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Digital Urban Futures in the Era of New Humanism: From the Contemporary to the Hyper-Connected City

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The last decade has been a pivotal time in human society's evolution, driven by the rapid growth of digital technologies. The Internet and the World Wide Web, in particular, have redefined how individuals live, work, communicate and interact, embedding technology deeply into everyday life. In particular, urban environments are increasingly shaped by pervasive connectivity, sensor networks, augmented reality and algorithmic infrastructures, which are transforming cities into hybrid socio-technical ecosystems. While these innovations offer immense opportunities, they also generate new forms of dependency and social isolation, as virtual spaces mediate daily experience and influence collective urban behaviour. This article reflects on the technological, social and spatial transformations of contemporary cities, focusing on emerging trends such as augmented humans, biochips, the AR Cloud and advanced artificial intelligence that are set to change how people inhabit and experience urban spaces. Adopting a new humanist perspective, the article argues for the conscious and ethical integration of digital tools in urban environments, where technological infrastructures can enhance human creativity, relationality, and inclusivity. Rather than passively succumbing to technological determinism, cities can be designed and inhabited in ways that amplify human agency, strengthen social bonds and improve quality of life. This ensures that future urban landscapes are efficient, intelligent and deeply attuned to human needs, values and experiences.

Keywords: *New Humanism, Urban Innovation, Digital Transformation, Augmented Reality, Human-Centered Technology*

Introduction

Over the past decade, digital technologies have profoundly transformed the ways in which societies produce, experience, and govern space. The proliferation of artificial intelligence, pervasive connectivity, data infrastructures, and immersive environments has reconfigured urban systems, giving rise to increasingly hybrid socio-technical environments in which physical and digital dimensions are deeply intertwined (Bibri, 2021).

Cities are no longer merely material entities but complex informational ecosystems shaped by continuous interactions between human actors, technological platforms, and data flows.

While these transformations open new possibilities for innovation, efficiency, and participation, they also generate critical challenges. The growing pervasiveness of digital technologies has intensified forms of technological dependency, altered

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social relations, and concentrated economic and decision-making power in the hands of a limited number of global actors (Fuchs, 2022). As a result, contemporary urban environments are increasingly characterized by tensions between connectivity and control, empowerment and alienation, innovation and inequality.

Within this context, the concept of digital humanism has emerged as a normative framework aimed at restoring human agency, ethical responsibility, and social values within technologically mediated environments (Bertolaso et al., 2022). However, despite its growing relevance in philosophical and technological debates, digital humanism remains insufficiently operationalized within urban theory and planning practice. In particular, there is a lack of structured frameworks capable of translating its principles into analytical and planning tools for understanding and governing urban transformation.

This paper addresses this gap by developing a conceptual framework that integrates digital humanism into the analysis of contemporary urban transformations. The study is guided by the following research questions:

RQ1: How do digital technologies reshape socio-spatial relations in contemporary cities?
RQ2: What are the key dimensions of a human-centered digital urban transformation?
RQ3: How can urban planning operationalize digital humanism in governance and design?

Adopting an interdisciplinary approach that bridges sociology, philosophy of technology, and urban planning, the paper proposes an analytical framework structured around four interrelated dimensions—technological, social, spatial, and ethical. Through the interpretation of emblematic cases and emerging urban trends, the study argues that cities should not passively adapt to technological change but actively govern it through human-centered approaches that integrate ethical, relational, and spatial considerations.

Theoretical Background

The last decade has been one of the most significant periods in the evolution of the planet, marking a turning point. Throughout history, technological innovations have marked moments of profound societal, economic, health-related, cultural and environmental transformation: from the invention of the printing press, which spread knowledge and information, to steam engines, which automated industrial processes, to electricity and the telephone, which improved quality of life through rapid communication systems.

Many discoveries have shaped modernity, but one marked a point of no return: the advent of the internet and the birth of the World Wide Web. This epoch-making event has radically redefined the way we live, work, learn, communicate and perceive reality. The prospect of creating a global, accessible and dynamic collective memory has not only altered our relationship with knowledge, but also how we envision and plan for the future.

