Operators need to move from being communication service providers (CSPs) to digital service providers (DSPs). The Global digital telecom playbook and EY’s advisory services can help operators with this transformation.

Target audience
- Quad-play operators
- Triple-play operators
- Adjacent industry service providers

Content
- EY point of view
- Digital solutions
- Industry challenges
Macro context: markets and customers
Markets and industry stakeholders

**Challenges**

- Overall loss of velocity due to slow growth led by declining acquisition or upsell
- Rising expectations of service with the fast-evolving digital customer
- Decreasing agility induced by years of legacy
- Increasing pressure on margins with declining prices
- Fragile revenue market share with new business models popping up
- Consolidation in industry and pressure to realize group synergies
- Cost pressures mounted by advancing network technologies
- Paralysis due to certain regulatory environments
- Unknown competition with the advent of digital
- Loss of customer ownership to OTT and OS players

**Opportunities**

- Differentiation and loyalty-building through customer experience excellence
- Leverage the M2M space by forging strong partnerships with network management and software platform providers
- The huge digital divide in emerging markets offers immense potential for the next wave of growth
- Operational effectiveness through state-of-the-art processes, technology, partnering and culture shift
- Leverage capabilities to create own OTT monopolies
- Become enabler champion (e.g., client management) for entire ecosystem
Markets and industry stakeholders

Industry stakeholders dynamics

Stakeholders

Customers
- Digitally evolved
- Higher service expectation
- Low loyalty

Internet players/OTTs
- Fringe cost model
- Lower time to market
- More innovative
- Global customer reach

Equipment and technology providers
- Advancing technology
- Expensive upgrades
- Omni-channel reach

Regulatory authorities
- Compliance inducing critical delay
- Regulatory tightening
- Artificial spectrum scarcity

Payment associates
- Aggressive independent payment platforms
- Regulatory bottlenecks for telcos as banks

Device manufacturers
- Declining dependence on operators for bundling
- Customer choice evolving from connectivity to devices to OS
Globally, key digital trends have triggered operators’ transformation toward being digital service providers.

### Over-the-top

<table>
<thead>
<tr>
<th>Content</th>
<th>Distribution</th>
<th>Connectivity</th>
<th>Screen</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apps</td>
<td>Services</td>
<td>App store/retailing</td>
<td>App store/retailing</td>
<td>Telephony</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Internet access</td>
<td>Software/platform</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Discovery</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Consumer insight</td>
</tr>
</tbody>
</table>

Mobile operators are now open and receptive to partnering with OTT service providers and exploring new revenue opportunities.

### Big data

- Telecoms is both a consumer and provider of big data services.
- Telecoms opportunities with big data:

#### Focus areas

- Targeted product and marketing offers
- New business models enablement
- Network experience optimization
- Proactive data strategies

- Data mart provider for customer data sets
- Platform provider for information processing
- Provide insights to partners for improving services
- Suite of services catering to third parties

Exponential growth in the volume and velocity of data generated is creating huge opportunities in big data.
Globally, key digital trends have triggered operators’ transformation toward being digital service providers

3  E-payments

With the advent of the digital customer, CSPs will have to invest in digital payments

Customer card holder and mobile subscriber

Customer pays merchant for product

Merchant

NFC-enabled handset

NFC

Customer’s bank

Mobile subscription fee and potentially eWallet fee

Potential rental fee for slot on UICC card

Potential rental fee for slot on an eWallet application

Potential rental fee per customer for updating data on card

Trusted service manager (TSM)

Interchange fee for transferring funds

Annual credit card fee and potential eWallet fee

Existing monetary flows

New for eWallet

4  IoT/ M2M

New business opportunities are emerging from the possibility of connecting new devices and industries.

Internet of Things

Telcos to provide communication infrastructure

Security and surveillance

Transportation and logistics

Medical and health care

Logistics

Industrial and energy
Globally, key digital trends have triggered operators’ transformation toward being digital service providers.

### Mobile Advertising

Large latent mobile advertising opportunities are still untapped in many parts of the world.

<table>
<thead>
<tr>
<th>Media channel and advertising services</th>
<th>Advertising campaign creation</th>
<th>Ad sales</th>
<th>Technology</th>
<th>Targeting</th>
<th>Ad service</th>
<th>Campaign analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage the channel on which advertising is displayed</td>
<td>Create campaign and advise announcers</td>
<td>Sell the ad inventory</td>
<td>Provide technology for ad provisioning</td>
<td>Provide customer intelligence for ad delivery</td>
<td>Run the ad serving engine</td>
<td>Collect and provide campaigns’ results to announcers</td>
</tr>
</tbody>
</table>

### Cloud Computing

Cloud-based infrastructure presents opportunities to acquire large-scale flexibility quickly.

- Managing cloud connectivity
- Cloud offerings
- Enhancing cloud services
- Using cloud services

- Delivering cloud capabilities
- Network
- OSS/BSS support functions

- Telco
- Consumer and business cloud users
- Telco specialist cloud provider
- Third-party
- Third-party
- Cloud provider
Customer exposure to host of digital interfaces is increasing rapidly

Customer 2.0 is forcing ecosystem players to provide digital interfaces and consistency of digital experiences across channels.
Telco 2020: the future
Looking ahead: digital will transform the 2020 revenue mix

Operator perceptions of 2020 revenue mix

Q. What proportion of revenues do you believe digital services will account for at your organization in five years' time? (Please select one.)

% respondents

<table>
<thead>
<tr>
<th>Proportion</th>
<th>% Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%-5%</td>
<td>19</td>
</tr>
<tr>
<td>6%-10%</td>
<td>13</td>
</tr>
<tr>
<td>11%-15%</td>
<td>19</td>
</tr>
<tr>
<td>16%-20%</td>
<td>16</td>
</tr>
<tr>
<td>21%-25%</td>
<td>13</td>
</tr>
<tr>
<td>25%+</td>
<td>22</td>
</tr>
</tbody>
</table>

Operators worldwide predict a marked shift in their revenue mix by 2020

“Digital services currently account for 3% of revenues. In five years’ time, this will rise to 10% or the low teens due to the provision of services in security surveillance, smart city and enterprise services.”

Proportion of respondents that see digital revenues accounting for more than 10% of overall revenues by 2020

Source: EY research

Industry M2M forecasts

M2M revenue forecast, 2014-19

<table>
<thead>
<tr>
<th>US$b</th>
<th>% Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>1</td>
</tr>
<tr>
<td>2015</td>
<td>2</td>
</tr>
<tr>
<td>2016</td>
<td>3</td>
</tr>
<tr>
<td>2017</td>
<td>4</td>
</tr>
<tr>
<td>2018</td>
<td>5</td>
</tr>
<tr>
<td>2019</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: GSMA

Mobile ecosystem revenues 2020 forecast

Operator share = 50%

Source: Ovum

Operater share = 50%
Supply and demand dynamics create a range of 2020 scenarios

Innovation is likely to hinge on collaboration and competition, as regulatory attitudes and network upgrade programs evolve in new directions.

Evolving industry dynamics

2005
- WAP-based mobile content services
- Mobile operator sub-brand launches
- Mobile financial service launches
- Mobile operator geographic footprint growth in consumer and enterprise services
- Vertical collaboration with tech firms to widen enterprise service portfolios

2010
- Move to tiered data, PAYG cloud, family and shared data
- Widening of product scope allied to segment-specific focus

2015
- Vertical collaboration with OTTs to differentiate packages
- Rising operator horizontal collaboration in digital services
- Vertical collaboration with tech, e.g., IoT, smart city

2020 scenarios
- Partnerships drive operator service creation
- Shift beyond B2C-centric business models
- Rising competition for wallet share as all players boost scale and capability
- Increasing disruption across all industries – blurring of use cases
- Increasing operator differentiation through network quality
- Widening of use cases, customer types, pricing models
- More holistic and pro-investment national digital policies
- Risk of global policy fragmentation, e.g., net neutrality, data protection
- Proliferation of network technologies according to use case

Supply-side developments
- Extensive 3G and fiber rollout
- Wi-Fi rollout
- Wi-Fi rollout
- 4G rollouts begin

