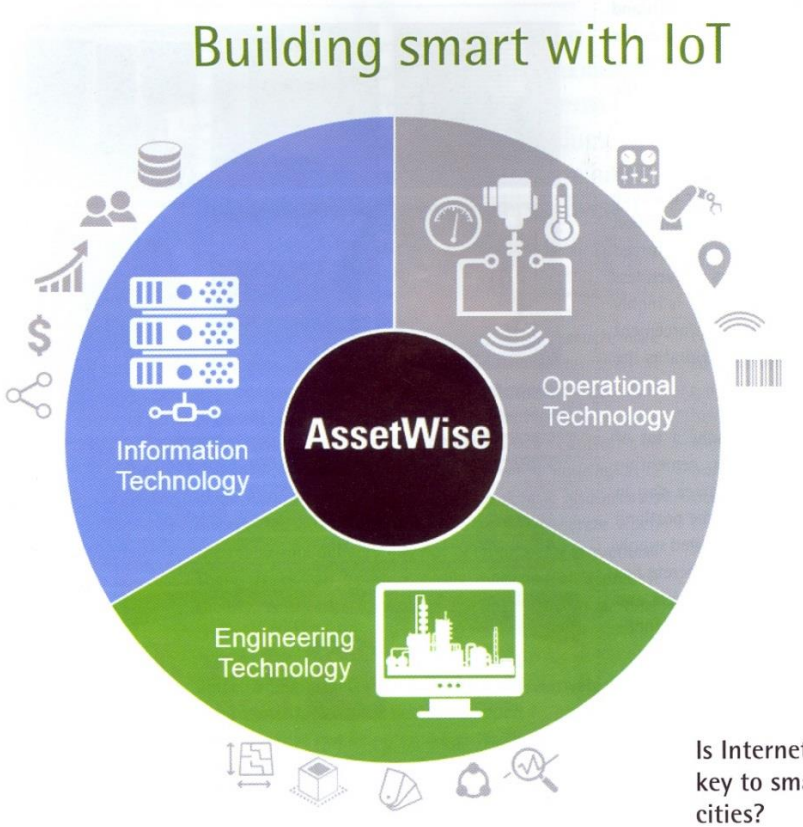
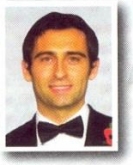


Is Internet of Things (IoT) the key to smarter buildings and cities?

IoT Can Connect IT, OT and ET Data

The IoT is not a new concept. Nor is smart cities, or smarter building design. The truth is that there is no real clear definition of what a smart city is, or indeed a smart building. What does appear evident is huge transformations and advancement in technology that are pushing the boundaries of what smart is when applied to infrastructure. In a time when city finance and investments are under close scrutiny, the IoT is seen as a potential to do so much more with the use of technology.

If we assume that the IoT is an opportunity to enable sensor technology and connectivity to monitor buildings and assets then we would better prepare ourselves to deal with the potential and pitfalls of such a statement. The ubiquitous nature of the IoT, from sensors, mobile phones, Wi-Fi and a host of other devices is likely to enter every industry much like computers, email and the web have done in the past. If we consider an example of the city, then many of the potential uses are in everyday assets like waste bins, buildings, lighting, traffic, signals, noise, air quality, pollution, parking and the list goes on.



Aidan Mercer, Senior Industry Marketing Manager, Bentley Systems

IoT is set to play a major role in providing the real-time, intelligent data required needed for a smarter future.

The IoT has a unique opportunity to interact with various assets and the demands and behaviours placed upon them. For instance, how about a bin that is always emptied but always empty? Does the maintenance crew have to take that route? Is there a more optimal route based on data provided by sensors in the field? Or could building services be run more efficiently to consume less energy and reduce costs? And what about the role of engineering data such as digital engineering models used in the planning and design that could be used in conjunction with IoT data for smoother operations?

Connecting IT, OT and ET (Engineering Technology) is the key. Software that can handle and process vast quantities of data and process it in a way that makes sense is fast becoming the must-have for infrastructure professionals. Operational analytical systems are providing that, by crunching the data and giving predictive and prescriptive outcomes.

Anand Sirohi, Business Area Director, Trimble India

IoT is the next disruption that has emerged, and has gained immense traction over the past three years.

"The key though for smarter operations is actually found in smarter planning and design. Using digital engineering models created when planning and designing that can be used for operations makes so much more sense when combined with IoT data. I predict that IoT is set to play a major role in providing the real-time, intelligent data required needed for a smarter future," states Aidan Mercer, Senior Industry Marketing Manager, Bentley Systems.

Advances in internet technology and mobile devices have been the biggest technology disrupters, which have impacted many industries in the past 5 years. "IoT is the next disruption that has emerged, and has gained immense traction over the past three years," Anand Sirohi, Business Area Director, Trimble India states. "It had shades of technology jargon, when the term first started to find a mention in media, discussion forums and technology trade, but the pace at which it has started to make its presence felt in many a workplaces, it became apparent that this is much more than just jargon. When we now experience the application of this technology in many areas, it's fascinating to watch how companies are demonstrating their capabilities and putting this technology in action. IoT is all about understanding the behaviour of the ecosystem of a 'Thing' vis-à-vis its ecosystem, and then the behaviour of everything with respect to the ecosystem of each 'Thing'. This behaviour is captured through sensors and devices, and is subsequently communicated to the recording stations."

IoT is widely used in developing and maintaining infrastructure assets worldwide. It has changed the development, construction and maintenance of infrastructure and communities globally. It also helps significantly in improving the processes associated with planning, design, construction, operations and maintenance of these assets. Moving forward, IoT will have a big role in the lives of citizens and communities, including the habitat they will use.

Trimble is bringing significant development in IoT adoption, and transforming the way the world works today in infrastructure and smart cities development. Explaining upon Trimble's IoT technology for smart city and infrastructure Sirohi states, "Trimble's Geospatial technology helps in capturing the behaviour of the connected infrastructure and city assets with respect to its surroundings and time. The data that is captured through global positioning based fixed and or mobile sensors, is communicated and stored at recording stations. The strategy is built around positioning and monitoring of things, communication of captured data to recording stations, and analysis of the aggregated data through data analytics, which in turn helps in making informed decisions. This entire process eventually helps in deploying appropriate solutions for the city and its inhabitants"

One of the best examples of IoT is the sounding timely alarms in case of any movements in static objects (earthquakes, land subsidence etc.). This is achieved by deploying Virtual Reference Station (VRS) sensors in the object and its surroundings. Further, the demand is increasing for improved citizen services - intelligent vehicle management, smart traffic management, electrical appliances automation for optimisation, risk management etc. IoT is changing the way the world works. It helps in setting up priorities, doing what is right and enable doing things the way they should be done.

Trimble is helping managing this transformation through its IoT solutions, bringing transparency in the system and optimising usage of efforts and funds.

Conclusion

IoT has become an increasingly growing topic and the rapid development has also opened up many opportunities to operators etc. Since smart city is a much spoken topic nowadays, IoT will certainly help in building the city smart.

In India, the biggest advantage of IoT is reflected in smart cities and smart communities initiative, where the intent is to make the ecosystem predictive and self-sustainable. To address the need of inclusive decision-making, consumers and citizens ought to be consulted for improvement in the services offered to them, and IoT is a big enabler towards meeting this need. ■