

# Scalable network opportunities

## IoT's potential and new demands

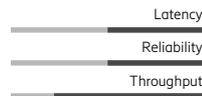
The era of IoT has the potential to transform industry and society and, with 5G on the horizon, there are unlimited possibilities for new business models. In order to handle this huge amount of traffic, networks will need to adapt. Operators will need to invest in new technologies to address the efficiency and flexibility demands of these new service deployments.

IoT can be segmented into Critical Machine Type Communication (C-MTC) and Massive Machine Type Communication (M-MTC) services

### MBB Enhanced mobile broadband

#### MBB services

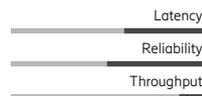
Such as mobile video streaming, in car entertainment and social networking.



### M-MTC Massive machine type communication

#### M-MTC services

Such as smart city sensor grids or vehicle tracking fleets, are large scale but have low throughput.



### C-MTC Critical machine type communication

#### C-MTC services

Such as remote surgery or cloud controlled robots in a factory, are typically characterized by ultra-low latency, high reliability and high throughput, but are relatively small scale.



## Network slicing as the solution

Network slicing is one solution that has now emerged and provides the capability to enable new business models across a wide range of industries. It allows operators to segment the network to support particular services and deploy multiple logical networks for different service types over one common infrastructure.

## Study on network slicing by Ericsson and BT

Despite extensive industry discussions on network slicing, we are unaware of any economic study that quantifies the benefits of this technology. Ericsson, therefore, partnered with UK operator BT to investigate what economic impact network slicing could have.

## IoT study results:

Network slicing benefits compared to conventional networks

**35%**  
Increase in value

**-40%**  
Impacted Opex

**150%**  
Total economic benefit

In collaboration with:



Over four months, Ericsson and BT performed an economic delta study comparing network slicing with two alternative scenarios for IoT new service deployments which we termed "one big network" and "separate specialized networks".

# Findings

## Network slicing enables the most economical model for IoT service delivery

The Ericsson & BT study found that the overall impact of network slicing is a potential significantly increased economic benefit for new service launches. Network slicing enables new revenue generation, lower opex and greater capex efficiency. The greater the number of slices, the more economical the model becomes, providing operators with extensive opportunities to increase revenue and make cost savings. Assumed investments made for automated network slice orchestration, to mitigate complexity of slice management, is paid back rapidly. Network slicing also maximizes flexibility to support different needs and changing demands, which is a core feature of 5G.

### Overall study results

The result of the study is that revenue is the primary value driver of network slicing. Network slicing can enable a significant contribution to revenues. Opex is the secondary driver through shortened service delivery cycles and simplified operations. Network slicing is also more capex efficient than the other network scenarios. The assumed investment in network slice orchestration to mitigate complexity of slice management offset the capex efficiency, resulting in a neutral capex impact of network slicing in the study. The overall resulting economic benefit of the study over 5 years summarizing revenue, opex and capex impact is 150% over conventional networks.

### Better customer experience

Network slicing can enable new revenue generation through market stimulation, faster time to market and opportunities from smaller niche services.

**Market stimulation** - Network slicing improves business flexibility through customized Service Level Agreements (SLAs), billing and self-service opportunities. This enables improved service performance, a better customer experience and thereby customer satisfaction.

**Time-to-market** - Network slicing will enable isolation during the service deployment process and reduce the interoperability testing effort, and allow faster service launches with faster revenue generation.

**Small niche opportunities** - With network slicing, smaller niche service opportunities will become economically viable for operators to explore, providing value through e.g. sand-boxing, temporary events and tailored business models.

### Simplified operations

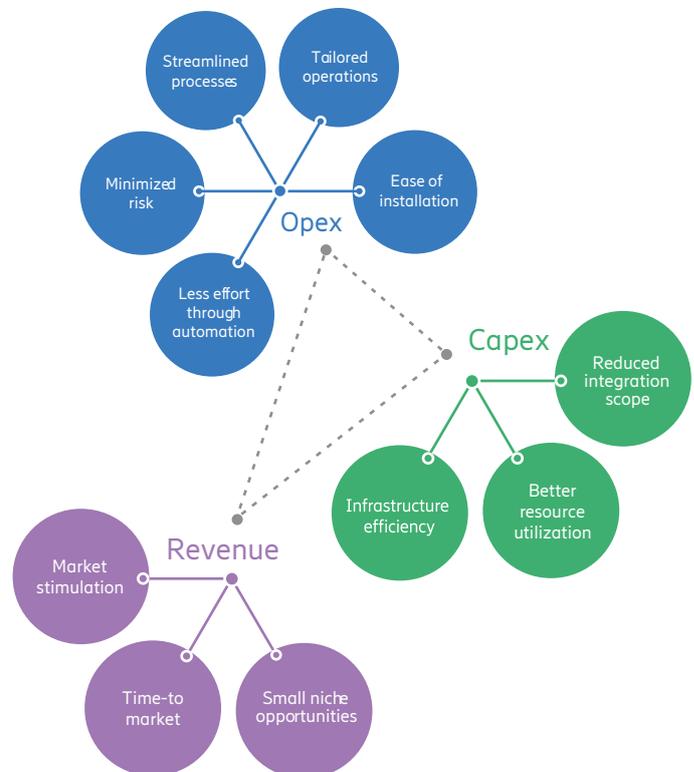
Separate slice environments result in shortened service delivery cycles and simplified, tailored operations.

**Streamlined processes** - Network slicing improves operations as there are less cross-dependencies between functions supporting different slices and service types, and more efficient processes.

**Tailored operations** - Flexibility and isolation ensure operations can be customized to the service type.

**Ease of instantiation** - Real-time instantiation of network functions and network slices enables resource optimization.

**Less effort** - If the right level of automation is deployed, network slicing can significantly reduce full time equivalent (FTE) staffing needs when scaling the number of slices,



thereby lowering costs.

**Minimized risk** - Network slicing enables isolation between services, ensuring protection from other network service disruptions at the functional layer, which reduces risk to existing business.

### Capex efficiency

**Infrastructure efficiency** - Network optimizations can be made with slicing, due to the implementation of an efficient traffic model with service type segregation. Functions in network slices are dynamically scaled according to traffic/service demand.

**Better resource utilization** - Each network slice distributes resources based on the complexity of the service, such as bandwidth or latency demand.

**Reduced integration scope** - The isolation of network slices reduces the integration and interoperability testing of service and network functionality.