



The Making of a Digital City Pathways to Success

Executive Summary

February 2019



Smart cities are a big part of our planet's future—bringing cost savings, resource efficiency, and new sources of insights to city management—but to date, achieving this aspiration has been challenging.

Our latest report, **The Making of a Digital City – Pathways to Success** identifies specific roadblocks to delivering smart city success and outlines the steps that governments and industry can take together to realise progress.

Roadblocks to Smart City Success

As smart city projects try to scale up they typically run into a number of major roadblocks.

By itself, each roadblock is a significant barrier, but the four also interconnect, slowing progress further.



ECOSYSTEM

A combined effort is required from an ecosystem of public and private stakeholders, which often have different agendas. Smart city solutions are often complex and require a consortium of public and private partners to come together and work out such critical issues as the business case, policy considerations, and technology hurdles. A disconnect between smart city solutions and existing city problems, together with a lack of technology expertise in government offices, can result in misguided efforts that do not effectively address citizens' needs.



TECHNOLOGY

In some cases, technology cannot be deployed affordably at scale, the required infrastructure (in terms of latency and bandwidth) doesn't exist for some use cases, or the existing network infrastructure cannot support the number of devices required. Large-scale smart city applications are often limited by bandwidth and connectivity requirements. Specific advanced smart city solutions may require new technologies, such as edge computing, to be scaled up.



VALUE CASE

At scale, the investments are considerably larger, business cases are harder to demonstrate and intangible social or indirect benefits are not easily captured. A large number of initiatives do not proceed beyond the pilot phase because indirect benefits cannot be monetised and/or one of the private players cannot demonstrate a positive business case.



DATA MANAGEMENT

Complexity and risk increase as more data sources are connected. Privacy considerations and national and international regulations, along with the risk of negative press attention, can slow adoption.

Pathways to Scale

Municipal governments, private sector players, and operators can all take steps to accelerate progress.

City leaders need to align smart city initiatives with their principal city goals; governments must develop public-

private value cases that help unlock required funding; and all participants need to collaborate to create viable open ecosystems that allow innovations and technologies to spark.



The path to solutions starts with a combined **public private ecosystem**. City leaders should start by defining solutions for the most pressing problems they face, align smart city initiatives with their principal city goals, and take steps to ensure that socio-economic factors are included in the value case. This ensures there are tangible means of demonstrating progress.

Practical steps that a city can take include building a dedicated smart city team with the responsibility to ensure that the ecosystem around smart city projects is successfully managed. In turn, industry can actively engage the municipality's smart city agenda instead of waiting for tenders or requests for proposals.



Governments, with the help of other participants, must develop **public-private value cases** that help unlock required funding and show win-win scenarios for all stakeholders. Mechanisms such as social municipal bonds and development funds have the potential to monetise some of the social benefits for cities and therefore support the smart city value case.

By engaging with cities, operators can also find innovative solutions for closing the gap in their 5G business cases, which both addresses a broader public-private need and provides necessary connectivity for advanced smart city applications (especially those with high IoT capacity requirements). One high-potential route is through synergies in the deployment of communications networks and other smart city infrastructure, such as smart street furniture that can also host cellular equipment. Such synergies also offer the opportunity for accelerated rollouts.



All participants need to collaborate to create viable **open ecosystems** that allow innovations and technologies to spark, facilitate monetisation and easy integration of new technologies and ensure that compatibility, privacy and security risks are mitigated.

Operators can accelerate the creation of open ecosystems by installing a standardised and easy to integrate 5G communications layer that provides a longer-term roadmap towards 5G. They can start with current technologies from the 5G family, such as narrow band IoT, making it possible for a wide variety of smart city devices to communicate. They can work with public stakeholders to identify win-win scenarios in network deployment and to create public private value cases in which all participants realise adequate returns.



Conclusion

Cities are not born smart. Managing growth in intelligent ways is essential to our future. The track record to date points to what is possible if ecosystems of public and private

sector participants can come together to surmount the dual roadblocks of scale and complexity. Building smart cities is one of the defining challenges of our time.



gsma.com/publicpolicy



GSMA HEAD OFFICE

Floor 2
The Walbrook Building
25 Walbrook
London EC4N 8AF
United Kingdom
Tel: +44 (0)20 7356 0600
Fax: +44 (0)20 7356 0601

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