In this scenario, the concept of a new digital humanism has emerged, focusing on how human beings can remain central to increasingly complex technological ecosystems. This perspective encourages us to view innovations as extensions of

our perceptive, cognitive, and creative abilities, rather than as mere substitutes for human actions (Ghezzi, 2023). More broadly, digital humanism can be understood as a response to the growing dominance of digital infrastructures, aiming to embed ethical values, human agency, and social responsibility into technological development (Bertolaso et al., 2022; Floridi, 2019; Coeckelbergh, 2020).

Recent developments are moving in this direction, including immersive environments that expand the sensory experience, augmented reality systems that superimpose layers of information onto physical spaces and generative artificial intelligence that transforms the concept of producing images, texts and design models. These technologies change not only the modes of representation, but also our perception of time, space and identity, helping to forge new connections between individuals and their environments (Díaz de la Cruz et al., 2025). In this sense, contemporary digital environments can be interpreted as extensions of what McLuhan (1964) described as media shaping human perception, now intensified through algorithmic mediation and data-driven systems (Kitchin, 2014).

While these devices open up unprecedented possibilities for understanding and acting on the contemporary world, they have also become so ingrained in everyday life that we have become dependent on their constant presence. In an interconnected and hyper-mediated society, a network blackout would be the equivalent of an 'atomic bomb', causing the collapse of the main communication, economic and social infrastructures. This increasing dependency reflects broader dynamics of platform capitalism (Srnicek, 2017), in which digital infrastructures become essential socio-economic systems shaping everyday life.

The reward mechanism activated by social networks, fuelled by algorithms that regulate visibility and interactions, has progressively transcended informational needs, generating addictive behaviours that isolate individuals in parallel universes, existing somewhere between reality and simulation. These dynamics are closely linked to what has been described as surveillance capitalism (Zuboff, 2019), in which user behaviour is continuously monitored, predicted, and monetized.

The advent of immersive environments, augmented interfaces and generative AI intensifies this process further, as the distinction between the real and the virtual becomes increasingly blurred (Fuchs, 2022). Individuals find themselves immersed in an information continuum, where their perception of the world is constantly filtered, amplified, or reconstructed by intelligent devices. This condition aligns with the concept of hybrid space, where physical and digital environments coexist and interact dynamically (de Souza e Silva, 2006), reshaping spatial experience and social interaction.

In this context, there is an urgent need to redefine the balance and reaffirm the centrality of human beings in interpretation, decision-making and representation processes (Bertolaso et al., 2022).

Georg Simmel, a German sociologist and philosopher, anticipated what he termed the 'tragedy of modernity' at the beginning of the 20th century. He argued that modern society possesses knowledge that exceeds the capabilities of the individual. This cognitive excess, derived from the accumulation of knowledge and the complexity of social structures, prevents individuals from fully understanding and managing what they themselves have produced, ultimately overwhelming them.

Considering the advent of digital technologies as one of the greatest expressions of human creation makes Simmel's thinking even more pertinent, as it reflects the dynamics that characterise the new millennium. As McLuhan reminds us, the media (*medium*)[1] do not merely transmit content; they also profoundly shape perceptions, relationships and forms of everyday life.

'Metropolises are the true stages of this culture that exceeds and overwhelms every personal element. Here, in buildings and places of learning, in the miracles and comforts of technology that eliminate distances […] there is a crystallised, impersonal fullness of spirit that personality cannot compete with' (Simmel, 1955).

In contemporary metropolises, which are understood as privileged spaces reflecting modern society and globalised culture, a condition arises where technological acceleration produces an impersonal dimension — a kind of 'crystallised spirit' — that struggles to reconcile itself with the individual. The density of information, the speed of interactions, and the constant mediation of devices create an environment that Simmel would recognise as the realisation of his prediction. Today, these dynamics are further intensified by data-driven urbanism, in which cities operate through continuous data collection and algorithmic processing (Kitchin, 2017; Batty, 2018).

However, at the heart of his reflections remains the role of relationships: for Simmel, society exists only through forms of interaction between individuals bound by ties of reciprocity that generate stable social structures over time. 'Sociation' represents precisely this interactive fabric: the process by which interpersonal relationships consolidate into recognisable practices — from daily routines to significant gestures (Simmel, 1950).

