

THE 5G
BUSINESS
POTENTIAL

Industry digitalization and the untapped opportunities for operators

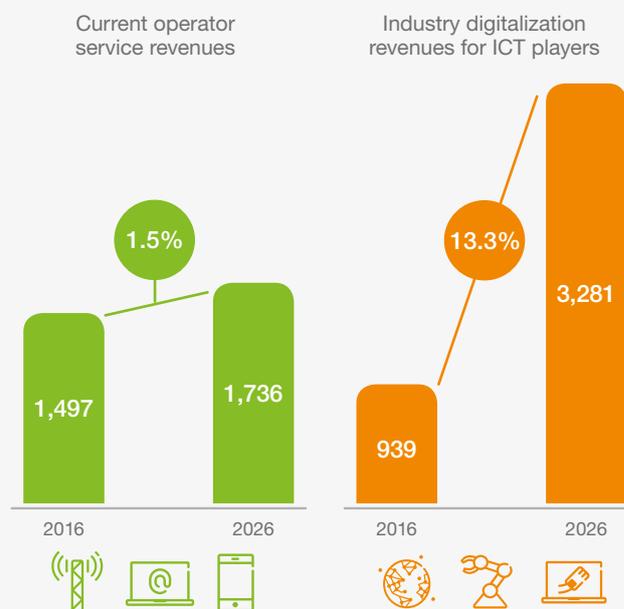
THE 5G MARKET POTENTIAL

Operators can benefit from an additional 34 percent revenue from 5G-enabled industry digitalization market opportunities by 2026

In today's world, telecom operators are facing multiple challenges; increasing demands from consumers and tough pricing competition are only a few of the factors causing market stagnation for the industry. Despite high growth in both mobile subscriptions and mobile data traffic, overall mobile service revenue growth has flattened out, compared to the 10–15 percent growth a decade ago.¹ Operators are struggling to turn the growing usage of mobile data services into greater revenues.

The current average forecast for operator service revenues is expected to increase by 1.5 percent annually from 2016 to 2026 globally. While this offers a steady revenue stream, it is slim when compared to 5G-enabled revenue growth opportunities in industry digitalization.

Figure 1: Revenue forecast (CAGR 2016–2026, USD billion)



Source: Ericsson and Arthur D. Little

ESTABLISHING A NEW IDENTITY

While operators may still profit from focusing on one of the steps in the value chain, they could achieve much larger growth if they embrace every step. Using 5G to solve the key challenges in digitalization for industries (such as manufacturing and automotive for example), operators can become more than network developers, addressing additional revenue streams by becoming service enablers or even service creators (see Figure 3, page 4). Today, there's already a mix of operator positions in the value chain.

B2B2X represents a market where, unlike conventional B2B (or IT services), the end-customer ("X") is sourcing a non - Information Communication Technology (ICT) solution, in which the operator's solution is embedded or integrated into the value proposition. Vertical industries outside the ICT sector do not have the necessary experience to provide the solution themselves. Such digitization of previously non-digital industries generates a vast opportunity for operators assisting customers with newly-enabled business models.

Although operators have the capabilities and technological advantage to offer such ICT services, they will need to focus their organization's engagement, operation and production models to succeed from these B2B2X opportunities.

METHODOLOGY

Understanding industrial digitalization revenues for ICT players involved extensive research into the impact of 5G for the key industries. A conservative view was taken on the findings in this research report, to deliver an authentic interpretation of the impact 5G will have on future markets.

Ericsson worked closely with Arthur D. Little, a leading international management consultancy firm, conducting interviews, consulting leading market reports and liaising with global and local representatives of Ericsson industry practices, as well as Arthur D. Little experts. The operator addressable share of revenue is based on the 2017 Arthur D. Little global telecoms study report, Major Strategic Choices Ahead: Reconfiguring for Value, which is based on 150 industry interviews.

¹ Ericsson Mobile Business Trends, 2015

DIGITALIZATION TRANSFORMATION

As the world becomes ever more digitally and globally connected, industries are experiencing an ICT-driven transformation. For operators, traditional methods of revenue are slowing, however, the market for industrial digitalization is only just beginning.

