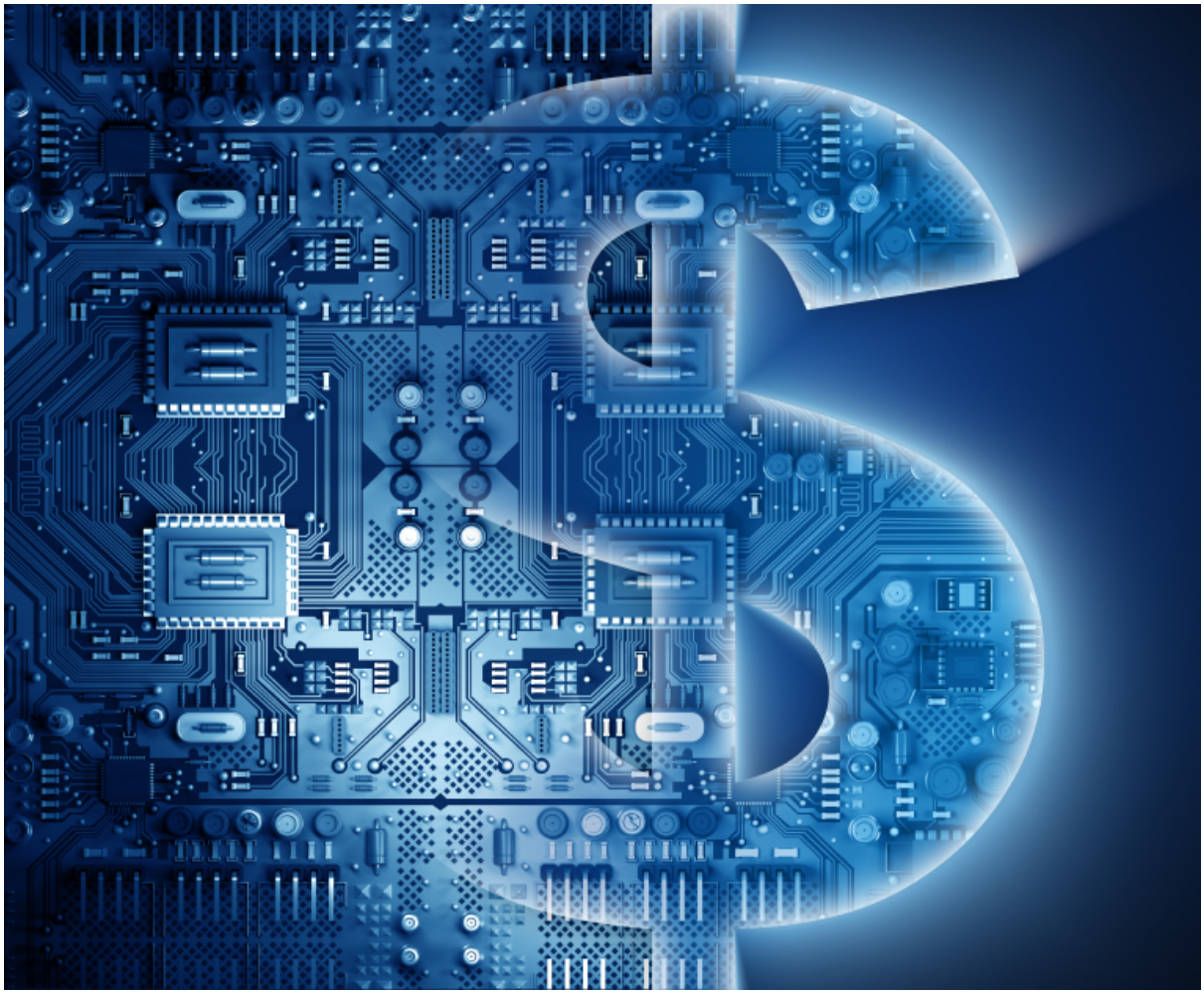
Smart City Challenges

Challenges of Smart Cities

1. Lack of Funds & Technology



One of the largest challenges is quite probably that of connectivity, with thousands or even millions of IoT devices needing to connect and work in unison. This will allow services to be joined up and ongoing improvements to be made as demand increases. Due to the increasing volume of sensors and their data, robust connectivity technology is a requirement for success. Many major city networks do not provide enough coverage to support even the simplest smart city applications. Without powerful city-wide coverage, the success of such a project would be more than unlikely.

2. Governance

The implementation of these large-scale projects involves a long series of legislative and policy agreements. The need to have private or associative actors collaborate in the financing of the projects creates an additional layer between the citizenry and the traditional actors in the city administration. This adds even more bureaucratic processes and possible conflicts of interest between existing intelligent city systems.

One other point is that there is no formula for all cities, each one has a different culture and operation so it is necessary to adapt. Not all cities have the same level of development, infrastructure and funding policies, so technology adoption may vary in different ways. This means that it is not always possible to rely on other proven smart city projects to act as a model for the success of others.

3. Lack of Infrastructure & Labor

Urban infrastructure plays a crucial role in Smart City projects. Depending on the existing infrastructure in energy, water and transportation systems, among others, a project may be formulated requiring more or less investment time. In addition, skilled labor is needed to transform urban infrastructure into Smart infrastructure, which requires even more time and investment.

4. Privacy & Security Risks

In intelligent cities, the interrelationship between public and private is possible thanks to the flow of data. This flow must be fluid and efficient, but possible cybersecurity and privacy failures must be controlled in addition to framing the principles of respect for privacy and personal freedom. These failures can be considered under 4 main points.

- **Availability** – Data needs to be available in real time with reliable access in order to make sure it performs its function in monitoring the various parts of the smart city infrastructure
- **Integrity** – The data must not only be readily available, but it must also be accurate. This also means safeguarding against manipulation from outside
- **Confidentiality** – Sensitive data needs to be kept confidential and safe from unauthorized access. This may mean the use of firewalls or the anonymizing of data
- **Accountability** – System users need to be accountable for their actions and interaction with sensitive data systems. Users logs should record who is accessing the information to ensure accountability should there be any problems