5G and IoT industry digitalization business models – realize the revenue potential
In today’s world, communication service providers are facing several challenges. Despite high growth in both mobile subscriptions and mobile data traffic, overall mobile service revenue growth has flattened out. The current average forecast for CSP service revenues is expected to increase by only 1.5 percent annually from 2016 to 2026 globally. While this offers a steady and large revenue stream, the growth of the traditional revenues is slim compared to 5G-enabled revenue growth opportunities in 5G based industry digitalization and IoT.

To address this Ericsson has analyzed more than 400 industry digitalization use cases across 10 industry verticals. From these we have identified over 200 use cases where 5G and IoT is expected to play a major role.

Using 5G-IoT technologies helps solve many of the key challenges in digitalization for industries. By creating and enhancing industry digitalization use cases, operators can address additional revenue streams. However, as this is uncharted territory there are many challenges relating to the implementation of needed technologies and go to market strategies.

To address the execution challenges, we also studied how to group or cluster industrial 5G and IoT use cases according to go-to-market challenges and deployment requirements, creating 9, industry horizontal, use case clusters. The analysis also includes real-life case studies of CSPs that have deployed IoT offerings with successful monetization and business models.

Let us share some key insights.

<table>
<thead>
<tr>
<th>Year</th>
<th>CSP Service Revenues (USDbn)</th>
<th>Digitalization Revenues (USDbn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>1,497</td>
<td>968</td>
</tr>
<tr>
<td>2026</td>
<td>1,736</td>
<td>3,458</td>
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</tbody>
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**Challenge: current operator service revenues**

**Opportunity: digitalization revenues**

*Digitalization revenues for ICT players from 10 key industries

Source: Ericsson and Arthur D. Little.
The revenue potential for 5G based IoT depends on the communication service provider role in the value chain, spanning USD 204 to 619 billion in 2026

When it comes to generating revenue through 5G industry digitalization, three distinct CSP roles that service providers can take have been identified:

- **Network developers** excel in operating network infrastructure, including access, core and transport, and apply powerful IT enablers to support consumers and businesses with uniquely tailored connectivity solutions that maximize the power of digital. This is typically the first role a CSP takes when moving into IoT, offering connectivity and infrastructure provisioning. The Network developer role addresses approximately one third of the 5G industry digitalization revenue potential.

- **Service enablers**, in addition to empowering connectivity, provide digital platforms on which businesses can easily configure and integrate value-enhancing digital capabilities into their business processes in highly automated ways. They typically address approximately 85% of the revenue potential from 5G Industry digitalization.

- **Service creators** create new digital services and applications, build innovative businesses, and collaborate beyond telecoms to set up new digital value systems, in addition to providing digital platforms and infrastructure services. Thus, a Service Creator – who in most cases also provides networks and connectivity as well as enablement – can then address 100% of the 5G industry digitalization revenue potential.
Accumulating the total CSP addressable revenue for each role on a global level, the 5G-IoT business potential adds up to USD 204 billion for the network developer, USD 541 billion for the service enabler role and reaches a whopping USD 619 billion for the service creator role in 2026. Addressing industry digitalization, this represents a potential revenue increase of 36%. This is a maximum potential given that CSPs do take a service creator role and address all 10 industries with 5G.

The top verticals identified by business value are manufacturing, energy & utilities, public safety, healthcare and public transport in combination with automotive.

In this context, it is important to recognize that:

- The revenue potential outlined below represents a global top down potential for 2026 as one year only. Meaning that the revenue potential for 5G based IoT across 10 industry verticals across the 400 investigated use cases can potentially represent USD 619 billion for the year 2026. The aggregated revenue between 2017 -2026 is considerably larger.

- The revenue potential stated here is a potential – it's dependent on a wide number of activities by service providers to be taken and future strategic choices. Thus, it is not a forecast and should be considered as an indication of the outer boundaries of the potential.

- It is quite unlikely that any service provider will address all industry verticals nor assume all three roles across the 10 industry verticals. It’s rather likely that some service providers will address a chosen set of industries in combination with a chosen set of service offerings addressing a part of the potential.

“The addressable revenue potential ranges from approximatively USD 200 billion to 600 billion pending CSP strategic choices!”
Addressing revenue potential beyond immediate investment with use case clusters

For CSPs to stay competitive in the highly complex environment that is industry digitalization, they should consider how to cost-efficiently deploy a high number of use cases, what roles to take in the ecosystem and what the effective go-to-market models are. The best way to formulate one such strategy is to apply a use case cluster approach.