Changing market structures
- New social media and content platforms
- Smartphones and app stores
- Birth of OTTs
- OTTs extend platform capabilities
- Web giants extend into access provision
- Tower sale-and-leaseback
- Rising in-market consolidation
- Rising operator appetite for bolt-on acquisitions
- Geographic footprint trimming
- Rising operator horizontal collaboration in digital services
- Vertical collaboration with tech, e.g., IoT, smart city

Operator service innovations
- Mobile operator sub-brand launches
- Mass market residential fixed-line bundles
- Vertical collaboration with tech firms to widen enterprise service portfolios
- Birth of OTTs
- OTTs extend platform capabilities
- Blurring of digital categories, e.g., e-commerce, payments, marketing
- Tower sale-and-leaseback
- Web giants extend into access provision
- Geographic footprint trimming
- Rising in-market consolidation
- Rising operator appetite for bolt-on acquisitions
- Vertical collaboration with tech, e.g., IoT, smart city

Risk of global policy fragmentation, e.g., net neutrality, data protection
- Proliferation of network technologies according to use case
Telco 2020: digitized future telecoms end-to-end journey

- **Aware**: Potential customer discovers your new product, researches across competitors.
- **Buy**: Visits online store, fills online application form, pays amount online and takes online appointment for physical delivery.
- **Use**: Customer visits online for upgrade of plan and activates plan online.
- **Pay**: Customer visits online/app channel to pay bill, providing instant credit to your company.
- **Get help**: Customer raises speed issue on social channel after researching FAQs. Customer is kept informed and issue is resolved quickly.
- **Renew/terminate**: Analytics identify if customer likely to churn. Appropriate offers are provided to retain customer. Customer posts good review on social channel.

**Voice Of customer**

**Feedback**

**Social listen**

**Digital design five year plan | Build today**

**Strategy**

**Design**

**Technology**

**Big data analytics**

**Customer experience**

**Internal**

**External**
Telco 2020: digitized future telecoms journeys

**Aware**
- Discover: Potential customer discovers your new product.
- Word of mouth: Gets to know about product experience from other customers.

**Buy**
- Research: Potential customer learns about your product.
- Select: Customer visits the website/app and opts for a personalized plan. Usage simulator helps choose an appropriate plan.
- Purchase: Customer fills in online details and makes online payment, and appointment for product delivery.
- Activation: Company verifies customer information with govt. database available online. Verification is done by delivery agent.

**Use**
- http://www.telco.com (or app)
- Customer visits the website/app and opts for a personalized plan. Usage simulator helps choose an appropriate plan.

**Pay**
- Customer makes online payment and submits KYC details. Online appointment for any physical delivery.

**Get help**
- Customer verifies details to agent on the spot, and connect is activated remotely.

**Renew/teminate**
- Customer receives activated connection at scheduled time.

---

Online
- Link leads to company website and blog for detailed information.
- Search for best prices/plans through research websites.
- Usage simulator helps customer opt for suitable plans.
- Customer chooses personalized combination of services.
- Customer makes online payment and submits KYC details. Online appointment for any physical delivery.

Social media
- Sees paid Facebook ad while browsing online for new mobile connection.
- Reads posts from friends about great experience with product.
- Looks for reviews via Google search.
- Customer chooses personalized combination of services.
- Customer makes online payment and submits KYC details. Online appointment for any physical delivery.

Notification (SMS/email)
- Customer verifies details to agent on the spot, and connect is activated remotely.

Calls (voice/video)
- Customer receives activated connection at scheduled time.

Home service
- Customer verifies details to agent on the spot, and connect is activated remotely.
Telco 2020: digitized future telecoms journeys

**Aware**
- First-time usage: New customers try to find out how to use the product

**Buy**
- Usage: Customers uses products/services

**Use**
- Change product/pricing: Customer changes the product or pricing to suit his/her needs
- Notification: Gets notification about data usage hitting the data cap, with link to add-on packs
- Calls: Guided explainer for first-time usage within apps

**Pay**
- Change profile: Customer changes the account information
- Billing: Bill generation through mediation and rating system. Customer receives it on multiple channels
- Home service: Gets a welcome message with product demo after activation

**Get help**
- Online: Goes online to download/use new products and services
- Social media: Content displayed is based on usage history
- Notification (SMS/email): Activates add-on pack
- Calls (voice/video): Searches for better pricing/packs
- Home service: Uploads name and address as required with proof

**Renew/terminate**
- Payment: Customer pays bill over e-channels reducing credit period

**Online**
- Online: Customer makes online payment and submits KYC details. Online appointment for any physical delivery.

**Social media**
- Social media: Customer changes the product or pricing to suit his/her needs

**Notification (SMS/email)**
- Notification (SMS/email): Customer receives e-bill, mobile alert and bill on app, with combined bill for multiple connections or family connection

**Calls (voice/video)**
- Calls (voice/video): Receive incentives on timely payment of bill

**Home service**
- Home service: Agent check and validates change

**Customer journey**
- Customer pays bill online via app, wallet, credits, loyalty points or auto debit.
Telco 2020: digitized future telecoms journeys

Online

Social media

Notification (SMS/email)

Calls (voice/video)

Home service

Aware

Buy

Use

Pay

Get help

Renew/terminate

Proactive customer communication

Self care

Social media and communities

Assisted Care

Customer retention

Customer termination

Problems detected, diagnosed and resolved without customer getting to know about it.

Customer tries to diagnose problem and find resolution on his/her own.

Customer changes the product or pricing to suit his/her needs.

Contacts customer service for support.

Proactive retention efforts based on service quality and usage patterns.

Customer pays bill over e-channels reducing credit period.

Customer detects an issue, goes online to browse FAQs and how-to videos.

Further research leads to forum where other customers offer guidance on problem resolution.

Tweets/custsvc department about issue; retweeted many times by followers.

Issues resolved quickly; receives acknowledgment with further steps on email.

Analytic to identify likely-to-churn customers triggering proactive retention through communication to customers with special offers.

Issues resolved through video chat.

Customer requests for termination online.

Renew customer gets a better plan and decides to continue usage.

Renew customer clears dues and schedules appointment for device recovery if applicable; Online refund of any security deposit. Account settled and connection terminated.

Terminating customer clears dues and schedules appointment for device recovery if applicable; Online refund of any security deposit. Account settled and connection terminated.
Telco segments and digital maturity
### Telecoms segmentation and digital maturity

<table>
<thead>
<tr>
<th>Segments</th>
<th>Characteristics</th>
<th>Examples</th>
</tr>
</thead>
</table>
| **Established**| • Oldest operators in the market  
• Carrying extensive assets and legacy systems  
• Large complex organizations with multiple LoBs | • AT&T  
• BT  
• Deutsche Telekom |
| **Transformers**| • Usually incumbents/incumbent challengers in the market  
• Medium to large organization with agility in their DNA  
• Fairly high innovation in technology and business design | • Verizon Wireless  
• Vodafone  
• Orange  
• Telstra |
| **Maturing builders**| • Often regional or national players in growth markets  
• Battling increased complexity and competition  
• Focused on growing reach and connecting with customers | • MTN  
• Airtel  
• Idea  
• Telefonica |
| **Builders**    | • Often regional or national players in growth markets  
• Battling increased complexity and competition  
• Focused on growing reach and connecting with customers | • Telenor  
• Reliance Jio  
• Idea |
| **Pioneers**    | • Market disruptive players  
• New and path breaking business/operating models  
• Customer-centric organizations heavily dependent on P2P networks | • Giffgaff |
Telecoms segmentation and digital maturity

- On the road to digital transformation, telecoms companies need to plan and strategize on how to reimagine their business based on their current digital maturity.
- Different telecoms companies will face their own unique challenges based on their digital maturity levels.