In the digital age, the concept of 'sociation' is undergoing a radical transformation. Millennials and subsequent generations live in an ecosystem in which the space-time of relationships is defined by the digital network rather than the architectural context. Interaction no longer requires physical co-presence; instead, it is distributed through flows, notifications, platforms and virtual environments. Bonds are formed, strengthened and dissolved through interconnected systems that enable sociality to endure despite the absence of physical contact. The virtual community thus becomes an extension — and sometimes a replacement — of the physical community, profoundly reshaping the processes of belonging, recognition and participation, while also contributing to new forms of digital inequality and exclusion (van Dijk, 2020).

The Hybridization of Urban Life and the Rise of Digital Power: Implications for Human-Centered Planning

As urban life transforms, the concept of 'home' loses its physical significance and increasingly becomes a hybrid space similar to cyberspace: a temporary, customisable and continuously accessible place where people go for informational, relational, work-related or recreational purposes. Living takes on a networked form,

1. Marshall McLuhan's thinking is famously summarised by the phrase “the medium is the message”, by which he means to emphasise that the most significant effect of any medium lies not so much in the content it conveys, but in the nature of the medium itself and the way it changes perceptions, interactions and the organisation of society.

intertwining physical and digital environments and giving rise to new ways of perceiving proximity, distance and presence.

Users of the hyper-connected society belong to a sharing-based, collective-participation generation that is, paradoxically, more exposed to the influence of virtual dynamics than real ones. Here, individual identity is constructed through continuous relationships with platforms, algorithms and user-generated content, making the need for a new humanism that restores human experience to the centre of a technological ecosystem which reduces individuals to nodes in an information network even more urgent.

This humanistic perspective invites us to question how human beings can remain the architects of their own destiny, reaffirming their capacity for choice, interpretation and responsibility. In a world where sociality expands through virtual spaces and algorithmic networks, new humanism offers a critical lens through which to reconsider the value of relationships, the meaning of experience, and the importance of maintaining an empathic and reflective dimension in the construction of contemporary society.

It is no coincidence that, by 2025, most of the companies with the highest market capitalisation globally will belong to the technology and digital sectors. According to the latest rankings, the top ten companies by market capitalisation include Nvidia, Microsoft, Apple, Alphabet (Google), Amazon, Meta Platforms, Broadcom and TSMC.

This data confirms that much of the global economic and decision-making power — and therefore the levers of social, cultural and urban transformation — is now in the hands of technology and digital companies.

For comparison, while there were no (or very few) 'digital' companies in the top global positions in 1995, and only a few scattered examples from the IT or technology sector in the top ten in 2010, today the situation has changed radically. The transition from an industrial or extractive economy to a knowledge and data economy is a profound transformation of the social and urban fabric. Its effects are not limited to the labour market or economic dynamics; they also affect the very form of space, housing and collective living.

The last decade has undoubtedly seen a surge in the use of digital technology in everyday life. Twenty million times a day, in every corner of the world, someone listens to an unfamiliar song and asks their smartphone to identify it. Meanwhile, millions of people continue to rely on smartphones, streaming platforms, cloud services, virtual environments, artificial intelligence applications and social and communication tools on a daily basis. This digital pervasiveness profoundly influences our perception of space and time, redefining not only how we live, work and socialise, but also how we think about cities, landscapes and communities.

In such a context, urban and territorial planning cannot ignore the increasing overlap between physical and digital spaces. Contemporary cities are evolving into interconnected systems where physical infrastructure interacts with computer networks, digital services, big data, and immersive interfaces (Bibri, 2021). This transformation requires critical reflection on the value of space, collective identity, spatial justice, and citizen identification — issues that align with a new humanism which aims to restore the centrality and dignity of the human dimension despite the

pressure exerted by global technological structures.

Starting from this awareness, it is urgent that we ask ourselves: what relationships do we establish with the economic and technological entities that dominate the global scene? To what extent does the dominance of digital capital affect communities' real capacity to plan, decide and inhabit? How can we convert the power of these technologies into a project for the city and territory that focuses on human beings, memory, identity and the environment?

While it is not possible to provide a single, comprehensive answer, it is important to emphasise that the current dominance of large digital companies represents more than just a change in economic scale; it is a paradigm shift. It is in this context that the idea of a new humanism — based on awareness, responsibility, sustainability and participation — takes on its full meaning. Only by critically examining the geography of global technological power can we begin to consider alternative models of urban and territorial governance that can restore individuals' and communities' leading role.

To systematize these transformations and operationalize the proposed analytical perspective, Table 1 presents the four key dimensions of the hybrid city, outlining their core components, implications, and relevance for urban planning.

