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Business models for Software based networks

WHY THIS MODULE?

5G is a powerful piece of technology at operators' disposal in capturing the revenue potential opportunities from industries' digitalization. But operators have to address some critical questions, beyond technology discussions. Professionals in the industry must be equipped with the right tools to examine:

- What are the early experiences from leading operators across the globe?
- What's the role that 5G can play in a post-pandemic "new normal" national recovery effort?
- What are current industries' expectations regarding 5G & IoT?
- What are the most relevant 5G-enabled use case clusters and how do they compare in terms of size and effort needed for deployment?
- What go-to-market challenges need to be overcome and what deployment capabilities need to be built to bring those use case clusters successfully to the market?
- What current examples are there of successful ongoing operator-driven 5G & IoT business models and cases on the road to 5G?
- What are the concrete first steps operators can take to boost their existing capabilities in IoT and position themselves as drivers of 5G industry transformation?

CONTEXT

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% annual growth a decade ago. 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% 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.

In parallel, global business trends such as hyper-competition, new customer power and sophistication, the fast-paced change in business ecosystems and disruptive technological advances all affect vertical industries to different extents. Industries are moving towards digitalization for better business outcomes: to increase revenue by better serving their customers, generating and stimulating demand, and beating the competition; to decrease costs by increasing productivity and efficiency; and to decrease risk by increasing safety and security.

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 industry digitalization is only just beginning. Digitalization has risen industrywide across the globe, and it is predicted that digital

revenue for ICT players will be worth around USD 3.5 trillion by 2026 across 10 key industrial sectors. Industry digitalization revenues for ICT players come from adopting or integrating digital technologies such as 5G, IoT, AI, cloud, etc. into a specific industry. These industry digitalization revenues are substantial – even today. In fact, revenues reached USD 968 billion in 2016; operators should consider that this young market is already bearing fruit for those who take the opportunity to reap the financial rewards.

5G will be a major technology for growing industry digitalization, creating and enhancing industry digitalization use cases such as autonomous driving, remote robotic surgery and augmented reality (AR) support for field maintenance and repair. Three families of B2B2X use case scenarios and applications have been identified:

- **Massive machine-type communications** requiring 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, e.g. asset tracking in a warehouse, a factory, or on a farm; or massive numbers of sensors in cars or other machinery to enable predictive maintenance.
- **Critical machine-type communications** for ultra-reliable, resilient, instantaneous connectivity, with stringent requirements for capabilities such as throughput, latency and availability, e.g. remote medical procedures; drones to inspect remote assets; or remote control of machinery in hazardous conditions.
- **Enhanced mobile broadband** for mass mobile connectivity, as demand for mobile broadband continues to increase, e.g. enhanced gaming or AR/VR to enhance the shopping experience.

Although operators have the capabilities and technological advantage to offer such 5G services, they will need to focus their organization's engagement, operation and production models to succeed in these B2B2X opportunities. In other words: they need to adjust or transform their business models in other to capture these 5G business opportunities.

OBJECTIVES

1) Business model concepts

The term "business model" is maybe one of the most overused concepts is business literature. However, it's poorly understood and applied even by seasoned professionals.

While many different business conceptualizations exist, we will refer to Osterwalder's *business model design template* presented in his bestseller book *Business Model Generation.* **During the module we will have the chance to discuss real examples and potential business model alternatives.**

- **Infrastructure**
  - **Key Activities** in executing a company's value proposition.
  - **Key Resources** that are necessary to create value for the customer. They are considered assets to a company that are needed to sustain and support the business. These resources could be human, financial, physical and intellectual.
  - **Partner Network** to optimize operations and reduce risks of a business model (e.g., alliances, commercial agreements, etc.), so that companies can focus on their core activity.
- **Offering**

