



## Single-Purpose Network (No integrated performance management)

In a building in which systems and applications run on separate networks, one sensor can impact just one application at a time. Such a network architecture cannot take interdependencies in account. For example: The temperature data serves only as input to the regulation of the climate system. We call this a “single-purpose network” for climate control. Such an architecture may limit the control of the buildings performance significantly.

## Multi-Purpose Network (Integrated performance management)

In a “multi-purpose network” the same sensor data can be used for multiple applications (purposes). For example: The presence of the user affects the lighting system, the operation of the blinds, the climate system, the cleaning schedule and the security levels. A multi-purpose network takes relevant interdependencies in account. Therefore, a multi-purpose network allows for better control over the performance of the building, than a single-purpose network.

## IoT Networks Unlock New Business Models

The rise of IoT networks creates another big advantage. It unlocks data with which to develop new business models in line with market developments. An upcoming trend, which only just got started, is the demand for ‘As-a-Service’ Business Models. Businesses don’t want to possess and maintain assets which are not directly related to their core-business. For example: Companies don’t want to invest in a lighting installation, they would rather choose ‘Light as a Service’ propositions. This affects the ownership of assets in buildings. For example: Lighting assets remain the assets of the manufacturer and/or supplier, whom are now the beneficiaries of sustainable product life cycles.

This suggests that the manufacturers or installers would need to monitor their assets remotely. IoT networks in Smart Buildings enable this. They allow for remote access to asset management data for any stakeholder, such as manufacturers – for product innovation – and the installer – for predictive maintenance. Again, multi-purpose networks offer more value in regards to As-a-Service business models than single-purpose networks, because they can monitor the effect of interdependencies, reflecting a more truthful presentation of the environment in which assets operate.

Despite the advantages, there are a very few “multi-purpose” IoT networks which live up to their expectations. This is due to a huge variety in (proprietary) communication network protocols (wired & wireless) on the market, requiring numerous interfaces to integrate different network topologies and protocols. Most multi-purpose networks, which projected great ROI’s on paper, end up to deliver huge complex systems that at central level (building management systems) are almost not manageable.

## The Solution for Multi-Purpose Networks

What if only one sensor and control network could serve all of the building’s actuators, lights and blinds etc? A network which needs no hubs, gateways, routers, interfaces and modems to scale up and requires no investments in (re)wiring. In concept, we are talking about a multi-purpose wireless mesh sensor & control network which communicates seamlessly with a flexible (agile) cloud based building management system. But if you look at the current range of network protocols and building management systems on the market, it shows that the development of a scalable, multi-purpose network, which connects to an equally flexible building management system, is not an easy task.

As a smart building must adapt itself to a changing environment, this should also apply to the network, applications and management of the building. Chess Wise envisioned this challenge during the first IoT hype at the beginning of this millennium, and has, since then, invested over ten years in the development of MyriaMesh, a mesh based, multi-purpose, wireless sensor and control network. We provide a total solution that can handle the dynamics of a smart building and ensure the communication with an agile back-office system. Like MyriaMesh, it is ultra flexible and can be easily refactored to meet changes in the use and the applications of a building.



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