<table>
<thead>
<tr>
<th>Digital maturity</th>
<th>Implementation complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Pioneers</td>
<td>Transformers</td>
</tr>
<tr>
<td>Maturing builders</td>
<td>Established</td>
</tr>
<tr>
<td>Builders</td>
<td></td>
</tr>
</tbody>
</table>

- **Pioneers**: High digital differentiation; early digital adopter and drivers of digital innovation.
- **Transformers**: Digital ambition to be competitive in the market; quick to implement given their size and scale.
- **Maturing builders**: Moderate digital ambition; high abilities to embed digital in existing capabilities; often disintegrated execution.
- **Builders**: High digital ambition; opportunity to start from backend building up to digitizing integrated customer interfaces.
- **Established**: Digital ambition subdued by high barriers to implement; digital initiatives launched in pockets leading to low maturity.
Value chain elements deep dive
Telecoms value chain: key elements

Telecoms core network elements including operations and maintenance

Network convergent technology and infrastructure

Telecoms key elements

Idea to cash, ideation factory, new product development, funnel management, product portfolio management, pricing

Fulfillment, assurance and billing

Customer interface operations

Traditional telecoms elements post-order capture through to assurance

Marketing including digital sales, customer service, MACD, channel/touch point management

Hiring, training, employee engagement, rewards and recognition

Telecoms core network elements including operations and maintenance

Talent and culture

Partner and ecosystem

Technology elements where digital execution will happen

End user consumption devices and customer premise access equipment

Enterprise technology

Spectrum management and regulatory compliance including reporting, audits and minimum obligations, customer privacy and intrusion detection and prevention

Devices

Regulatory
## Value chain deep dive

*Network convergent technology and infrastructure*

### Challenges

<table>
<thead>
<tr>
<th>Challenges</th>
<th>EY point of view</th>
<th>Solutions for digital enablement</th>
</tr>
</thead>
</table>
| Shorter lifecycle of new technologies(2G/3G/4G) | • Coexistence of multiple generations of technologies will force operators to have backward compatibility  
• Smart offload of traffic to lower cost channels will be enabled by digitization ensuring optimal usage and cost efficiencies | • Digitized network management and operations |
| How to use customer information for differentiated customer experience | • Customer-level information will allow Telcos to deliver personalized experience  
• Network analytics-based interventions in real-time will allow telcos to deliver superior customer experience | • Customer usage analytics  
• Customer experience management |
| Absence of device eco-system for 3G/4G/5G | • Tie-ups with device makers for rollout of devices at lower pricing to ensure usage of new technologies | • Digital collaborative tools design and setup |
| Asset tracking and management | • Digitization of network assets will allow automated tracking and bring true valuation for operators  
• Digitization will help reduce the cost of the inventory. | • Digitized network asset management |
| High O&M cost contribution from active/passive components | • Common NOC and common vendors will help reduce OPEX.  
• Common active/passive infrastructure for further cost reduction. | • Remote digital O&M and self-correcting network tools |

### EY digital solutions

- **Digitized network asset management**
- **Digitized maintenance monitoring**
- **Monetizing network data**
- **Customer experience management**

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*Global Digital Telecoms Playbook*
## Value chain deep dive

### Products and services

<table>
<thead>
<tr>
<th>Challenges</th>
<th>EY point of view</th>
<th>Solutions for digital enablement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driving product innovation</td>
<td>• Consumer needs will drive the next wave of innovation in product design and development.&lt;br&gt;• Product managers will tap the collective knowledge of a large user base to generate the next product idea through crowd sourcing and customer-driven innovation factories.&lt;br&gt;• Product design will be driven by experience needs of consumers and validated through constant experience testing and feedback looped into product development.&lt;br&gt;• Social listening will help discover which products and services are in demand.</td>
<td>• Digital innovation factory&lt;br&gt;• Product experience engineering&lt;br&gt;• Digital simulation tools&lt;br&gt;• Virtual product experience lab&lt;br&gt;• Automated feedback</td>
</tr>
<tr>
<td>Drive digital product life cycle management</td>
<td>• Seamless integration across partners and ecosystem for digitized management of products/services portfolio will enable focus on business outcomes like profitability, revenue growth and efficiency</td>
<td>• Digitize product life cycle management</td>
</tr>
<tr>
<td>Driving pricing innovation</td>
<td>• Scientific methods of price discovery based on demand elasticity will give rise to innovative pricing models.&lt;br&gt;• Telcos will also replicate freemium models.&lt;br&gt;• Telcos will develop products and offers around bundling of mobile and fixed line services to ensure lower churn.</td>
<td>• Digitized demand assessment&lt;br&gt;• Digitized product catalog</td>
</tr>
<tr>
<td>Competition from OTTs in B2B space</td>
<td>• Telcos will develop platforms and increasingly invest in newer business models to capitalize on revenue opportunities like mobile advertising, M2M, payment services etc.&lt;br&gt;• Being a provider of the IoT and personal cloud facilities positions a telco at the center of the digital consumer world, with stickiness for the other services and applications in its portfolio.&lt;br&gt;• Development and growth in these fields will be enhanced inorganically through acquisitions and partnerships.&lt;br&gt;• Common active/passive infrastructure for further cost reduction.</td>
<td>• Dynamic pricing&lt;br&gt;• M&amp;A, post-merger integration</td>
</tr>
</tbody>
</table>

### EY digital solutions

<table>
<thead>
<tr>
<th>Innovation through crowd sourcing</th>
<th>Digitized pricediscovery/new models</th>
<th>Product interface experience design</th>
<th>Pricing models</th>
</tr>
</thead>
<tbody>
<tr>
<td>EY digital solutions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Value chain deep dive

**Fulfilment, assurance and billing**

<table>
<thead>
<tr>
<th>Challenges</th>
<th>EY point of view</th>
<th>Solutions for digital enabement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building trusted billing relationship</td>
<td>• Independent wallets will continue to gain ground over the existing operator billing relationship.</td>
<td>• Mobile self service and account management</td>
</tr>
<tr>
<td>• Operators will have to move toward transparent digital means of allowing customers to manage their account.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• With advent of Customer 4.0 operators will have to look beyond digital bill delivery and recharge.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High time to market due to legacy billing system complexities and lack of integration across services</td>
<td>• Telcos old billing systems will continue to impede launch of new offers due to long configuration time for new products or services.</td>
<td>• Technology stacks and system configurations for integrated systems</td>
</tr>
<tr>
<td>• Telcos will have to simplify and upgrade billing systems to handle complexities in product bundling.</td>
<td></td>
<td>• Integrated billing system</td>
</tr>
<tr>
<td>• They will require convergent (triple-play or quad-play) billing that supports ease of configuration, supporting real-time charging and billing, and scalability.</td>
<td></td>
<td>• Digitization to enable infinite number of portfolio configurations</td>
</tr>
<tr>
<td>• This will help them keep billing costs as low as possible.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Digitized menu for customers to select/de-select a bouquet of services, simulate usage and customize plans.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently assurance is at a service/product level</td>
<td>• Customer-level assurance monitoring and reporting will be implemented by telcos; however, monetization of this investment will happen over a long term.</td>
<td>• Customer self-assurance</td>
</tr>
<tr>
<td>• Strategic prioritization and phased investment will help telcos get ROI.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fulfilment, assurance and billing**

Purchase ➤ Service provisioned ➤ Usage ➤ Bill sent ➤ Payment processing ➤ Payment complete

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**Telecoms key elements**

- Established
- Transformers
- Maturing builders
- Builders
- Pioneers

**Maturity**

---

**Challenges**

- High time to market due to legacy billing system complexities and lack of integration across services
- Building trusted billing relationship
- Currently assurance is at a service/product level

**EY point of view**

- Independent wallets will continue to gain ground over the existing operator billing relationship.
- Operators will have to move toward transparent digital means of allowing customers to manage their account.
- With advent of Customer 4.0 operators will have to look beyond digital bill delivery and recharge.
- Telcos old billing systems will continue to impede launch of new offers due to long configuration time for new products or services.
- Telcos will have to simplify and upgrade billing systems to handle complexities in product bundling.
- They will require convergent (triple-play or quad-play) billing that supports ease of configuration, supporting real-time charging and billing, and scalability.
- This will help them keep billing costs as low as possible.
- Digitized menu for customers to select/de-select a bouquet of services, simulate usage and customize plans.
- Customer-level assurance monitoring and reporting will be implemented by telcos; however, monetization of this investment will happen over a long term.
- Strategic prioritization and phased investment will help telcos get ROI.