Use Case Clusters

+200 use cases in 10 industries

Automotive | Media & Entertainment | Public transport | Healthcare | Financial services
Agriculture | Retail | Energy and utilities | Public safety | Manufacturing

Application based cluster methodology

Enhanced video services | Monitoring and tracking | Real time automation | Smart surveillance | Autonomous robotics
Hazard and maintenance sensing | Augmented reality | Connected vehicle | Remote operations

Deployment challenges
- Technical performance criteria
- Enterprise networks/Indoor
- Device, network, computing and service enablers

Go-to-market challenges
- Business and monetization model
- Value chain positioning
- Role in ecosystem
- Partnership development

By addressing clusters of use cases, risk and reward can be spread across several industries and larger revenue pools. At Ericsson we have identified nine use case clusters, applying an application-based cluster methodology. For each of the clusters we have isolated the go-to-market challenges, including considerations on business models and value chain positioning, as well as network deployment challenges based on requirements on network performance and characteristics.

The nine clusters provide a more sizable opportunity than individual use cases. More importantly, they enable shared investments and resource allocation across a larger revenue pool. This approach has the additional benefit of increased scalability across industries. At the same time, clustering makes it easier for operators to adapt and evolve use cases based on market response.

Source: Ericsson and Arthur D. Little.
Monetizing the 5G-IoT opportunity puts pressure on agile business models

Depending on the role in the value chain CSPs would choose for respective use case clusters, the offerings and subsequent business models would vary greatly between different partners and customers.

Looking at more than 200 use cases assessed, we have identified a number of monetization models:

• **Project-based;** CSP receives a (generally) one-off fixed fee in a project setting

• **As-a-service fee;** CSP receives an agreed fee based on the solution provided (level or quantity)

• **Revenue share;** CSP receives a share of the beneficiary's achieved revenue

• **Subscription-based;** CSP receives a pre-arranged periodic payment (e.g. monthly) for the solution

• **Licensing cost;** CSP sells the rights to use (part of) the solution and receives licensing costs

• **Benefit-based;** CSPs receives a kick-back based on the costs-savings or benefits a user generates
Business Models and Money flows for industrial IoT use cases

Moving into 5G, most business models must evolve from today's traditional structure. With the rapid development of new use cases and a new high-demanding customer group such as industry verticals, CSPs need to apply agile and flexible business models that can cater to the complexity of the new reality.

The new environment for IoT and 5G is an ecosystem of partners where the CSP is providing, for example, an aaS offering to multiple customers. This will inevitably put pressure on business models and pose the difficult question of how to generate revenue from this web of stakeholders.

As an example, let’s examine the real-time automation use case cluster. The associated business models very much depend on the role in the value chain the communication service provider wishes to attain. If the CSP assumes a network developer role and offers 5G-enabled real-time automation solutions to hardware providers, then one of the most common business models going forward, in addition to subscription-based and as-a-Service fee, would be project based, because of up-front deployment investments.

CSPs assuming a service enabler role for real-time automation may have several business models. If their primary customers are third party providers, then common business models could be a revenue share model or an as-a-service model, due to scaling, revenue risk sharing and incentives.

Finally, for CSPs becoming real-time automation service creators, one of the main business models going forward could be a subscription-based service model, based on the specific customer needs and performance levels.

In addition to the nine use case clusters, we have also analyzed, or rather deep-dived, into eight service provider case studies, primarily to describe and concretize the business- and monetization model evolution. Get in touch with us to get more insights from these deep-dives.

“The chosen role or position in the value chain for the CSP affects the scope of the offering, and business model, and thus the monetization model.”
Reach beyond current business models and embrace the digital industrialization with 5G and IOT

We see a great opportunity for CSPs to tap into the IoT value chain, starting today, with evolving use cases and technologies in a parallel digital transformation, eventually reaching a full 5G experience. At the same time CSPs need to consider a transformation into new business models and monetization structure to be able to realize the full potential of the investments into ICT and digitalization.

While the road ahead for CSPs is truly exciting, and the opportunities are great, it is up to us as an industry to embrace these opportunities and turn them into growth.

Please find our research and insights published on Ericsson.com. We also intend to publish more articles from this very dense research and material providing insights on how to prioritize technology investments in 5G and IOT, so please look out for more publications.
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