5G for business: the rise of wireless

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CEO, Ericsson-LG

5G Vertical Summit 2020
5G-enabled revenue potential across 10 industries

Global service creator, 5G for business addressable market, 2030 share, 2020-2030 CAGR

Source: Ericsson and Arthur D. Little
The rise of wireless

- **$1 trillion**: Size of smart manufacturing market by 2030
- **4.3 billion**: Number of wireless connections in smart factories by 2030
- **1 yr vs. 2 mo**: Time to reconfigure an automotive factory – wired vs wireless
- **50%**: Of top 200 retail companies use robotics for delivery and order fulfillment

Source: ABI Research

Global Digital Factory connections, 2016 to 2030
Unlock digital value of wireless communication

1. Reduced waste
   Reduced waste by digital e.g. calibrating a tool just in time.

2. Increased flexibility
   Savings from limiting cabling cost with flexible rebalancing of factory floor

3. New digital services
   OEE increase with more uptime, automation efficiency and new services

$1 USD per square meter per day

$4,000,000 Annual value for 10,000 m² factory
Why industries invest in cellular dedicated networks

- Limited bandwidth, lacking support for data/video
- Worker augmentation with AR, real-time remote expertise
- High operating costs of legacy technologies
- Automation to improve productivity and quality
- Improve worker safety and environment
- Generate new revenues and new business models
Local private networks

Technical customer needs
- High availability and resiliency
- Low latency, high throughput
- High security for sensitive data
- Advanced QoS features
- Additional coverage and/or capacity
- Additional services, such as PTT

Solution customer needs
- Pre-packaged and pre-integrated
- Manageable at scale
- Globally consistent, common SLAs
- Eco system of devices and applications
## Enterprise needs - why cellular?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>Reliability and low latency</td>
<td>Licensed spectrum, Quality of Service</td>
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<tr>
<td>Flexible Deployment</td>
<td>Full or partial on-premises system, Data connectivity only or plus value added services</td>
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<tr>
<td>Security</td>
<td>Cellular based security, Secure device authentication</td>
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<tr>
<td>Capacity &amp; Coverage</td>
<td>Various spectrum and bandwidth, Indoors and outdoors coverage</td>
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<tr>
<td>Thriving Ecosystem and Future Proof solution</td>
<td>Evolving ecosystem, Evolution to 5G</td>
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<tr>
<td>Seamless Mobility</td>
<td>3GPP global standards, Interoperability with commercial mobile networks</td>
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Industry 4.0 wireless ecosystem

Independent software vendors
Applications ecosystem
Application enablement Platforms
Manufacturing Execution Systems (MES)
Enterprise Resource planning System (ERP)

Cellular Network 4G /5G (public, sliced, Private Network, Industry Connect)

Modules

Cellular Gateways
Current loop
Ethernet
RS232
Analog I/O
Digital I/O

Machinery
Sensors
Actuators
Handhelds
Wearables

Wired via Gateway or Integrated Module, grid power
Integrated with Cellular Module or Chipset, battery

Device partners
Gateways
Sensors
Actuators
Handhelds
Wearables

ericsson.com/industry4.0
Smart connectivity – top references

40+
Industry 4.0
References
20+ installations
20+ proof point

- SKF
  5G Enabled Manufacturing

- Center Connected Industry
  Industry 4.0 Lab

- Ambra
  Connected Mine

- Honeywell & GE
  5G12

- Ericsson 5G Smart factory
  Smart manufacturing US

- eGo & Vodafone
  Automotive production

- Telefonica
  Industry 4.0 private Network

- Daimler / Mercedes Benz
  Smart Factory with Telefonica

- Volvo Trucks
  5GEM 2

- Bosch
  Industry Connect testing

- ABB
  5G Industry 4.0 Lab

- Scania
  Smart Production lab

- Ericsson
  5G Test Factory

- Bolden
  Industrial Mining 5G/LTE

- ÅF
  Industry 4.0 transformation

- Volvo CE & Telia
  Remote control industrial

- Sibur Petrochemical & MTS
  Connected production plant

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  Connected production plant

- Robotec / China Mobile
  Smart Production lab

- Ericsson Manufacturing
  Automation/Robotics

- China Mobile
  NB IoT and Predictive

- Ericsson Manufacturing
  VR / AR tests

- Telstra
  Connected Mine

- Coordinated Industry Com.
  Low latency & high reliability

- Comau
  Smart Manufacturing

- Osram & DT
  Campus Network

- Audi
  Connected Production

- Volvo Trucks
  5GEM 2

- Bosch
  Industry Connect testing
Dedicated Networks in a nutshell

— Reliable wireless connectivity enables more automation to increase efficiency, productivity, accuracy.

— Dedicated cellular connectivity provides greater reliability and device density, predictable latency and robust security.

— Ericsson Dedicated Networks brings off-the-shelf or tailormade solutions for industrial environments.

— Our unique ecosystem of over 50 hardware, software, strategic and advisory partners shortens the time of piloting, resulting in savings of time and money.