a black-and-white system that only reads numbers and metrics without being able to capture the complexity of human situations. In this context, it is important to refer to the critical thinking put forward by Shoshana Zuboff in her landmark work, in which she explains how surveillance capitalism has created a systematic mechanism of behavioral extraction, where data generated from workers' activities is treated as a corporate asset without ever being recognized as a work contribution worthy of compensation or protection (Zuboff, 2020).

The structural injustice that arises from these unequal power relations becomes even more apparent when we examine how digital platforms operate with minimal levels of transparency. Workers are forced to accept decisions that affect their livelihoods without ever being given access to understand the logic behind them. Performance scores that determine the number of orders or even the continuity of employment relationships exist as uncontested digital facts, creating what has been called algorithmic violence when work is controlled through a system design that never explains itself. This situation is exacerbated by the fact that the knowledge asymmetry between platforms and workers reaches extreme

levels, where platforms know everything about their workers, from their work patterns and fatigue levels to their risk-taking tendencies, while workers know almost nothing about how the system assesses them and how critical decisions are made by information-impermeable machines (Parker, 2021).

The phenomenon of alienation, once defined by critical thinkers in the context of factory labor, now finds a new and more sophisticated form in the digital work landscape. While in the classical industrial era, workers were alienated from the products of their labor due to their lack of control over what they produced, in the digital economy, this alienation operates at a deeper level, namely the deprivation of their autonomy of thought and decision-making. Digital workers lose control not only over the results of their work but also over the work process itself, as algorithms have taken over cognitive functions previously the exclusive domain of humans. They are no longer trusted to decide which route is most efficient, when is the best time to take a break, or even how to best serve a customer, because all these decisions have been codified into a series of algorithmic instructions that must be followed without resistance. This is what is meant by cognitive disintegration, a condition where technology robs not only human labor but also the creativity and critical thinking abilities that should be the essence of humanity (Stiegler, 2020).

This issue becomes even more complex when we realize that current employment regulations are completely unprepared for this new reality. The legal framework, which still relies on classic 20th-century categories, such as employment relationships based on orders, wages, and work, is completely incapable of addressing the managerial functions performed by apps. As a result, millions of platform workers find themselves in a legal gray area that offers no protection , working daily with high risk and uncertainty, while legally denied recognition as workers with employment rights. The world of work has fundamentally changed, but the legal language lags far behind, creating a protection vacuum that is systematically exploited by large platforms. Systematic means considering all components, considering their respective roles and how they interact with each other to fully achieve stated goals (Azmi et al., 2022). The Personal Data Protection Law has not yet fully addressed this issue, as it stems from a perspective that views subjects as passive data owners, rather than workers actively producing data through structured and measurable work (Cherry, 2022).

The gender dimension of this humanitarian crisis cannot be ignored, as seemingly neutral digital technologies actually reproduce and even reinforce existing inequalities in society. Female digital workers face a double burden that their male counterparts do not, particularly when it comes to balancing the demands of algorithmic work with the social reproductive responsibilities that are still traditionally assigned to women. Recent studies show that female platform workers experience significant income drops when they are pregnant or have a toddler, while male workers do not experience similar fluctuations. This suggests that algorithms do not operate in a vacuum, but rather operate and reinforce existing patriarchal structures, without ever being designed to understand or accommodate the biological and social realities that differentiate men's and women's work experiences. Failure to consider gender dimensions in the design of algorithmic systems means that technology not only reproduces injustice, but also makes it increasingly difficult to see and combat because it is hidden behind claims of machine objectivity (Webster, 2021).

The psychological distress experienced by digital workers is not simply an inevitable side effect of technological advancement, but a direct consequence of system design that deliberately creates conditions of uncertainty and competition. When workers never know when an order will arrive, how much they will earn today, or whether their performance score will be good enough to avoid automatic sanctions, what is created is a state of constant anxiety that erodes mental health. International surveys consistently show that more than half of gig workers report high levels of stress, chronic fatigue, and anxiety about sudden drops in income. These conditions not only undermine the quality of life of individuals but also create significant social costs that are ultimately borne by society as a whole. Developed countries like the UK and European Union countries have begun responding to this crisis with protective policies, such as the Platform Work Directive, which introduces the presumption of employment, or Spain's Riders Law, which mandates transparency of algorithms to unions. However, in Indonesia, we are moving in the opposite direction with policies that expand flexibility without strengthening the social safety net, creating a new class of vulnerable workers who are totally transparent to the system but whose rights are erased in a closed algorithm (Wood, 2021).