**Solutions for digital enabement**

- Mobile self service and account management
- Technology stacks and system configurations for integrated systems
- Integrated billing system
- Digitization to enable infinite number of portfolio configurations
- Customer self-assurance

---

**EY digital solutions**

- Integrated billingsolutions
- Proactive and self-care fulfillment avenues
- Digital technology
- Digital enterprise strategy
### Value chain deep dive

**Customer interface operations**

#### Challenges

<table>
<thead>
<tr>
<th>Challenges</th>
<th>EY point of view</th>
<th>Solutions for digital enablement</th>
</tr>
</thead>
</table>
| Varied customer experience across business units and touch points | - Operators will synchronize their operations to be able to present a single face to the customer.  
- New-age digital customer touch points will always be on (web / mobile / social), leading to multiple interactions and a greater ability to influence customers.  
- Cross-channel context retention will allow customers to initiate a transaction on one touch point and complete it on another. | - Omni-channel enablement |
| Tedious manual process of acquiring customers | - Telcos will increase their digital reach and integrate their acquisition process with global customer identity databases for authentication and verification.  
- Automation to enable faster and easier customer acquisition and on boarding process.  
- Regulations will be increasingly eased to enable lower costs on digitized acquisitions. | - Digital acquisition  
- Digital supply chain transformation |
| Detecting and fixing customer experience degradation | - Currently data from digital products is used to map usage. It will also be extended to map failure points in customer experience.  
- Using customer-specific data and mapping with larger customer base data, telcos will identify common failure points and focus on fixing them proactively.  
- Identification of failure points will allow telcos to resolve the issue before it becomes a failure point for the customer and leads to a complaint. | - Customer life cycle management |
| Operators have a sales-focused approach | - As customers get more digital-savvy, the share of wallet for digital services is expanding much more than core telecom services.  
- Hence it will become imperative for telcos to shift focus from a customer acquisition to overall customer life cycle management. | - Dynamic pricing  
- M&A, Post Merger Integration |
| Share of high-cost traditional channels for customer awareness in BTL is high | - Telcos will need to develop presence across channels and control the brand image, since brand conversations and comparisons occur through a plethora of digital touch points increasingly outside of the control of brands and traditional ATL/BTL marketing methods.  
- Operators are increasingly developing intelligent insights from existing inventory of data and using it to improve cross-sell/up-sell conversions through a real-time dynamic mechanism of personalized recommendations and NBAs. | - Digital marketing  
- Brand monitoring  
- Social listening  
- Big data analytics |
## Value chain deep dive

### Talent and culture

### Telecoms key elements

- **Established**
- **Transformers**
- **Maturing builders**
- **Builders**
- **Pioneers**

### Maturity

<table>
<thead>
<tr>
<th>Talent and culture</th>
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</thead>
<tbody>
<tr>
<td><strong>Talent strategy</strong></td>
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</tbody>
</table>

### Challenges

<table>
<thead>
<tr>
<th>Challenges</th>
<th>EY point of view</th>
<th>Solutions for digital enablement</th>
</tr>
</thead>
</table>
| Attracting new talent with digital skill set | - With operator’s focus shifting on digital, telcos will hire personnel with skill set specific to digital solution implementation.  
- Telcos will hire talent based on a sourcing, screening and selection process that identifies candidates with the right knowledge, skills and behaviors to perform highly complicated digitization. | - Skills and competencies assessment |
| Automation of all employee interfaces | - Telcos will move to transform complete hire-to-retire talent life cycle management covering talent acquisition, talent development, talent retention and talent management using digital technologies. | - Talent life cycle management |
| Co existence of people with digital skill set and existing employees | - Telcos will develop specific programs and initiatives to build a digital-oriented culture across employees. | - Collaboration and productivity tool |
| Upgrading skills in a distributed environment | - Telcos will use web and mobile training modules.  
- Telcos will develop cloud solution for employees knowledge management and development (within and outside organization). | - Cloud-based knowledge management portal |
| Developing a high-performance culture with motivated employees | - Telcos will identify and develop the right organization culture inline with its values (i.e., scientifically led, patient-centric).  
- Telcos will develop scientific approach for incentive earning for employees on the right things. | - Employee gamification |
| Impart specific skills at the right time to each employee to help the company | - Improve employee performance by imparting knowledge, changing attitudes and improving skills for an increasingly mobile workforce  
- A suite of integrated knowledge database with easy access | - Virtual training models |

### EY digital solutions

- **Talent management**
- **Virtual training models**
- **Collaboration and productivity tools**
- **Knowledge management**
## Value chain deep dive

### Partner and ecosystem

<table>
<thead>
<tr>
<th>Partner and ecosystem</th>
<th>Established</th>
<th>Transformers</th>
<th>Maturing builders</th>
<th>Builders</th>
<th>Pioneers</th>
<th>Maturity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify need and search</td>
<td>▶️</td>
<td>▶️</td>
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<td>▶️</td>
<td>▶️</td>
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<td>Check feasibility</td>
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<tr>
<td>Negotiate and contract</td>
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<td>On board</td>
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<tr>
<td>Operations management</td>
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<tr>
<td>Settlements and payments</td>
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<tr>
<td>Manage partner portfolio</td>
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</table>

### Challenges

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</table>
| Building a long-term strategy for partner selection and grooming | • Telcos will use scientific approach to partner selection and onboarding by use of quantitative and qualitative techniques.  
• Telcos can quickly skip the learning curve and provide a great digital experience to customers through careful selection of partners.  
• Partner grooming and development will be a long term process with partners evolving along with the organization. | • Partner selection framework  
• Partner contracting                                                                                                                                                    |
| Creating an operator-partner ecosystem         | • The customer experience and product performance can drastically change for better or for worse as soon as the customer steps out of the telco environment and goes into the partner environment.  
• A better overall experience can be created by tight integration of the telco and partner systems and processes.                                                      | • Data security  
• Resource demand forecasting  
• Partner IT system integration                                                                                                                                             |
| Creating digital awareness among partners     | • Telcos can build partner capability through long-term collaborative capability development in digital spaces.  
• Telcos will involve partners and their systems in earlier stages of process digitization.                                                                                                                        | • Digitization of partner interfaces                                                                                                                                              |
| Cost reduction in operations through partner efficiency improvement | • Service providers should ensure partner capability development through training programs and IT implementation support for key systems like ERP to ensure high performance levels. | • Digital training                                                                                                                                                                |
| Seamless partner payouts                      | • Timely payments are essential to ensure positive partner relationship.  
• Integration of variables such as product returns, performance penalties, tax changes, etc. in real time will enable one-time accurate payouts. | • Partner performance scorecard                                                                                                                                                  |

### EY digital solutions

- Digitization of partner interfaces
- Partner performance management
- Partner IT systems Integration
- Demand forecasting
## Value chain deep dive

### Enterprise technology

<table>
<thead>
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<th>Challenges</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Legacy stacks leading to disparate IT landscape</td>
<td>While the Maturing builders and Builders have the edge in choosing a pre-integrated stack, the Established and Transformers will have to adopt a organization-wide transformation to leapfrog to the latest capabilities as a unified goal.</td>
<td>Digital technology road map, Mobility solutions for enterprise</td>
</tr>
<tr>
<td>Disintegrated network and IT elements in the age of convergence</td>
<td>With the advent of IP-based networking, IT-network convergence is an imperative. Traditional boundaries of IT and Network need to be made porous to ensure a smooth transition to a well-integrated platform. Increasingly, CIO and CTO positions will converge to enable unified control.</td>
<td>Digital architecture for future Telco</td>
</tr>
<tr>
<td>Coexistence of people with digital skill set and existing employees</td>
<td>Telcos will develop specific programs and initiatives to build a digital-oriented culture across employees.</td>
<td>Collaboration and productivity tool</td>
</tr>
<tr>
<td>Transform IT to provide capabilities to business based on cloud</td>
<td>Cloud solutions have gone beyond application hosting and storage. Telecoms players need to re-position themselves as solution providers, widening their portfolio with personalized problem solving for their enterprise customers.</td>
<td>Digital innovation factory, Go-to-market approach</td>
</tr>
<tr>
<td>Use of Big Data and analytics for newer revenue streams</td>
<td>The established players have the history, information, connection and relationship with the customer to monetize the wealth of data residing on their network and IT systems. More and more advertisers are turning to telecoms companies as capturers of consumer movement. Transformers have already made an initial impact in seizing these opportunities and partnering to open new revenue streams.</td>
<td>Analytics and insights, complex customer interactions analysis, Digital risk evaluation, digital diagnostics tools</td>
</tr>
</tbody>
</table>