    - **Value propositions** or the collection of products and services a business offers to meet the needs of its customers. A company's value proposition is what distinguishes it from its competitors, and provides value through various elements such as newness, performance, customization, "getting the job done", design, brand/status, price, cost reduction, risk reduction, accessibility, and convenience/usability.
- **Customers**
    - **Customer Segments** or a clear identification of the customers a company tries to serve (and even a clear statement of the segments out of its focus), that will require a set of capabilities to meet the characteristics of selected groups of clients. Some examples of segments are: Mass Market, Niche Market, Multi-Sided Platform / Market, etc.
    - **Channel** so that the company can deliver its value proposition to its targeted customers through different channels. Effective channels will distribute a company's value proposition in ways that are fast, efficient and cost-effective (e.g., own channels (store front, online), partner channels (major distributors), etc.).
    - **Customer Relationships** to ensure the survival and success of a company through "unique" relationships with its customer segments. Various forms of customer relationships include: Personal Assistance, Dedicated Assistance, Automated Services, Communities, Co-creation, etc.
- **Finances**
    - **Operating Costs** are the expenses which are related to the operation of a business, or to the operation of a device, component, piece of equipment or facility. They are the cost of resources used by an organization just to maintain its existence. Operating Cost is calculated by Cost of goods sold + Operating Expenses (OpEx). OpEx consist of Administrative and office expenses like rent, salaries, insurance, etc., and Selling and distribution expenses like advertisement, salaries of salesmen. Some examples of cost structures are Cost-Driven (focus on minimizing all costs) vs Value-Driven (focus on creating value for products and services) structures, and some characteristics are the level of Fixed Costs, Variable Costs, Economies of Scale, or Economies of Scope.
    - **Revenue Streams** or the way a company makes income from each customer segment. There are several ways to generate a revenue stream: Asset Sale, Usage Fee, Subscription Fees, Licensing, Advertising, etc.
    - **Capital Expenditure (CapEx)** or the money a company spends to buy, maintain, or improve its fixed assets, such as ICT network, buildings, vehicles, equipment, or land. Capital expenditures contrast with operating expenses (OpEx), which are ongoing expenses that are inherent to the operation of the asset.

2) 5G business potential for telecom operators

The second objective of this module is to discuss the potential revenue growth for operators based on their roles in the industry digitalization value chain, and across industry sectors.

During the class we will present the **three main roles for the operator** when it comes to generating revenue through 5G industry digitalization:

- **Network developers** excel in operating network infrastructure, including access, core and transport, and deploy powerful IT systems to support consumers and businesses with uniquely tailored connectivity solutions that maximize the power of digital.

- **Service enablers**, in addition to empowering connectivity, provide digital platforms on which third party businesses can easily configure and integrate value-enhancing digital capabilities into their business processes in highly automated ways.
- **Service creators** create new digital services, build innovative businesses and collaborate beyond telecoms to set up new digital value systems, in addition to providing digital platforms and infrastructure services.

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. Today, there's already a mix of operator positions in the value chain.

Based on Ericsson experience with dozens of operators, leading industries and experts across the globe, we will deep **dive in ten sets or clusters of more 200 use cases across different industries where 5G is expected to play a major role**.

Depending on their role in the 5G value chain, operators have the potential to address a revenue opportunity of USD 204–619 billion by 2026 across 10 different vertical industries, in addition to the forecast telecom service revenues of USD 1.7 trillion in 2026. This represents a business upside of up to +36%.

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

3) Capturing and realizing the 5G business opportunity

The **third objective of the module is to present some of the challenges that operators must overcome to realize the 5G business opportunity**. During the sessions we will have the chance to go through **nine clusters of 5G use cases**:

- Connected vehicles
- Augmented reality
- Real time automation
- Hazard and maintenance sensing
- Enhanced video services
- Smart surveillance
- Cluster: Remote operations
- Cluster: Autonomous robots
- Cluster: Monitoring and tracking

and **concrete deep dives**: Connected cars, Connected venues, Smart grid, Condition based maintenance, Fleet management solutions, Connected urban transportation, Commercial drone solutions, Remote patient monitoring, etc.

All use cases come with **a set of deployment and go-to-market challenges where operators, based on their current capabilities, need to enhance and supplement.**

The operator **deployment challenges** can be broken down as follows:

- **Throughput and latency**: the high throughput and low latency requirements for clusters, combined with quality of service guarantees.
- **Reliability and availability**: the need to avoid packet loss while having 99.999% availability.
- **Local area or wide area**: the complexity, measured in deployment efficiency, of providing and enabling functionality such as connectivity, infrastructure and distribution of cloud resources for the cluster.

Some of the **go-to-market challenges** that will be discuss during the class are:

- **Ecosystem complexity**: the number of partners, and their respective roles, that need to be managed.
- **Customer stakeholder complexity**: the level of complexity of selling applications within a cluster.
- **Regulations complexity**: the level of complexity (not only telecom regulation) of developing and delivering a cluster.
- **Business model maturity**: the business model/s required to derive maximum value from the cluster.

In summary, the module will help 5G professionals to design a 5G tailored go-to-market strategy, following a five-step approach:

1) Understand industry pain points and value creation drivers.
2) Develop the value proposition by outlining the problem to be solved, making sure the solution is unique and compelling enough, and measuring customers' gain/pain ratio.
3) Bridge the go-to-market challenges for the cluster and decide which ecosystem role, channel model and business model to pursue.
4) Invest in deployment capabilities such as network performance enablers and secure other technical enablers.
5) Implement the solution and build its roadmap based on the expected evolution of its capabilities. Make sure to use an experimentation and learnings framework to adjust the offering and be ready to scale.