Table 1. *Analytical Dimensions of the Hybrid City within the Digital Humanism Framework. The Table Synthesizes the Technological, Social, Spatial, and Ethical Dimensions, Outlining their Core Components, Urban Implications, associated Risks, and Relevance for Urban Planning*

Dimension	Core Components	Urban Implications	Key Risks	Planning Relevance
Technological Dimension	Artificial intelligence; sensor networks; data infrastructures; AR/VR systems	Transformation of cities into data-driven and responsive environments; emergence of urban interfaces	Technological dependency; opacity of algorithms; concentration of digital power	Integration of digital infrastructures into planning processes; governance of data and platforms
Social Dimension	Identity construction; social interaction; digital communities; participation	Redefinition of social relations beyond physical proximity; emergence of networked forms of belonging	Social fragmentation; digital addiction; loss of direct interaction	Promotion of inclusive and participatory urban environments; strengthening social cohesion
Spatial Dimension	Hybrid spaces; augmented environments; digital-physical interfaces	Overlapping of physical and virtual spaces; transformation of perception, proximity, and urban experience	Blurring of reality boundaries; cognitive overload; spatial disorientation	Design of hybrid urban environments; integration of digital layers into spatial planning
Ethical Dimension	Governance; power relations; data justice; equity	Reconfiguration of decision-making processes; influence of global tech actors on urban systems	Surveillance capitalism; inequality; lack of transparency	Development of ethical frameworks for urban governance; regulation of digital infrastructures

Figure 1. *The Hybrid City for AI. This Illustration was produced using an AI Image Generation Model, with Prompts derived from the Descriptions of the Hybrid-connected Urban Environment in the Text*

The City as Interface: From Augmented Urban Environments to Embodied Hybridization

The proliferation of Wi-Fi hotspots in cities, as demonstrated by projects such as LinkNYC, which involves the widespread installation of mini-towers in public spaces to ensure ultra-fast connectivity, produces a new form of environmental intimacy. This is a sense of widespread proximity that is no longer dependent on physical presence, but on continuous connection. The city thus becomes an interface: a sensitive organism in which access to the network becomes intertwined with spatial experience, thereby transforming the way individuals perceive and inhabit places.

This condition anticipates a future in which the distinction between the digital and the physical becomes increasingly blurred. It is therefore fitting that the City of Tomorrow is described as a hybrid environment in which a *triumph of atoms and bits* (Claudel & Ratti, 2016) is achieved: an augmented architecture that integrates material infrastructure, data, sensors, and overlapping layers of information.

This 'augmented urban reality' (Carta, 2017) is not merely a technological evolution, but a new perceptual and cultural paradigm in which the city is configured as a cognitive ecosystem: a place where people not only move, but also learn, interact, generate and interpret information in real time.

This continuous presence reshapes the way we perceive, understand and experience space, turning it into an active interface between people, digital networks and the urban environment.

Alongside this process of tacit, everyday integration, individuals are emerging who demonstrate radical ways in which technology can merge with the human body, redefining the boundaries of sensory experience. Neil Harbisson, recognised in 2004 as the world's first legally registered cyborg thanks to the implantation of an *Eyeborg antenna*, is the archetypal example of this evolution.

His ability to 'hear' colours through electromagnetic frequencies converted into bone vibrations demonstrates an expansion of human sensory perception and sparks critical debate about the future of body-machine hybridisation. Through his public activities and the Cyborg Foundation, which he founded with Moon Ribas, he raises profound questions about the relationship between biological nature and augmented technology, the redefinition of subjectivity, and the rights of 'posthumans'.

Other figures contribute to this discussion. Moon Ribas, for example, is a performer and researcher who has developed body-implanted seismic sensors that enable her to perceive the Earth's tectonic movements in real time and transform them into artistic performances: an emblematic example of how technology can extend human sensitivity beyond the realm of immediate experience.

Stelarc, an Australian artist renowned for projects such as “Oreille sur le bras” and telepresence and bodily robotics, has argued since the 1980s that “the body is obsolete”. This anticipates many contemporary reflections on the fusion of humans and machines, as well as the possibility of redesigning the body as an evolutionary platform.