### Enterprise technology value chain

- **Define enterprise technology strategy**
- **Plan design framework**
- **Design test development**
- **Testing**
- **Execution**
- **Settlements and payments**
- **Maintenance, optimization and expansion**

---

**EY digital solutions**

- **Cloud solutions**
- **Innovation factory**
- **Digital technology**
- **Big data analytics**
# Value chain deep dive

## Devices

### Access and devices

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</table>
| Varied product performance across devices | • The spurt of different OS types in the past few years has led to an increase in fragmentation of OS/device combinations.  
• This means that each product that is released needs to be optimized as per the device, which is a cost to the company.  
• Telcos can use their experience and infrastructure capability to take a lead and help OTTs in identifying focus areas for optimization.  
• Integrated product testing will also include elements like network variations. | • Mobile testing lab  
• Test scenarios  
• Issue monitoring  
• Proactive care  
• O TA services |
| Inability to abstract device from network for newer IP based technologies | • Usually when customers face loss of experience due to device/interface issues they will reach out to telecoms operator to try and resolve issues.  
• This adds an unnecessary strain on the company resources to try to resolve device issues.  
• Operators will move towards integrated testing of devices before launch to eliminate issues at source. | • Collaborated testing  
• Converged connectivity solutions (EAP SIM/intelligent client)  
• Selective converged CRM |
| Less ARPU from M2M | • Supporting an M2M eco-systems and their use in critical applications will require operators to design new processes and systems for provisioning, real-time monitoring and support and billing/reporting.  
• Operators will attempt to find higher throughput applications of M2M to increase revenues. | • Cloud-based solutions  
• OTA services  
• Innovative M2M services |
| Transform IT to provide capabilities to business based on cloud | • Cloud solutions have gone beyond application hosting and storage. Telecoms players need to re-position themselves as solution providers widening their portfolio with personalized problem solving for their enterprise customers. . | • Digital innovation factory  
• Go-to-market approach |
| Churn (multi-SIM) possibility due to fragmented device usage revenue streams | • Consumers have started using multiple device types (mobile phones / tablets / laptops / wearables etc.) for use at different types of the day and for different purposes.  
• Each device is an opportunity for a competitor to start a relationship with the customer. Telcos will have to identify and protect against the possibility of churn through these means. | • Customer life cycle management  
• Device management  
• Single sign-on  
• Device security |

---

**EY digital solutions**

- **Device management** — consumption and connectivity devices
- **Converged access solution**
- **Proactive care** — devices and network
- **Processes and systems designed to support M2M services**
## Value chain deep dive

### Regulatory

**Access and devices**

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</thead>
</table>
| Meeting consumer protection norms | • Stringent focus of regulators for meeting consumer protection rules, privacy and security  
• Dispute handling, managing customer experience, pricing transparency, consumer data protection | • Information security maturity assessment and road map,  
• Digital rights management capabilities |
| Physical filing-based compliance | • Consortia lobby to introduce digital compliance, making Telcos paper-free from all three perspectives – Outside-in (customer), inside-in (employee) and inside-out (vendor) | • Digital compliance management |
| New digital tax issues | • Emerging trend of new rules for geography-specific taxation of digital income | • Digital tax management |
| Meeting government demands for policing | • Governments to look at telco for assisting in law enforcement for their:  
  • Surveillance needs and Data retention  
  • Intellectual property rights violations, such as blocking of torrents | • Consumer data protection  
• Digital law for data privacy |
| Increasing regulations for new services | • Operators to be increasingly asked to follow new regulations for new services like:  
  • Regulating digital content  
  • Regulations for new technologies – M2M, SDN, etc.  
  • Regulations for data protection in cloud | • Digital regulatory compliance processes |
| Regulatory uncertainty on growth of OTT services | • Regulators globally are evolving their position on neutrality of access  
  • Telcos to target partnership with OTTs, new business models and regulatory scrutiny | • Social listening to understand consumer sentiments |
| Managing costly regulatory compliance in a cost-effective manner | • Telcos to comply with regulations by building concrete process and KPIs  
• Improved compliance automation to manage multiple regulations and standards | • Digital regulatory optimization strategy |

**Device management – consumption and connectivity devices**

- EY digital solutions

**Digital risk and cybersecurity**

**Digital tax**

**Digital enterprise strategy**
Solutions and mapping to digital offerings
EY digital solution offering

Introduction

1. 11 distinct offerings address all digital challenges across sectors and domains.

2. Each offering is a suite of solutions tailored to suit the needs of the client.

3. Solutions are modularized to prioritize point solutions over holistic approaches.

4. Benefits realization frameworks are embedded in each solution to ensure business outcomes are realized.

5. EY’s recent acquisitions bolster the tools and technology partnerships required to digitize end to end.
Digital solutions for telecoms

Mapped to EY digital framework

Digital risk and cyber security
- Digital risk and cyber security
- Consumer data protection
- Device security

Digital law
- Digital law for data privacy
- Digital regulatory compliance management
- Digital compliance optimization

Digital tax
- Tax advisory for cross-border services
- Tax guidance for new services like M2M, cloud, etc.

Digital supply chain
- Digital supply chain management
- Digitize partner interfaces
- Partner performance management

Digital operations
- Customer life cycle management
- Digital marketing
- Social listening and analytics
- Digital acquisition
- Digital distribution

Digital marketing
- Digital marketing
- Social listening and analytics

Digital technology
- Digital technology road map
- Digital architecture for future telco
- Integrated billing solutions
- Cloud solutions
- Network asset management
- Monetizing network data
- Digitized network monitoring
- Device management
- Converged access solution
- Go-to-market approach
- Mobility solutions for enterprise

Experience design
- Customer experience management
- Self care
- Proactive customer care
- Simulation tools
- Automated feedback
- Test scenarios

Digital transactions
- Due diligence
- M&A
- Post-merger integration

Digital enterprise strategy
- Enterprise operating model
- Big data, analytics and insights
- Complex customer interaction analysis
- Network cost optimization
- Skills and competencies assessment
- Talent management
- Knowledge management
- Collaboration and productivity tools
- Omni-channel enablement
- Virtual training

Sensing
- Digital innovation factory
- Product experience engineering
- Digitized product life cycle management
- Digitized price/model discovery
- Employee gamification
- Crowdsourcing

Analyze
- Digital ledger management

Create
- Digital accounting

Incubate
- Innovation

Activate
- Business agility realized

Monitor
- Digital risk and cybersecurity

Grow
- Demand forecasting
- Digital content distribution
- Digital asset management

Optimize
- Business agility realized
The future of telecoms

*Deploying tailored digital solution...delivering accelerated solutions*

<table>
<thead>
<tr>
<th>Critical solutions</th>
<th>Advisory</th>
<th>Transactions</th>
<th>Tax</th>
<th>Assurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enablers</td>
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<tr>
<td>Good to have</td>
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<td>Not relevant</td>
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</table>

**Network convergent technology and infrastructure**

<table>
<thead>
<tr>
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<th>Digital enterprise strategy</th>
<th>Digital transactions</th>
<th>Experience design</th>
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<th>Digital operations</th>
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<th>Digital risk and cyber security</th>
<th>Digital accounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shorter life cycle of new technologies (2G/3G/4G)</td>
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<tr>
<td>2</td>
<td>How to use customer data and insights for differentiated customer experience</td>
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<td>3</td>
<td>Absence of device ecosystem for 3G/4G/5G</td>
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<tr>
<td>4</td>
<td>Asset tracking and management</td>
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<td>5</td>
<td>High O&amp;M cost contribution from active/passive components</td>
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Deploying tailored digital solutions...