Michel Foucault's concept of the panopticon, introduced to explain how power operates in disciplinary societies, finds its most perfect realization in today's digital platforms. Digital workers never feel truly free from surveillance, as their every move is monitored, recorded, and evaluated by the system. GPS tracks where they are, ratings record how they are rated by customers, and algorithms calculate how long they stop for rest. What makes this situation more sophisticated than the classic panopticon is that this surveillance does not require the presence of a physical supervisor, as workers have internalized the feeling of being watched into their own consciousness. They know that any deviation from established standards will be recorded and can result in automatic sanctions, so they consciously discipline themselves. This is the most efficient and yet most dehumanizing form of power, as control is exercised without any human interaction at all, simply through the design of a digital architecture that subtly but firmly regulates behavior (Han, 2022).

Alienation in the context of digital work also takes on a deeper dimension when we consider how technology reifies humans, turning them into functions in an economic machine that cares only about efficiency. Workers are no longer seen as whole human beings with needs, feelings, and aspirations, but instead are reduced to a set of metrics: how many orders are completed, how many ratings are earned, how many hours are logged. Anything that cannot be measured and codified becomes invisible and meaningless in the evaluation system. Personal sacrifices, such as missing family time or working while sick, are never recorded as contributions, nor are the resulting fatigue and stress considered as costs to be accounted for. This is what is meant by dehumanization, the process by which humans lose their humanity through treatment and ultimately see themselves as mere objects or instruments. The crisis of humanity in the age of automation, then, is not simply a technical problem that can be addressed with minor system adjustments, but rather a philosophical and ethical question about what it means to be human in a world increasingly dominated by machine logic (Danaher, 2020).

**Rehumanizing Virtual Workspaces: Integrating Humanities Values into Technology Design and Implementation**

Facing a profound humanitarian crisis, a paradigm shift is needed in how we design and

implement technology in the workplace. Rehumanizing virtual workspaces is not simply an attempt to make technology friendlier or easier to use, but rather a fundamental project to restore humans to the center of attention in the development of sociotechnical systems. This approach requires us to move beyond thinking solely about efficiency and productivity to a richer understanding of what makes work meaningful and fulfilling for people. The humanities, with their long tradition of pondering questions about the meaning, value, and purpose of human life, offer invaluable conceptual resources for this project. Philosophy teaches us to ask about the conditions that enable human flourishing, ethics provides a framework for assessing whether our actions are right or wrong, aesthetics reminds us of the importance of experience and beauty, while hermeneutics emphasizes that understanding is always an interpretive process that can never be fully algorithmized. Integrating these perspectives into the technology management cycle means designing systems that are not only technically intelligent but also humanly wise (Pirson, 2020).

One concrete application of the humanistic approach in technology design is the development of so -called positive personas, a method for incorporating determinants of well-being into the system design process. Unlike conventional personas, which focus solely on user demographics and behavior, positive personas are explicitly designed to consider aspects such as autonomy, competence, connectedness, and meaning in the work experience. This approach is based on the understanding that technology should not only facilitate task completion, but should also support human flourishing, that is, the conditions under which individuals can develop their full potential and live meaningful lives. By using positive personas from the early design stages, system developers can proactively identify potential negative impacts of their designs on worker well-being and make adjustments before the system is implemented. This is an important step to prevent a recurrence of situations where technology designed with good intentions actually produces unintended dehumanizing consequences (Nurhas, 2020).

In the increasingly dominant post-pandemic context of remote and hybrid work, efforts to rehumanize virtual workspaces face particular challenges related to the blurring of boundaries between work and personal spheres. When the home, which should be a place of sanctuary and intimacy, suddenly doubles as an office , tensions arise that require the support of emotionally intelligent technology. Recent research in Human-Computer Interaction shows that remote workers develop a variety of boundary strategies, both spatial, temporal, and relational, to maintain a sense of normalcy and rebuild a sense of place in their work practices from home. Technology that supports rehumanization should be designed to enhance these strategies, not undermine them. For example, by providing features that help workers transition between their roles as workers and as family members, or by creating virtual spaces that allow for informal interaction and togetherness without intruding on personal privacy. The main goal is to help workers not only be productive, but also able to live a full and balanced life amidst work demands that increasingly permeate all aspects of life (Cho, 2024).