Industry digitalization revenues for ICT players come from adopting or integrating digital technologies into a specific industry. In this report, we do not include revenue from the sale of smart objects such as devices, cars, forklifts, or hospital beds.

Digitalization has risen industrywide across the globe, and it's predicted that digital revenue for ICT players will be worth around USD 3.3 trillion by 2026 across the 8 key industries studied.² These industry digitalization revenues are substantial – even today. In fact, revenues reached USD 939 billion in 2016;

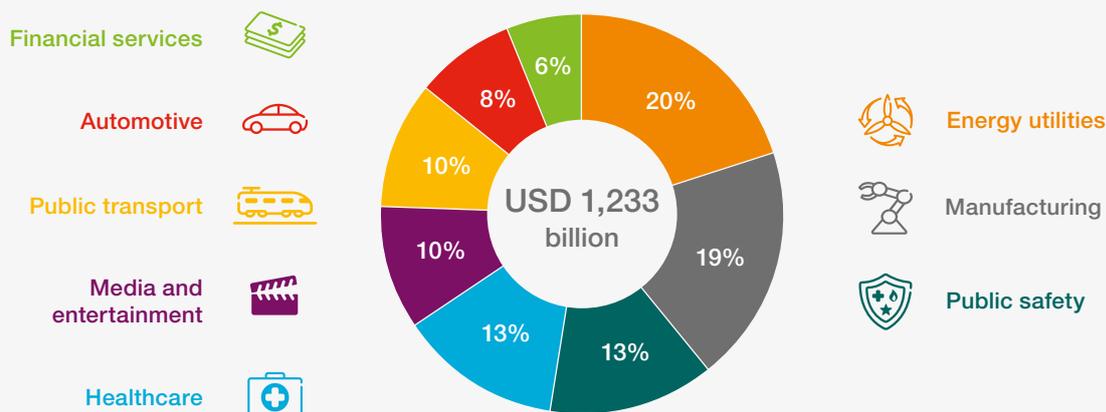
operators need to consider that this sapling market is already bearing fruit for opportunists to reap the financial rewards.

There are many different global trends that can account for this dramatic projected growth, including:

- > A rise in emerging economies, which are yet to be fully immersed in the digital world
- > The urbanization of integrated mobility
- > The digital revolution
- > New health and wellbeing demands
- > The scarcity and stability of resources

Additionally, business trends such as hypercompetition, new customer power and sophistication, the fast-paced change in business ecosystems and disruptive technological advances all affect vertical industries to different extents.

Figure 2: 5G-enabled industry digitalization revenues for ICT players, 2026



Source: Ericsson and Arthur D. Little

Tomorrow's progress begins today

5G will be a major technology in growing industrial digitalization, creating and enhancing industry digitalization use cases such as immersive gaming, autonomous driving, remote robotic surgery and augmented reality support in maintenance and repair situations. The largest opportunity will be seen in the energy and utilities industry, closely followed by the manufacturing and public safety sectors.