- Grow
- Optimize
- Protect
# The future of telecoms

*Deploying tailored digital solution...delivering accelerated solutions*

## Critical solutions

| Enablers | Good to have | Not relevant |

## Products and services

<table>
<thead>
<tr>
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<tr>
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<tr>
<td><strong>Protect</strong></td>
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</table>

### Critical solutions

- **Enablers**
- **Good to have**
- **Not relevant**

### Products and services

1. **Driving product innovation**
   - Innovation
   - Digital enterprise strategy
   - Digital transactions
   - Experience design
   - Digital technology
   - Digital operations
   - Digital supply chain
   - Digital tax
   - Digital law
   - Digital risk and cyber security
   - Digital accounting

2. **Driving pricing innovation**
   - Innovation
   - Digital enterprise strategy
   - Digital transactions
   - Experience design
   - Digital technology
   - Digital operations
   - Digital supply chain
   - Digital tax
   - Digital law
   - Digital risk and cyber security
   - Digital accounting

3. **Competition from OTTs in B2B space (e.g., Skype for business)**
   - Innovation
   - Digital enterprise strategy
   - Digital transactions
   - Experience design
   - Digital technology
   - Digital operations
   - Digital supply chain
   - Digital tax
   - Digital law
   - Digital risk and cyber security
   - Digital accounting
The future of telecoms

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</tbody>
</table>

<table>
<thead>
<tr>
<th>Fulfillment and billing</th>
<th>Innovation</th>
<th>Digital enterprise strategy</th>
<th>Digital transactions</th>
<th>Experience design</th>
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<th>Digital operations</th>
<th>Digital supply chain</th>
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<th>Digital risk and cyber security</th>
<th>Digital accounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Building trusted billing relationship</td>
<td>Yellow</td>
<td>Yellow</td>
<td>Green</td>
<td>Green</td>
<td>Yellow</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>High time to market due to legacy billing system complexities and lack of integration across services</td>
<td>Yellow</td>
<td>Green</td>
<td>Yellow</td>
<td>Green</td>
<td>Green</td>
<td></td>
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<tr>
<td>3</td>
<td>Currently assurance is at a service/product level</td>
<td>Yellow</td>
<td>Green</td>
<td>Yellow</td>
<td>Green</td>
<td>Green</td>
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</tbody>
</table>
### The future of telecoms

*Deploying tailored digital solution...delivering accelerated solutions*

#### Critical solutions
- **Enablers**
- **Good to have**
- **Not relevant**

#### Customer interface operations

<p>| | | | | | | | |</p>
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</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>Varied customer experience across business units and touch points</td>
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</tr>
<tr>
<td></td>
<td>2</td>
<td>Tedious manual process of acquiring customers</td>
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<td></td>
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<tr>
<td></td>
<td>3</td>
<td>Detecting and fixing customer experience degradation</td>
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<td></td>
<td>4</td>
<td>Operators have a sales-focused approach</td>
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<td></td>
<td>5</td>
<td>Share of high-cost traditional channels for customer awareness in BTL is high</td>
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</tr>
</tbody>
</table>

#### Deploying cross service line digital solutions

**Advisory** | **Transactions** | **Tax** | **Assurance**

- **Grow**
- **Optimize**
- **Protect**

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**Global Digital Telecoms Playbook**

- **Customer interface operations**
- **Critical solutions**
- **Enablers**
- **Good to have**
- **Not relevant**

---

35 | Global Digital Telecoms Playbook
# The future of telecoms

*Deploying tailored digital solution...delivering accelerated solutions*

## Critical solutions
- **Enablers**
- **Good to have**
- **Not relevant**

## Talent and culture

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<th>Transactions</th>
<th>Tax</th>
<th>Assurance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Innovation</td>
<td>Digital enterprise strategy</td>
<td>Digital transactions</td>
<td>Experience design</td>
</tr>
</tbody>
</table>

### Enablers

1. **Attracting new talent with digital skill set**

2. **Coexistence of people with digital skill set and existing employees**

3. **Upgrading skills in a distributed environment**

4. **Developing a high-performance culture with motivated employees**

5. **Impart specific skills at the right time to each employee to help the company**

### Good to have

### Not relevant
The future of telecoms

*Deploying tailored digital solution...delivering accelerated solutions*

### Critical solutions

<table>
<thead>
<tr>
<th>Enablers</th>
<th>Good to have</th>
<th>Not relevant</th>
</tr>
</thead>
</table>

### Partner and ecosystem

<table>
<thead>
<tr>
<th></th>
<th>1 Building a long-term strategy for partner selection and grooming</th>
<th>2 Creating an operator-partner ecosystem</th>
<th>3 Creating digital awareness among partners</th>
<th>4 Cost reduction in operations through partner efficiency improvement</th>
<th>5 Seamless partner payouts</th>
</tr>
</thead>
</table>

### Deploying cross service line digital solutions

- **Advisory**
  - Innovation
  - Digital enterprise strategy
  - Digital transactions
  - Experience design
  - Digital technology
  - Digital operations
  - Digital supply chain
  - Digital tax
  - Digital law
  - Digital risk and cyber security
  - Digital accounting

- **Transactions**
  - Grow
  - Optimize
  - Protect
The future of telecoms

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### Critical solutions
- **Enablers**
- **Good to have**
- **Not relevant**

### Enterprise technology

<table>
<thead>
<tr>
<th></th>
<th>Advisory</th>
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<td></td>
<td><strong>Deploying cross service line digital solutions</strong></td>
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<tr>
<td></td>
<td>Grow</td>
<td>Optimize</td>
<td></td>
<td>Protect</td>
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### Not relevant

<table>
<thead>
<tr>
<th></th>
<th>Innovation</th>
<th>Digital enterprise strategy</th>
<th>Digital transactions</th>
<th>Experience design</th>
<th>Digital technology</th>
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<th>Digital risk and cyber security</th>
<th>Digital accounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Legacy stacks leading to disparate IT landscape</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
</tr>
<tr>
<td>2</td>
<td>Disintegrated network and IT elements in the age of convergence</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
</tr>
<tr>
<td>3</td>
<td>Transform IT to provide capabilities to business based on cloud</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
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<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
</tr>
<tr>
<td>4</td>
<td>Use of big data and analytics for newer revenue streams</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
<td>Good to have</td>
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</table>
The future of telecoms
*Deploying tailored digital solution...delivering accelerated solutions*

<table>
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<tr>
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<td></td>
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<tr>
<td>Good to have</td>
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<tr>
<td>Not relevant</td>
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</table>

### Devices

<table>
<thead>
<tr>
<th></th>
<th>Innovation</th>
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<th>Digital risk and cyber security</th>
<th>Digital accounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Varied product performance across devices</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>2</td>
<td>Inability to abstract device from network for newer IP-based technologies</td>
<td>Green</td>
<td>Yellow</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>3</td>
<td>Less ARPU from M2M</td>
<td>Green</td>
<td>Orange</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>4</td>
<td>Churn (multi-SIM) possibility due to fragmented device usage</td>
<td>Yellow</td>
<td>Orange</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
</tr>
<tr>
<td>5</td>
<td>Varied product performance across devices</td>
<td>Orange</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
<td>Green</td>
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The future of telecoms
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<table>
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<tr>
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<td></td>
</tr>
<tr>
<td>Grow</td>
<td>Optimize</td>
<td>Protect</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Regulatory</th>
<th>Innovation</th>
<th>Digital enterprise strategy</th>
<th>Digital transactions</th>
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<th>Digital law</th>
<th>Digital risk and cyber security</th>
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</thead>
<tbody>
<tr>
<td>1 Meeting consumer protection norms</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Meeting government demands for policing</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Increasing regulations for new services</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Regulatory uncertainty on growth of OTT services</td>
<td></td>
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<tr>
<td>5 Managing costly regulatory compliance in a cost-effective and manner</td>
<td></td>
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</tbody>
</table>
Digital Maturity Modeling toolkit
At EY we work collaboratively, bringing together experience across advisory, transaction, tax and assurance to deliver digital services. EY has developed an extensive set of tools and frameworks to enable the digital journey for customers.