The concept of digital empathy is becoming increasingly important in discussions about the rehumanization of virtual workspaces. Digital empathy is not just the ability to understand data, but the capacity to respond to the psychological and emotional needs of workers in an increasingly complex and digitalized work environment. In practice, digital empathy can be realized through systems that identify signs of fatigue or excessive stress

before they significantly impact performance. For example, by monitoring employee work patterns to detect excessive hours or decreased productivity that indicate burnout, then signaling a more humane, data-driven intervention from the HR team . This approach enables more holistic HR management, where employee well-being is genuinely addressed while maintaining operational efficiency. However, implementing digital empathy also carries risks if not carefully designed, as it can easily turn into a more sophisticated form of surveillance if data about workers' emotional states is used for disciplinary or manipulative purposes. Therefore, ethical principles and transparency must be the foundation of any system that claims to implement digital empathy (Goleman, 2021).

Integrating humanities values into technology design also means paying attention to the aesthetic aspects of experience, not just technical functionality. A well-designed virtual workspace should not only enable efficient task completion, but should also create a pleasant, meaningful, and human experience. This includes considerations such as eye-strain-free interface quality, personalization flexibility that allows workers to express their identities, and interaction design that supports natural conversations rather than just information transactions. Aesthetics in this context is not merely a decoration or an added luxury, but a fundamental element that influences how workers experience and interpret their work. A beautiful and aesthetically pleasing space can improve mood, stimulate creativity, and strengthen emotional ties to work, while an ugly and stiff space can lead to mental fatigue and alienation. The humanistic approach reminds us that humans are not only rational beings who pursue efficiency, but also aesthetic beings who respond to beauty and harmony (McCarthy, 2020).

Another important aspect of rehumanizing virtual workspaces is recognizing the importance of rituals and routines in building meaning and identity. Research in organizational psychology shows that small rituals, such as casual chats before meetings, celebrating shared accomplishments, or simply sharing stories about the weekend, play a crucial role in building team cohesion and a sense of community. In digital work environments, these rituals often disappear as interactions become reduced to highly structured, task-oriented information exchanges. Technology can be designed to revive this ritualistic dimension by providing virtual spaces for informal interactions, features that support celebration and recognition, or even by creating new digital rituals tailored to the remote work context. What distinguishes routines from rituals is that rituals carry symbolic meaning and affective commitment, conveying messages about shared identity and values. Technologies that support rehumanization must be able to accommodate and strengthen this symbolic dimension, not just its functional aspects (Allen, 2021).

The principle of algorithmic fairness has become an integral component of efforts to rehumanize virtual workplaces. As artificial intelligence is increasingly used in HR processes such as recruitment, performance appraisals, and promotions, questions of fairness and bias become crucial. Algorithms are not automatically objective simply because they are run by machines; they are trained on data generated by human practices rife with bias and prejudice. Without deliberate intervention, AI systems tend to reproduce and even reinforce existing inequalities. Therefore, it is crucial for companies to conduct regular algorithm audits, involve multiple disciplines in the programming and oversight process, and provide clear information to candidates or employees about how their data is used in the decision-making process. Algorithmic fairness is not merely a technical issue that can be resolved by adjusting parameters, but an ethical and political issue that

demands an organizational commitment to the values of fairness and inclusivity (Raso, 2022).

The concept of digital twins for employees, which has been gaining ground in recent years, offers great potential for personalizing the work experience but also carries the risk of dehumanization if not implemented wisely. A digital twin is a virtual representation that records a person's skills, experience, career path, and development within an organization. With integrated and comprehensive data, HR managers can have a more complete picture of employee potential and design more personalized and precise career development. This technology can also help in planning promotions and placements based on more accurate data, as well as providing training recommendations that are in line with employee profiles and aspirations. However, digital twins can also be a very intrusive surveillance tool if used to predict the risk of employees leaving the company or to identify problem employees without a human perspective. Therefore, the implementation of digital twins must be based on the principles of transparency, consent, and worker control over their own data, and must be understood as a tool to empower, not control (Schmidt, 2023).

**Empathetic Technology Management Model: Towards a Balance between Productivity and Well-Being**

Synthesizing a critical analysis of the humanitarian crisis with a solution-oriented exploration of rehumanization, we arrive at the need to formulate a radically new model of technology management: an empathetic technology management model. This model does not propose a rejection of technology or a return to a romanticized past, but rather a radical transformation in how we understand and practice management in the digital age. At its core, empathetic technology management is an approach that places human well-being as the primary goal, with efficiency and productivity understood as means to that end, not the other way around. This means that in every decision about the design, implementation, and evaluation of technology, the first question to ask is not "how much efficiency can we improve?" but rather "how will this technology affect the lives of the people who use it?" This shift in fundamental questions has far-reaching consequences for all aspects of management, from the metrics used, to the incentive structures, to the leadership styles developed (Pirson, 2020).

