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# Emerging Technologies And Smart Cities



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Smart cities are coming soon. The latest research indicates that the global smart cities market size is poised to grow at a CAGR of

20.5% and is estimated to reach **\$2.5 trillion** by 2025. Investments in digital transformation and smart city deployments are also steadily trending upward; Statista estimates that by 2025 the global investment in direct digital transformation will reach **\$6.8 trillion** and by 2022 **40%** of cities will use digital space-planning tools.

Numerous international organizations have published reports, frameworks, strategic roadmaps and playbooks to guide key stakeholders in their quest to design and build urban living for future generations. Business leaders and government officials must embark on a digital transformation in order to build smart cities and offer their citizens an improved quality of life. There are numerous factors that drive the successful deployment of smart cities, but emerging technologies such as blockchain, artificial intelligence, 5G and 6G networks and edge computing are considered essential.

## **Tech Trends In Smart City Deployments**

Many experts consider Big Data a key driver for our next industrial revolution. It is expected that by 2025 total global data storage will reach 200 zettabytes, **50%** of which will be stored in the cloud. We are also witnessing other intriguing trends such as blockchain technology, next-generation computing and artificial-intelligence-powered platforms which have increased significantly during the pandemic and are expected to grow at impressive CAGRs over the next few years. Some countries have already successfully deployed 5G and are in the process of deploying 6G networks. With the latest launch of the metaverse and the omniverse, we are also noticing an exponential increase in virtual and augmented reality technologies in a variety of industries.

## **Challenges**

We certainly face numerous challenges as a society when deploying new technologies and recalibrating the global business ecosystem. Not only must we overcome significant legal, regulatory and compliance barriers, but we must also engage key stakeholders to manage the costs, as well as reduce the financial and digital divides in numerous markets worldwide. Additionally, cyberthreats have caused major security breaches over the last few years and are expected to increase alongside the large-scale adoption of emerging technologies. Trust and privacy remain key concerns and will require a global approach to find a sustainable solution. Furthermore, experts have highlighted significant interoperability and portability gaps, which will demand the development of international standards, certifications, KPI and quality assurance efforts. While numerous business leaders are focusing mostly on deploying novel technologies, we lack the collaboration required to ensure that industry standards are being developed and followed and that systems can communicate with each other for optimal user experience. Too little attention is being paid to measuring the performance of these novel smart city technology deployments.

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## Opportunities

**Global Data Exchanges:** The Covid-19 pandemic has acutely and painfully showcased the dangers of working in silos. World Economic Forum experts are suggesting that [global data governance](#) and data exchanges must be at the core of smart city ecosystems.

**New Business Models:** In order to accomplish this massive smart city revolution, we must also design, develop and implement new business models suited to the digital era, such as innovation-driven and partnership-driven business models.

**Education:** The digital innovation and transformation involved in smart cities development demand a profound rethinking of our global education system to train the workforce of the future. This can be accomplished through new education delivery models, new educational curricula and new certifications. We are already witnessing major global digitization, automation and virtualization, which are triggering a tectonic shift in workforce training and development. Upskilling and reskilling are now key concerns for business leaders.

**Digital Ethics:** Designing proactive digital ethics programs is crucial for the next industrial revolution. Customized digital ethics frameworks for emerging technologies in smart cities deployment will ensure diversity, inclusion and sustainability, as well as mitigate some of the cyberethics concerns inherent to smart urban living ecosystems.

**UN Sustainable Development Goals:** The United Nations Agenda for Sustainable Development outlines several [goals](#) to make cities inclusive, safe, resilient and sustainable. The UN reports that the pandemic has increased the percentage of people worldwide living in slums, to over [1 billion](#). Therefore, our efforts to design and deploy smart cities are now a moral imperative.

**UN-Habitat:** The United Nations Habitat [program](#) for people-centered smart cities promotes the development of technological innovations to help with sustainable urban development. Their recent report reiterates the need for global advocacy, financing,

trust, cyber-security and supporting national, regional and local governments in their efforts.

## **Future Directions**

While technology is important, all stakeholders must also consider the impact of these smart city developments on society. Having a purposeful mission and designing metrics that measure the impact on the environment, on our society and how we govern our smart cities for long-term sustainability is as important as state-of-the-art technology implementation. To enhance the quality of life for citizens of smart cities, we must use design thinking anchored in human-centric approaches.

The paradigm of the abundance mindset introduced by Stephen Covey decades ago remains relevant and uniquely suitable to smart city development. For future generations' sake, it would be wise for us to think globally and focus on growth and what can be accomplished instead of the negative elements plaguing our society. We must embrace change, take action and design state-of-the-art strategic roadmaps for the greater good.

In addition to purpose and an abundance mindset, we must also encourage young generations to trust their creativity and believe in the transformative power moonshot thinking can have on shaping smart city development for future generations. With novel skills previous generations never had, they can aim to tackle world problems that have been plaguing our society for decades.

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