<table>
<thead>
<tr>
<th>#</th>
<th>Tool/Framework</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Digital Transformation</td>
<td>Framework to approach digital</td>
</tr>
<tr>
<td>2</td>
<td>Digital Portfolio Maturity Assessment</td>
<td>Maturity model toolkit</td>
</tr>
<tr>
<td>3</td>
<td>Social Media and Digital Diagnostics Tool</td>
<td>Tool to assess the digital and social media journey</td>
</tr>
<tr>
<td>4</td>
<td>Customer Analytics Framework</td>
<td>Customer Insights Tool</td>
</tr>
<tr>
<td>5</td>
<td>Crimson Hexagon</td>
<td>Social listening and analytics tool</td>
</tr>
<tr>
<td>6</td>
<td>Customer RoI</td>
<td>Parameters to be considered while deriving RoI</td>
</tr>
<tr>
<td>7</td>
<td>SEO Framework</td>
<td>Parameters for SEO strategy</td>
</tr>
<tr>
<td>8</td>
<td>Digital Realization Framework</td>
<td>Framework for digital transformation</td>
</tr>
<tr>
<td>9</td>
<td>Social Media Governance</td>
<td>SM governance framework</td>
</tr>
<tr>
<td>10</td>
<td>EY Social Community Maturity Model</td>
<td>Assess social media maturity</td>
</tr>
<tr>
<td>11</td>
<td>Channel Engagement Maturity</td>
<td>Assess how efficiently engagement in and handoffs between distribution channels happens</td>
</tr>
<tr>
<td>12</td>
<td>Innovation and Digital Realization™ Framework</td>
<td>Customer engagement and innovation questionnaire</td>
</tr>
<tr>
<td>13</td>
<td>Digital Diagnostic Tool and Methodology</td>
<td>Digital diagnostics to identify interventions and build road map</td>
</tr>
</tbody>
</table>
# Maturity model toolkit: a snapshot

<table>
<thead>
<tr>
<th>Maturity stage</th>
<th>Business process characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Branding</strong></td>
<td><strong>Marketing: Campaigns, communication, customer insight and analytics</strong></td>
</tr>
<tr>
<td>Developing</td>
<td>1. Use of automated sentiment analytics across social media to track and understand the attitude of consumers toward brand.</td>
</tr>
<tr>
<td></td>
<td>2. Consumer is the co-creator of the brand.</td>
</tr>
<tr>
<td></td>
<td>3. Global benchmarks and best practices as a KPI for measuring brand sentiment.</td>
</tr>
<tr>
<td></td>
<td>4. Consumers are brand advocates and have a high loyalty and affiliation with the brand touch points.</td>
</tr>
<tr>
<td>Developing</td>
<td>1. Integrated customer analytics, customer segmentation and targeting, campaign development and management by using digital CRM tools.</td>
</tr>
<tr>
<td></td>
<td>2. Strive to achieve a uniform customer experience across, platforms, devices, channels throughout customer life cycle.</td>
</tr>
<tr>
<td></td>
<td>3. May have recently established digital properties across channels and platforms.</td>
</tr>
<tr>
<td></td>
<td>4. Recommended to online visitors/customers by using online behavioural analysis and “mood recognition” technologies.</td>
</tr>
<tr>
<td>Developing</td>
<td>1. May have recently established digital properties across channels and platforms.</td>
</tr>
<tr>
<td></td>
<td>2. Push information about company, products and services through social media (Facebook, Twitter) and online advertising majors (Google, Yahoo).</td>
</tr>
<tr>
<td></td>
<td>3. Products, services and new product development are recommended to online visitors/customers by using online behavioural analysis and “mood recognition” technologies.</td>
</tr>
<tr>
<td>Developed</td>
<td>1. May broadcast information about our company and offerings through mass email, our website and social media presence.</td>
</tr>
<tr>
<td></td>
<td>2. Would have recently initiated digital journey for brand impact.</td>
</tr>
<tr>
<td>Developed</td>
<td>1. Not enough investments in creating digital touch points</td>
</tr>
<tr>
<td></td>
<td>2. Yet to initiate digital journey</td>
</tr>
<tr>
<td></td>
<td>3. Heavy dependencies on ATL and traditional media</td>
</tr>
</tbody>
</table>
## Maturity model toolkit: a snapshot

<table>
<thead>
<tr>
<th>Maturity stage</th>
<th>Business process characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Sales</strong></td>
</tr>
<tr>
<td><strong>Basic</strong></td>
<td>1. Target product and service recommendations to online visitors/customers by using online</td>
</tr>
<tr>
<td></td>
<td>behavioral analysis and &quot;mood recognition&quot; technologies.</td>
</tr>
<tr>
<td></td>
<td>2. Selling via time-based offers and cyber couponing on social media</td>
</tr>
<tr>
<td></td>
<td>3. Monitor social media (sentiment analysis) for purchasing signals and trigger related offers to</td>
</tr>
<tr>
<td></td>
<td>customer segments across all digital and non-digital channels</td>
</tr>
<tr>
<td><strong>Collaborative</strong></td>
<td>1. Use of innovative servicing channels like intelligent FAQs, virtual assistants, click-to-chat</td>
</tr>
<tr>
<td></td>
<td>and click-to-call.</td>
</tr>
<tr>
<td></td>
<td>2. Encourage self-help peer-to-peer forums for customer service and queries.</td>
</tr>
<tr>
<td></td>
<td>3. Proactively scan web and reach out to customer for any negative sentiments, customer</td>
</tr>
<tr>
<td></td>
<td>requirements and other fulfillment.</td>
</tr>
<tr>
<td></td>
<td>4. Establish social CRM KPIs and business objectives focused on lowering cost of servicing.</td>
</tr>
<tr>
<td><strong>Developing</strong></td>
<td>1. Gamification for training, making work fun and changing behaviors.</td>
</tr>
<tr>
<td></td>
<td>2. Internal social network for co-creating, sharing, building sense of community, building</td>
</tr>
<tr>
<td></td>
<td>employee loyalty and networking (Yammer).</td>
</tr>
<tr>
<td></td>
<td>3. Crisis Matrix and ORM on Digital Media.</td>
</tr>
<tr>
<td></td>
<td>4. Lack of Governance Framework, Escalation Matrix, Sentiment analysis (Twitter sentiment, social</td>
</tr>
<tr>
<td></td>
<td>eyez).</td>
</tr>
<tr>
<td></td>
<td><strong>Customer care</strong></td>
</tr>
<tr>
<td></td>
<td>1. Digital fulfillment and new customer acquisition (CAF) via digital channels.</td>
</tr>
<tr>
<td></td>
<td>2. No dependencies on brick-and-mortar shops for subscribing to the network, change plans /</td>
</tr>
<tr>
<td></td>
<td>tariff, buy VAT or update personal details.</td>
</tr>
<tr>
<td></td>
<td>3. Salesforce equipped with smartphones and tablets to perform sales tasks and process orders and</td>
</tr>
<tr>
<td></td>
<td>payments on the go or at physical locations</td>
</tr>
<tr>
<td><strong>Established</strong></td>
<td>1. Customers can interact with the content posted about company or offerings (Facebook “Likes,”</td>
</tr>
<tr>
<td></td>
<td>comments) and share it on their social networks (Facebook, LinkedIn) and via email.</td>
</tr>
<tr>
<td></td>
<td>2. Review comments received on web and social media presence (Facebook, Twitter) and via email to</td>
</tr>
<tr>
<td></td>
<td>create customer satisfaction reports.</td>
</tr>
<tr>
<td></td>
<td><strong>Connected workforce</strong></td>
</tr>
<tr>
<td></td>
<td>1. GM for digital and laggard in digital. No clear leadership for digital and lagging behind</td>
</tr>
<tr>
<td></td>
<td>peers.</td>
</tr>
<tr>
<td></td>
<td>1. Based on product strategy, the brand recommends complementary products or services via sales</td>
</tr>
<tr>
<td></td>
<td>force, when users interact with digital channels</td>
</tr>
<tr>
<td><strong>Leading</strong></td>
<td>1. Gameification for training, making work fun and changing behaviors.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>eyez).</td>
</tr>
<tr>
<td></td>
<td><strong>Digital HR</strong></td>
</tr>
<tr>
<td></td>
<td>1. Seamless integration between career website and other job search sites (LinkedIn, Monster.com)</td>
</tr>
<tr>
<td></td>
<td>to enable prospective employees to apply using existing social networks credentials.</td>
</tr>
<tr>
<td></td>
<td>2. Leverage simulated reality training to improve time-to-competency by aligning training</td>
</tr>
<tr>
<td></td>
<td>efficiency and the employee interests and skills.</td>
</tr>
</tbody>
</table>