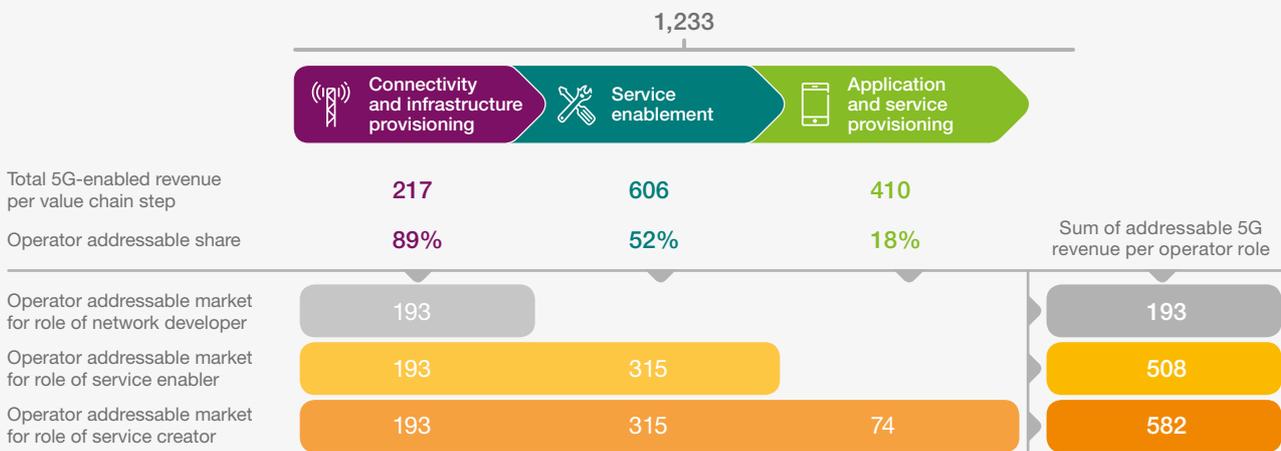
Three families of use case scenarios and applications have been identified, some of which can be catered by current 4G technologies, while others require 5G network capabilities:

- > Massive machine-type communications require connectivity for millions of devices, typically transmitting a relatively low volume of non-delay-sensitive data (low bandwidth and not latency-critical) via low-cost devices with extended battery life
- > Critical machine-type communications for ultra-reliable, resilient, instantaneous connectivity, with stringent requirements for capabilities such as throughput, latency and availability
- > Enhanced mobile broadband for mass mobile connectivity as demand for mobile broadband continues to increase

² Public safety, manufacturing, financial services, healthcare, energy utilities, automotive, media and entertainment, and public transport

THE 5G VALUE CHAIN

Figure 3: Operator addressable 5G market in eight industries (USD billion)



Source: Ericsson and Arthur D. Little

Based on the eight industries examined in the study, the graph above illustrates the potential revenue for operators from 5G industrial digitalization.

The three main roles for the operator when it comes to generating revenue through 5G industry digitalization have been identified as:

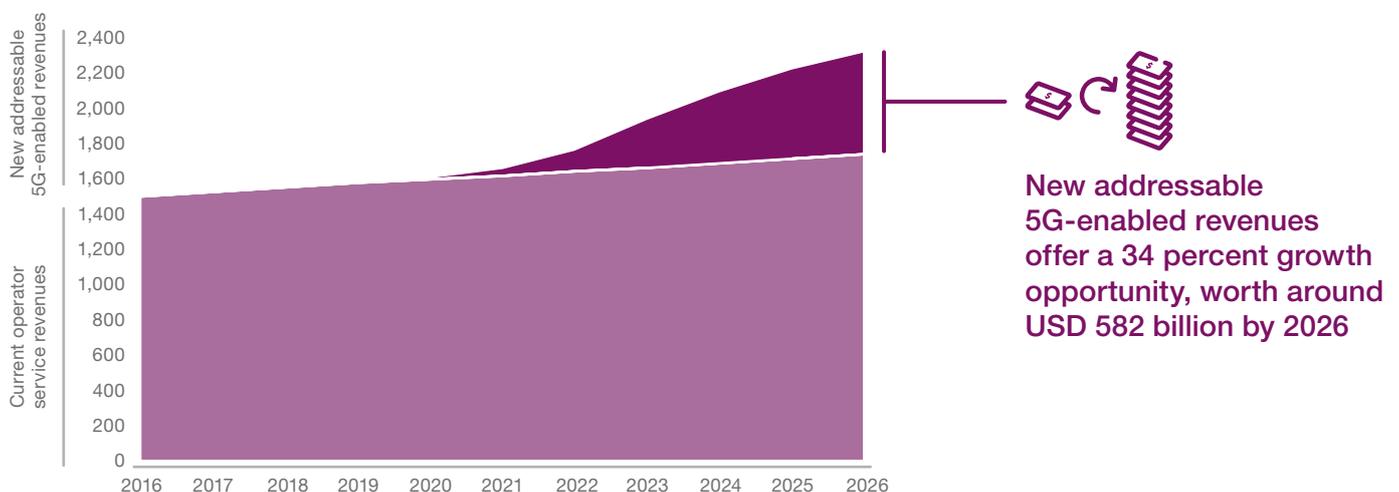
- > Network developer
- > Service enabler
- > Service creator

In 2026, we foresee there will be a USD 582 billion revenue opportunity for telecom operators addressing

industry digitalization with 5G technology. The largest opportunity for revenues created or enhanced by 5G will be in the manufacturing and energy and utilities sectors.