These extreme cases reveal a crucial conceptual shift: rather than being seen as repair devices that compensate for missing functions, prostheses are now regarded as tools that can amplify and transform human faculties. These technologies allow us to see beyond the visible spectrum, hear imperceptible data, understand complex configurations of space and information, and navigate hybrid and stratified environments that intertwine matter and data (Adorni & Bellini, 2025). The individual thus becomes an enhanced node: a being in constant sensory, cognitive, and relational expansion.

Figure 2. *The City of Tomorrow for AI. This illustration was produced using an AI Image Generation Model, with prompts derived from the Descriptions of the Future-digital Urban Environment in the Text*

Digital Humanism in the Age of Hyper-Reality

From this perspective, the new digital humanism does not reject these transformations, but rather calls for them to be governed in an ethical and responsible manner that prioritises collective well-being, so that the expansion of capabilities does not lead to a new form of dependence, alienation or inequality.

This framework also encompasses the visionary work of Japanese designer Keiichi Matsuda, creator of the *Augmented (Hyper) Reality* project (2016)[2], which depicts a society where the real and virtual worlds converge to form an immersive

2. Hyper-Reality, 2016 by Keiichi Matsuda. http://km.cx/projects/hyper-reality

and highly informed continuum. The six-minute short film offers a satirical and provocative glimpse into a world where the digital realm is no longer confined to 'behind the screen', but has become an omnipresent aspect of everyday life. Set in Medellín, Colombia, and shot entirely from the protagonist's point of view, the film depicts a state of permanent existential 'googlement': a simple trip to the supermarket is filled with digital displays, sounds, notifications, emails, chat windows, flashing advertisements, animated fruit and Tamagotchis all demanding constant attention.

The effect is a *sensory overload* comparable to, but more intense than, the feeling one gets when entering an arcade for the first time: a simultaneous bombardment of psychedelic visuals and high-pitched sounds that overwhelms the senses, turning every movement into an interaction and every glance into a command. In this depiction, the city of the future appears 'saturated' with media, notifications, layers of information, holograms and interfaces occupying every inch of perceptual space. Every surface becomes a display, every gesture an interaction and every space a hybrid container for work, leisure, consumption and learning. The need for an external screen disappears: the world itself becomes the screen and the information.

Matsuda defines this condition as 'hyper-reality', reflecting the idea – also theorised by social media theorist Nathan Jurgenson – that the 'virtual self' and the 'real self' are no longer clearly divided: both coexist in the same identity, influencing each other in a continuous flow of data, images, choices and representations. From this perspective, individuals become hybrid beings, nodes between platforms, networks and digital environments, as well as corporeal subjects situated in space. A similar idea emerges in the macroscopic and speculative project *Planet City* (2020)[3] by filmmaker and designer Liam Young. In this provocative vision, the entire world population is concentrated in a single, hyper-dense urban megastructure where daily life is punctuated by immersive technologies, autonomous infrastructures and pervasive information systems.

Planet City is not a model to be realised; rather, it is a critical lens through which to question the relationship between extreme urbanisation, ecosystems, and digital devices. In Young's imagined city, every gesture is interfaced with intelligent systems, every space is performative and every activity is mediated by constant environmental data, information flows and augmented scenarios. The urban environment and the digital dimension thus merge to create a total environment that takes the hybrid condition of the contemporary individual, as anticipated by Matsuda, to the extreme: a being that is simultaneously immersed in physical space and inscribed in an information continuum that guides perceptions, decisions and ways of living.

[3]Planet City, 2020 by Liam Young. https://liamyoung.org/projects/planet-city

Table 2. *Comparative Synthesis of the selected Case Studies across the Four Dimensions of the Hybrid City, Highlighting their Implications for Digital Humanism*