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<th>Maturity stage</th>
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<tr>
<td><strong>Leading</strong></td>
<td>1. Leverage telepresence/video</td>
</tr>
<tr>
<td></td>
<td>conferencing capabilities</td>
</tr>
<tr>
<td></td>
<td>to all employees to support</td>
</tr>
<tr>
<td></td>
<td>remote collaboration and reduce</td>
</tr>
<tr>
<td></td>
<td>travel.</td>
</tr>
<tr>
<td></td>
<td>2. Provide online tools for</td>
</tr>
<tr>
<td></td>
<td>collaboration, instant</td>
</tr>
<tr>
<td></td>
<td>messaging project management,</td>
</tr>
<tr>
<td></td>
<td>sharing ideas, knowledge base</td>
</tr>
<tr>
<td></td>
<td>among teams and individuals.</td>
</tr>
<tr>
<td><strong>Established</strong></td>
<td>1. Organize interactive online</td>
</tr>
<tr>
<td></td>
<td>training sessions using</td>
</tr>
<tr>
<td></td>
<td>WebEx and GoToMeeting.</td>
</tr>
<tr>
<td><strong>Collaborative</strong></td>
<td>1. Communicate company news,</td>
</tr>
<tr>
<td></td>
<td>mission, values and life</td>
</tr>
<tr>
<td></td>
<td>through social media and blogs</td>
</tr>
<tr>
<td></td>
<td>and build communities to</td>
</tr>
<tr>
<td></td>
<td>engage with prospective</td>
</tr>
<tr>
<td></td>
<td>employees.</td>
</tr>
<tr>
<td><strong>Developing</strong></td>
<td>1. Provide laptops and mobile</td>
</tr>
<tr>
<td></td>
<td>phones to some employees,</td>
</tr>
<tr>
<td></td>
<td>on a discretionary basis.</td>
</tr>
<tr>
<td></td>
<td>2. Some meetings via conference</td>
</tr>
<tr>
<td></td>
<td>calls.</td>
</tr>
<tr>
<td><strong>Basic</strong></td>
<td>1. Posts new positions on career</td>
</tr>
<tr>
<td></td>
<td>website or internet job</td>
</tr>
<tr>
<td></td>
<td>boards (Monster.com).</td>
</tr>
<tr>
<td></td>
<td>2. Standard application process</td>
</tr>
<tr>
<td></td>
<td>via career website.</td>
</tr>
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<td></td>
<td>3. Face-to-face interviews and</td>
</tr>
<tr>
<td></td>
<td>training courses.</td>
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</tbody>
</table>

1. Based on product strategy, the brand recommends complementary products or services via sales force, when users interact with digital channels.
## Case studies

<table>
<thead>
<tr>
<th>Client</th>
<th>Background</th>
<th>Our Contribution</th>
</tr>
</thead>
</table>
| Tier 1 European operator | - The client is the No. 3 operator in France with 7,500 employees, 650 branded shops and 12 million customers.  
- Beyond the price war since the arrival of Free on the mobile market, the client wants to differentiate through digital CE.  
- The client wants to adapt its offers, process and organization to fast-changing customer demands and expectations in the new digital paradigm: customization, self-sufficiency, touch point consistency, multi-screen and socialization. | - Understanding of the customer behaviors on the main customers’ touch points (physical shops, call center, dematerialized channels, etc.)  
- Very fast decision-making based on the simplification of the customer experience  
- New methodologies of project management, from “the customer stories” to the “Minimum Viable Product” with a three month cycle to assist in implementation |
| Tier 1 operator in New Zealand | - The client engaged EY with an intent to shift the customer service paradigm through digitization in face of declining market dominance. | - Transformation of governance of digital channels  
- Key risks and controls to manage digital interfaces  
- Streamlining social media channels |
| Greenfield telecoms operator in India | - The client was deploying a large-scale digitization project that will revolutionize telecoms in the country.  
- EY was engaged to design the GTM strategy and a digital operating model for customer operations. | - Significant lead time reduction for activation  
- Paperless activation a first in India  
- Customer experience as a differentiator using digital approach  
- Designed digital concepts |
| Tier 1 operator in Australia | - The client wanted to deliver significant productivity benefits and improve customer service to achieve competitive advantage in the marketplace.  
- The wider client program (Project New) involved all the major business units within the organization, whereas this engagement relates only to the Mobiles, Broadband and Bundles product offerings. | - Assisted in delivering significant, quantified benefits identified through process redesign with annualized benefits of approximately $650m achieved through productivity improvements and reductions in costs, transaction times, variance and rework |
EY global advisors

**Prashant Singhal**, Global Telecoms Leader
Industry expert, leading transformations for operations and selection, pricing, distribution and launch strategy

**Amit Sachdeva**, Global Telecoms Advisory Leader
Industry advisor, leading transformations for operations and selection, pricing, distribution and launch strategy

**Robert Heukamp**, Executive Director, France
Strategic transformation projects in telecoms and media sector, pushing topics like 4G, FTTH, IPTV, DVB-T, etc.

**Vincent Douin**, Executive Director, France
15 years of experience in telecoms, with capabilities/experience in emerging markets, marketing and sales strategy and go-to-market

**Adrian Baschnonga**, Associate Director, UK
Lead analyst at Global telecoms center, responsible for EY’s thought leadership output

**GK Anand**, Director, India
Customer experience and service strategy design, business-wide cost reduction, IT strategy and transformation

**Frederic Huet**, Partner, UK
Convergent strategies for both telecoms and Media, as well as due diligence and pre-due diligence

**Bart Van Droogenbroek**, Global Telecoms Tax Leader, Luxembourg
Supply chain management, as well as financing, holding and intellectual property structures through Luxembourg intermediate entities

**Praveen Shankar**, Partner, UK
Leads the UK and Ireland supply chain team in the telecoms, media and technology industry sector

**Anurag Malik**, Partner, India
A decade of HR consulting experience with CEOs and HR heads of more than 100 organizations globally and across almost all sectors

**Joongshik Wang**, Partner, Singapore
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**Shilpa Singhai**, Senior Manager, India
Industry expert, leading transformations for operations and selection, pricing, distribution and launch strategy
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Industry expert, leading transformations for operations and selection, pricing, distribution and launch strategy

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Experienced in product management, customer experience and sales, with a focus on digital products

Kumarmangalam Moondra, Senior Consultant, India
Experience in GTM, cost management, process development and customer experience transformation in telecoms

Akanksha Waingankar, Senior Consultant, India
Experience in leading the sales process for B2B services, including strategy development and salesforce training in telecoms

Parishrut Jani, Senior Consultant, India
Experience in digital and social media, delivering strategy, planning and execution with analytics

Digital Product Service
Digitized Processes

Digital Sales and Distribution

Digital Marketing
## Glossary

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Term</th>
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<tbody>
<tr>
<td>ARPU</td>
<td>Average Revenue Per User</td>
</tr>
<tr>
<td>CSP</td>
<td>Communication Service Provider</td>
</tr>
<tr>
<td>EAP</td>
<td>Extensible Authentication Protocol</td>
</tr>
<tr>
<td>IoT</td>
<td>Internet Of Things</td>
</tr>
<tr>
<td>M2M</td>
<td>Machine To Machine</td>
</tr>
<tr>
<td>MACD</td>
<td>Modify Add Create Delete</td>
</tr>
<tr>
<td>MVNO</td>
<td>Mobile Virtual Network Operator</td>
</tr>
<tr>
<td>NBA</td>
<td>Next Best Action</td>
</tr>
<tr>
<td>NOC</td>
<td>Network Operations Center</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>Operations and Maintenance</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Term</th>
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<tbody>
<tr>
<td>OTA</td>
<td>Over-The-Air</td>
</tr>
<tr>
<td>OTT</td>
<td>Over-The-Top</td>
</tr>
<tr>
<td>P2P</td>
<td>Peer-To-Peer</td>
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<tr>
<td>PAYG</td>
<td>Pay As You Go</td>
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<tr>
<td>PMI</td>
<td>Post Merger Integration</td>
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<tr>
<td>SDN</td>
<td>Software Defined Network</td>
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<tr>
<td>SEO</td>
<td>Search Engine Optimization</td>
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<tr>
<td>VAS</td>
<td>Value Added Services</td>
</tr>
<tr>
<td>VOC</td>
<td>Voice Of Customer</td>
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<tr>
<td>WAP</td>
<td>Wireless Application Protocol</td>
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