As mentioned on page 2, the forecast annual growth of current operator service revenues leading up to 2026 is 1.5 percent. As 5G becomes increasingly integral to industrial businesses, there is a clear rise in the opportunity for new 5G-enabled revenues. In fact, it is predicted that, by addressing 8 key industries, there is a market potential of 34 percent revenue growth by 2026. To capture this value, investments in 5G networks (e.g. 5G radio and 5G core), business development, go-to-market models and organizational adaptation are required.

Figure 4: Operators have a USD 582 billion revenue growth opportunity for 5G industry digitalization



Source: Ericsson and Arthur D. Little

KEY INDUSTRY TRENDS

Each of the eight key industries identified face numerous challenges due to industry trends, which could be addressed with the adoption of 5G digitalization.



MANUFACTURING

- > Hypercompetition with no sustainable competitive advantages
- > Increasing volatility from business cycles and product lifecycles
- > The smart factory is advancing from developments in the Internet of Things and automation



HEALTHCARE

- > Increasing consumer attention on wellbeing
- > Increasing cost to fit with social demographic changes
- > Increasing demand on quality, patient safety and data storage
- > Changing consumer behavior, freedom of choice and alternative service providers



MEDIA AND ENTERTAINMENT

- > Shifting consumer role as a co-creator of media content
- > Increasingly interactive and immersive forms of entertainment
- > Expansion of digital content through new platforms and new market players (OTT and VOD)
- > Ecosystem complexity



FINANCIAL SERVICES

- > Disruption from Fintech (technology used to support financial services) due to online payments, e-wallets etc.
- > Changing customer relations with online/mobile transactions and customized financial solutions
- > Structural changes – state involvement, protectionism and fiscal measures



PUBLIC SAFETY

- > Growing public surveillance with CCTV and wearable cameras
- > Cyber-attacks – global integration and the digital economy
- > Engaged and connected citizens – Internet Of Public Safety Things



AUTOMOTIVE

- > Autonomous driving and a connected traveler with telematics
- > Car sharing and changing commuter habits
- > Electric mobility with decreasing battery costs and a green agenda
- > Digital enterprise and connected supply chain
- > Digital vehicle ecosystem



PUBLIC TRANSPORT

- > Infotainment on the move
- > Urbanization and intermodality
- > Environmental awareness – CO₂ emissions and public spaces
- > Urban lifestyle and growing expectations on public transport