In an empathetic technology management model, efficiency metrics are not abandoned entirely , but rather reconstructed and supplemented with equally important humanistic indicators. Beyond measuring hourly output or the number of transactions processed, organizations also need to measure workers' psychological well-being, the quality of interpersonal relationships within teams , their perceived level of autonomy, or the meaning found in their work. This isn't simply adding employee satisfaction surveys as a supplement, but rather integrating these indicators into performance appraisal systems and strategic decision-making. For example, in evaluating the success of a new technology implementation, companies look not only at productivity gains but also at its impact on workers' stress levels, their ability to balance work and personal life, or changes in the quality of team interactions . In this way , well-being is no longer a secondary concern handled solely by the HR department but becomes a central concern in day-to-day operational management (Diener, 2020).

The role of the leader in the empathetic technology management model is undergoing a

fundamental transformation. Leaders are no longer understood primarily as strategic decision-makers or resource controllers, but rather as empathetic facilitators who create the conditions for the development of human relationships within organizations. This means leaders must possess sufficient digital literacy to understand how technology shapes the workplace experience, as well as a high level of emotional intelligence to sense and respond to the psychological needs of their teams . Leaders in this model are responsible for ensuring that technology is used as a tool to empower people, not control them. They must be willing to challenge the assumptions underlying system design, advocate for workers' interests in discussions about implementing new technologies, and create a culture where well-being is valued equally with productivity. In practice, this means leaders must actively engage in dialogue with teams about how technology impacts their work experience and be willing to make adjustments when negative impacts are identified (Orel, 2025).

Humanistic digital literacy is a key competency that must be developed at all levels of the organization. Unlike conventional digital literacy, which focuses solely on technical skills in using software, humanistic digital literacy encompasses a critical understanding of how technology shapes social relations, impacts psychological well-being, and distributes power within organizations. Workers with humanistic digital literacy are not only able to use technology but also able to question why technology is designed a certain way , who benefits and is disadvantaged by that design, and how they can use technology more autonomously and creatively. Developing humanistic digital literacy should be an integral part of HR training and development programs, not simply an optional extra. This includes education about workers' digital rights, an understanding of algorithmic bias, skills to negotiate with automated systems, and the ability to build authentic human relationships in an increasingly digitalized environment (Prastacos, 2025).

An empathetic technology management model also requires a transformation in HR policies and practices. Recruitment should no longer just look for candidates with the best technical skills, but also those with the capacity for empathy, collaboration, and ethical awareness. Compensation and reward systems should be designed to encourage behavior that supports collective well-being, not just destructive individual competition. Career development programs must address workers' personal aspirations and needs, not just the needs of the organization. Most importantly, mechanisms for voicing concerns and reporting issues must be available and effective, so workers have an outlet to criticize aspects of technology that disadvantage them without fear of retaliation. This transformation is not easy and requires a long-term commitment, but it is a prerequisite for creating a truly humane digital workplace (Pettalongi, 2025).

It is important to note that an empathetic technology management model benefits not only workers, but also the organization as a whole in the long run. Research in organizational psychology and management consistently shows that psychologically well-being employees are more creative, more collaborative, and more productive in the long run. They also tend to be more loyal and less likely to leave, reducing recruitment and training costs. Organizations known for treating their employees well are also better able to attract top talent in a competitive labor market. In other words , investing in employee well-being is not a sacrifice of efficiency, but rather a strategy for achieving sustainable competitive advantage. However, it's important to emphasize that this argument shouldn't be used to instrumentalize employee well-being, treating it merely as a means to higher productivity.

In an empathetic technology management model, worker well-being is a valuable goal in itself, and if there must sometimes be a trade-off with short-term productivity, then that trade-off must be accepted as a consequence of a commitment to human values (Islamuddin, 2025).