Case Study	Technological Dimension	Social Dimension	Spatial Dimension	Ethical Dimension	Key Insight for Digital Humanism
LinkNYC	Urban digital infrastructure; public Wi-Fi networks; data collection systems	Enhanced connectivity and access; mediated forms of interaction in public space	Public space as interface; integration of physical infrastructure and digital services	Data governance issues; surveillance concerns; corporate control of infrastructure	Digital inclusion must be balanced with data sovereignty and public governance
Hyper-Reality (Matsuda, 2016)	Augmented reality layers; immersive interfaces; real-time data overlays	Fragmented attention; hyper-mediated social interaction; cognitive saturation	Fully augmented urban environment; dissolution of boundaries between real and virtual	Algorithmic influence on perception; manipulation of attention; loss of autonomy	Human-centered design must prevent cognitive overload and preserve agency
Planet City (Young, 2020)	Fully integrated technological megasystem; automation; data-driven urban management	Collective living model; extreme density; redefinition of community	Hyper-dense, single global city; total integration of digital and physical systems	Centralization of power; governance challenges; ethical implications of control	Technological efficiency must be critically assessed against social and ethical sustainability
Cyborg Artists (Harbisson, Ribas, Stelarc)	Body-integrated technologies; sensory augmentation devices	Redefinition of identity and embodiment; hybrid human-machine interaction	Blurring of bodily and spatial boundaries; embodied interaction with data	Ethical questions on human enhancement; post-human rights; access inequality	The human body becomes a site of urban-technological integration requiring new ethical frameworks

The debate on new humanism fits precisely within this tension between technological immersion and human roots. It aims to reinterpret the technical dimension as an integral part of a renewed experience of the world, in which technology can support critical thinking, creativity, and the ability to attribute meaning to places, rather than replacing them (Bar Eli, 2025). This paradigm invites us to reconsider the relationship between individuals and technology, viewing it not as simple technical adoption, but as a fragile yet necessary balance between empowerment and responsibility; between openness to the digital world, and the protection of sensitive ethical and cultural dimensions of human experience (Morozzo della Rocca et al., 2022). The augmented city, prosthetic tools, and immersive environments represent technical challenges and critical places in which to explore the value of humanity in the age of global hybridisation.

The urban planning crisis in the contemporary world has accelerated these cyborg artists' visions, i.e. those 'digital natives' who experience the digital dimension as an integral part of their own being and the space with which they interact within a natural open-source community, rather than as a dystopian future. They embody a new concept of urbanity in which the digital is not just a tool but a medium for participation, creativity, and the transformation of urban spaces.

The transition from the analogue to the virtual world has triggered an unparalleled mechanism of addiction (Floridi, 2014). Every prediction about the future envisages a society that is increasingly addicted to technology. Most contemporary films depict catastrophic scenarios in which extreme technological advancement leads to the collapse or enslavement of humanity, which is unable to cope with such radical changes. Even recent works, such as some of the most award-winning British television series, emphasise these risks by criticising new technologies for their potential to destabilise social relations, self-perception, and urban structures.

Figure 3. *The Hyper-Augmented City for AI. This Illustration was produced using an AI Image Generation Model, with Prompts derived from the Descriptions of the Hyper-augmented Urban Environment in the Text*

Shaping Future Cities:
Digital Humanism as a Framework for Urban Governance

In this revolutionary context, where our perception of space, context and reality itself has changed radically, strong scepticism about the future is understandable. In this future, addiction to digital technologies risks altering the social fabric, human feelings and our ability to build meaningful relationships profoundly (Bisiani, 2021). However, new humanism offers an alternative interpretation: if digital technology is used as a tool for creativity, inclusion and collective participation, it can help redefine humanity's centrality in urban and social spaces, transforming technological dependence into an opportunity for cultural and civic empowerment.

The internet influences our daily personal and professional choices, and everything we share spreads and becomes universal to some extent, reducing our individual sense of security while offering new forms of sharing and collaboration. Therefore, rather than rejecting technology, we must learn to govern it consciously, directing digital progress towards practices that nurture space, relationships and a sense of belonging. This approach is deeply rooted in the vision of new humanism, where technology and humanity converge to redefine the future of cities and communities.

Having reached this point of no return, we can only speculate about the limits that technology will reach in the next decade. Strategic consulting firm Gartner attempts to answer this question by publishing its annual 'Emerging Technology Trends' report. The most recent edition, which focuses on trends expected to reach their full potential within the next five to ten years, was published in 2025. These include innovations in sensor technology and mobility; concepts such as the 'augmented human'; biochips; the AR Cloud, which promises to offer a true 'digital copy' of the real world; post-classical computing and communication; digital ecosystems; human genome editing; and advanced analytics and artificial intelligence capabilities, including adaptive machine learning, edge AI, edge analytics, and 'transfer learning' algorithms.

As futurologist Gerd Leonhard observes: 'We are at a crucial juncture in technological evolution. Change will become exponential, inevitable and irreversible. It is our last chance to decide to what extent we will allow technology to shape our lives' (Leonhard, 2019). This statement highlights a central tension of our age: while innovations promise to radically transform society, they also raise profound questions about the role of human beings, freedom of choice, and our ability to govern the technological processes that will shape our future.