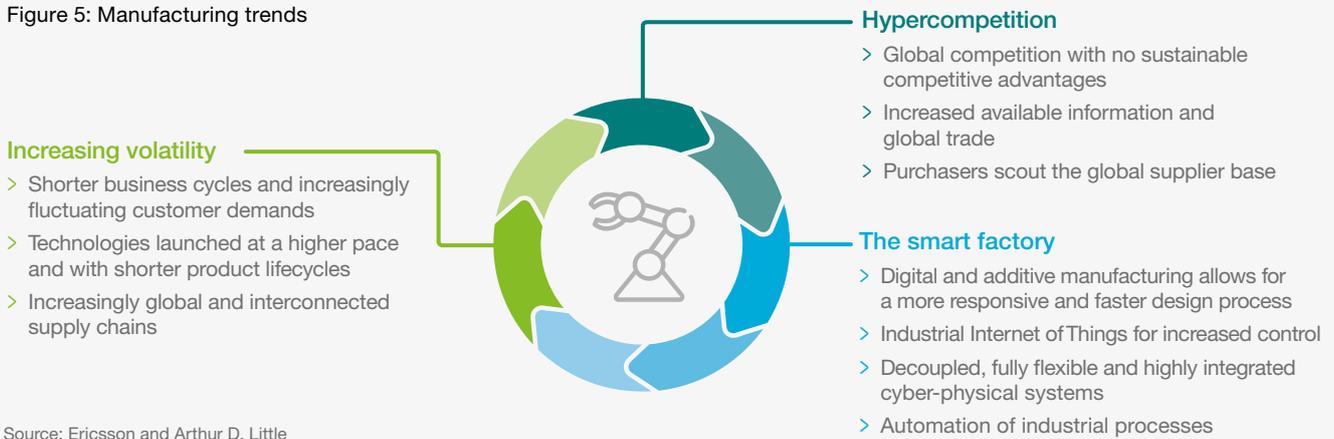


ENERGY UTILITIES

- > Oil supply imbalance and instability, fracking advancements and carbon constraints
- > Structural shifts with increasingly retiring assets
- > New decentralized business models
- > Electrification and renewable energy generation

PRODUCTION LINE ROBOTICS

Figure 5: Manufacturing trends



Manufacturing is one industry identified from the study that shows a strong market potential for ICT players when addressing 5G industry digitalization. As mentioned above, manufacturing is currently impacted by a number of trends such as hypercompetition, increased volatility from short business and product cycles, and smart factories.

However, 5G technologies can help to address and support these key trends and challenges and make a significant impact. One key example is enabling and enhancing critical control of production line robotics.

Critical control of production line robotics includes tethered or untethered robotics that are controlled, monitored, and can be reconfigured remotely. This technology could be used in factory floor production reconfiguration and layout changes, real-time analysis and even to steer a robot's movement from a remote location.



5G technologies can help operations become more flexible, efficient, safer and cheaper

5G plays a major role in connecting production line robotics by providing high-performance mobile services such as:

- > High-performance mobile connectivity for robotics, removing the need for fiber tethering
- > Quick reactions to discrepancies, helping to avoid damaging expensive components
- > Live remote monitoring of video streams from robotics
- > Low latency-enabled remote control applications

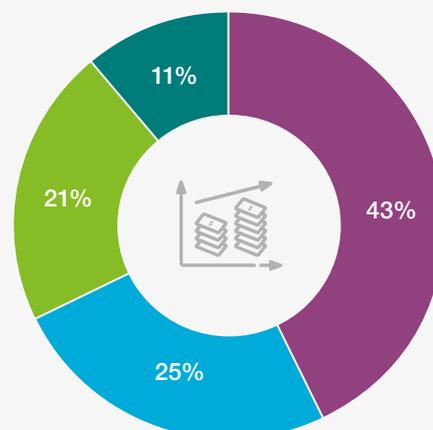
The technology in such a scenario has an estimated potential opex saving of 15–20 percent, and helps production operations become more flexible, efficient, safer, and cheaper to maintain.

Figure 6: Manufacturing digitalization revenues per use case category (2026)