Implementing an empathetic technology management model on a large scale requires support from a wide range of stakeholders, including governments, industry associations, trade unions, and educational institutions. The government needs to design regulations that not only protect workers from exploitation, but also actively encourage humane management practices. This could include fiscal incentives for companies that implement principles of algorithmic transparency, or requirements to involve workers in the design and evaluation of new technological systems. Industry associations can develop standards and certifications for ethical technology management and share best practices among their members. Unions need to broaden their focus from traditional issues like wages and hours to new ones like the right to an explanation for algorithmic decisions or collective control over worker-generated data. Educational institutions, particularly business schools and management programs, should revise their curricula to incorporate humanities and ethical perspectives into management education, so that their graduates are not only technically skilled but also morally prudent (Purnomo, 2024).

At a more fundamental level, an empathetic model of technology management demands that we rethink the relationship between humans and technology. Rather than viewing technology as an autonomous force that we must embrace or resist, we need to see it as a product of human choices that we can redesign according to our values. Technology is never neutral; it always carries with it assumptions about what is important, how people should behave, and how power should be distributed. The question is not whether technology will have an effect on society, but what kind of effect we want and how we can design technology to achieve that effect. By placing human well-being as the primary goal, and by using conceptual resources from the humanities to guide the design and implementation of technology, we can create digital work environments that are not only efficient, but also equitable, meaningful, and humane. This is the essence of reconstructing technology management through a humanities approach: a vision of the future of work where technology serves people, not the other way around (Floridi, 2020).

In closing, it's important to emphasize that the transition to an empathetic technology management model is neither easy nor quick. It requires changes in the power structures, thinking habits, and daily practices that are deeply entrenched in modern organizations. There will be resistance from those who benefit from the status quo, and there will be temptations to take shortcuts that only make cosmetic changes without fundamental transformation. However, the humanitarian crisis we face today, with millions of workers experiencing chronic stress, burnout, and alienation, suggests that we have no choice but to embark on this journey. The alternative is a digital society polarized between a handful of platform owners accumulating immense wealth and millions of workers living in permanent uncertainty, alienated from the fruits of their own labor and from their own humanity. The choice is ours, and the time to choose has come (Zuboff, 2020).

## CONCLUSION

This research concludes that the era of automation has given rise to a crisis of humanity in

the digital workplace, where technology has transformed from a tool into a controlling structure that dehumanizes workers through algorithmic pressure and systematic alienation. As algorithms take over managerial functions, workers face systems that simply read metrics without understanding the complexity of personal situations, creating algorithmic violence where critical decisions are made by machines without transparency and a mechanism for redress. Alienation in the digital age runs deeper than in the classical industrial era, robbing not only control over work output but also autonomy of thought through cognitive disintegration, while existing labor regulations are unprepared to address this new reality. In response, this study formulates an empathetic technology management model that places human well-being as the primary goal, with efficiency as a means. This model integrates humanistic values into the entire technology management cycle, employing positive personas in system design, applying principles of digital empathy and algorithmic transparency, and employing dual metrics that measure productivity and psychological well-being. This model also transforms the role of leaders into empathetic facilitators and develops humanistic digital literacy across all levels of the organization.

The implementation of this research results was realized through integrated steps at various levels. At the organizational level, a comprehensive technology audit was conducted with a multidisciplinary team to evaluate algorithm transparency, complaint mechanisms, and worker access to data. The system was then redesigned with positive personas principles that incorporate determinants of well-being such as autonomy, competence, connectedness, and meaning. At the HR policy level, a fundamental revision was made to the recruitment system by adding empathy and ethical awareness criteria, reconstructing performance assessments with humanistic indicators, designing a compensation system that encourages collaboration, and career development that takes into account personal aspirations through an ethical and transparent digital twin approach. At the leadership level, a training program was developed to equip leaders with humanistic digital literacy and emotional intelligence, encompassing an understanding of the impact of technology on well-being, reflective dialogue skills, the ability to detect signs of burnout, and the authority to conduct humane interventions. At the worker level, a sustainable humanistic digital literacy program is being developed that teaches a critical understanding of digital rights, the identification of algorithmic bias, negotiation skills with automated systems, and the ability to build authentic human relationships. At the public policy level, advocacy is being conducted for labor regulation reform that regulates platform-based employment relationships with the presumption of employment, requires algorithmic transparency, provides an effective complaint mechanism, and provides fiscal incentives for companies that implement empathetic technology management principles. At the broader ecosystem level, collaborations are being built between stakeholders: industry associations are developing ethical technology management standards, labor unions are expanding their focus on algorithmic rights of explanation and collective data control, educational institutions are revising curricula with a humanities perspective, and the research community is developing participatory design methodologies that involve workers as co-designers.

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