The concept of new humanism provides a valuable interpretative framework: rather than opposing or passively accepting technology, we should develop a conscious and responsible approach in which technological development serves creativity, social inclusion, and the quality of urban life. This involves redefining the role of humans in space and society and enhancing the ethical, cultural and relational aspects of digital innovations (Paris, 2021). The internet, advanced sensor technology, artificial intelligence and augmented environments can be used to empower individuals and give them more choice, rather than binding society to processes of addiction and alienation.

Following the transition from analogue to digital, and with an increasingly hyper-real future on the horizon, the words of the renowned astrophysicist Stephen Hawking ring true. During the opening of the Leverhulme Centre for the Future of Intelligence (LCFI) at the University of Cambridge — an institute that brings together various disciplines to address some of the questions raised by the rapid development of artificial intelligence research — he said, "The potential benefits of creating intelligence are huge. We cannot predict what we might achieve when our own minds are amplified by AI. Perhaps with the tools of this new technological revolution, we will be able to undo some of the damage done to the natural world by the last one – industrialisation". It follows that the challenge of our time is not only technological, but also deeply human: building the future requires informed choices, ethical governance, and keeping responsibility, empathy, and care for individual and collective life at the centre.

Conclusion

This paper has examined the transformation of contemporary cities in the context of rapid digitalization, proposing a conceptual framework that interprets urban change through the lens of digital humanism. By integrating perspectives from sociology, philosophy of technology, and urban studies, the analysis has highlighted how digital infrastructures are reshaping socio-spatial relations, redefining urban experience, and reconfiguring the balance between human agency and technological systems.

The proposed framework—articulated through the technological, social, spatial, and ethical dimensions—provides a structured approach to understanding the hybrid city as a dynamic and co-evolving system. The analysis of illustrative cases has further demonstrated that digital transformation is not a neutral process but one that carries significant implications in terms of power, governance, perception, and inclusion.

From an urban planning perspective, the findings underscore the need to move beyond deterministic or purely technological approaches and to adopt human-centered strategies capable of guiding digital innovation toward socially desirable outcomes. This entails rethinking the role of planning as a mediating practice between technological development and collective well-being, with particular attention to issues of equity, participation, and data governance. To operationalize the proposed framework and bridge theory and practice, Table 3 outlines the key planning and governance implications associated with the four dimensions of the hybrid city.

Table 3. *Planning and Governance Implications of Digital Humanism in Hybrid Cities. The Table Synthesizes Key Challenges, Planning Implications, and Policy Actions across the Technological, Social, Spatial, and Ethical Dimensions of the Hybrid City*

Dimension	Key Challenges	Planning Implications	Policy/Governance Actions
Technological	Algorithmic opacity; data concentration; infrastructure dependency	Integration of digital infrastructures into spatial planning; need for transparency	Regulation of data governance; public control of digital infrastructures; open data policies
Social	Fragmentation of social relations; digital exclusion; loss of direct interaction	Promotion of inclusive and participatory environments; strengthening urban social cohesion	Digital inclusion strategies; participatory platforms; community-based digital initiatives
Spatial	Blurring of physical and virtual boundaries; cognitive overload; hybrid environments	Design of hybrid urban spaces integrating physical and digital layers	Guidelines for augmented environments; regulation of digital interfaces in public space
Ethical	Surveillance capitalism; inequality; concentration of power	Integration of ethical principles into planning processes	Ethical frameworks for urban AI; data justice policies; governance of platform economies

At the same time, the paper acknowledges its limitations. As a conceptual and interpretative study, it does not provide empirical validation of the proposed framework, and it primarily focuses on technologically advanced contexts. Future research should therefore test and refine the framework through empirical case studies, comparative analyses across different geographical regions, and investigations into governance models and institutional practices.

Ultimately, the challenge of contemporary urban transformation is not only technological but profoundly human. As digital systems become increasingly embedded in everyday life, the capacity to shape their development in ways that preserve agency, foster meaningful relationships, and promote inclusive urban environments becomes a central task for planners, policymakers, and society at large. In this sense, digital humanism offers not only a critical lens but also a necessary orientation for reimagining the future of cities.

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