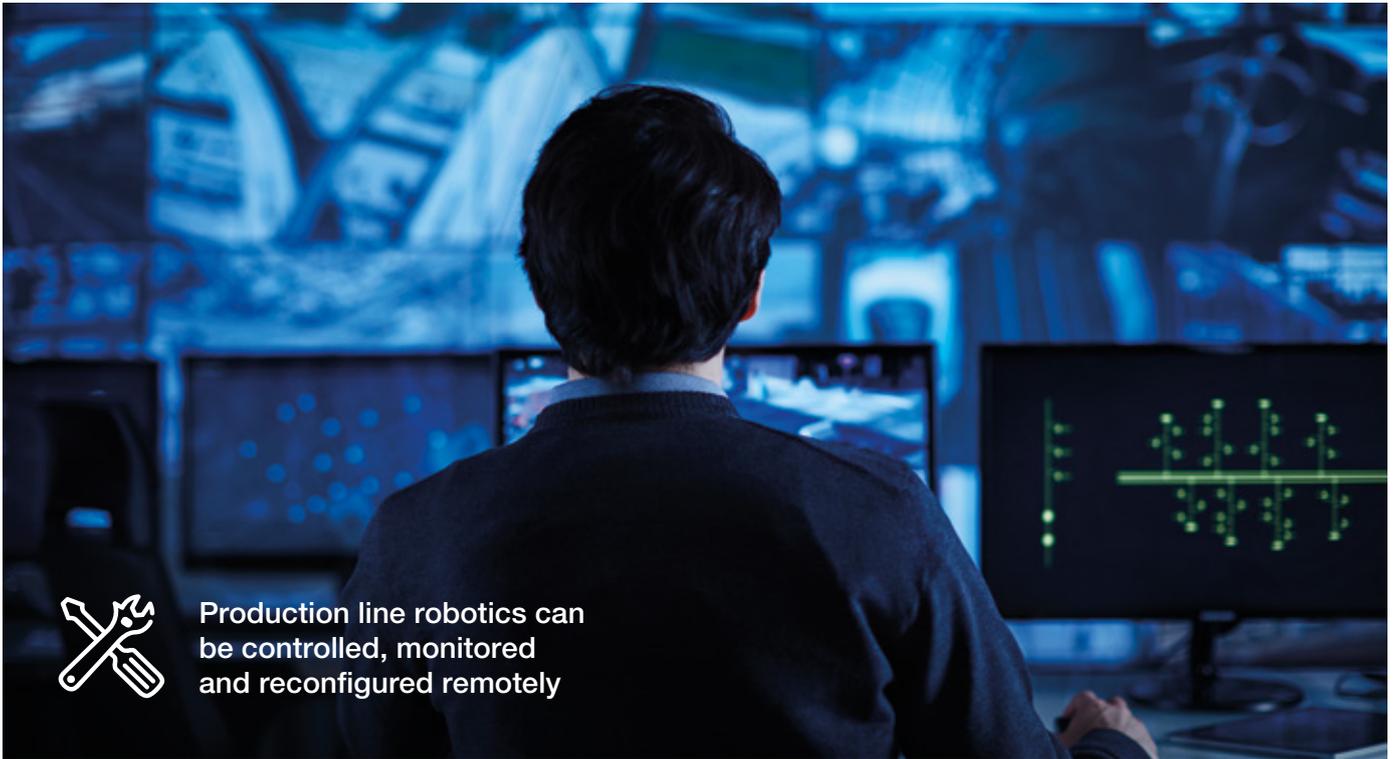
- Industrial control and automation systems
- Field devices
- Planning and design systems
- Manufacturing – other



Industrial control and automation systems is the largest use case category in the manufacturing industry



Source: Ericsson and Arthur D. Little



Production line robotics can be controlled, monitored and reconfigured remotely

The use of 5G technology in smart factories offers extensive benefits to manufacturing processes. Connected cameras and sensing devices can, for example, provide feedback to control centers enabling skilled staff to control and steer manufacturing remotely, resulting in increased productivity and flexibility.

5G has the capacity to support smart robots, which in turn can save time, money and resources. It has the capacity, reliability and security to enable remote control and

monitoring of processes. When connected to advanced analytics solutions, it is also able to assist in analyzing and predicting faults and potential threats before they occur.



5G's capacity, reliability and security supports use cases such as smart robots, enabling them to be controlled remotely

KEY FINDINGS

Industry digitalization investments are growing and generating revenue for ICT players worth an estimated USD 3.3 trillion by 2026



Operators can benefit from an additional 34 percent revenue from 5G-enabled market opportunities by 2026



5G has the potential to deliver unparalleled benefits to society and businesses



The time is now to start creating a 5G business



Ericsson is a world leader in communications technology and services with headquarters in Stockholm, Sweden. Our organization consists of more than 111,000 experts who provide customers in 180 countries with innovative solutions and services. Together we are building a more connected future where anyone and any industry is empowered to reach their full potential. Net sales in 2016 were SEK 222.6 billion (USD 24.5 billion). The Ericsson stock is listed on Nasdaq Stockholm and on NASDAQ in New York.

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