



# Fast-Tracking Digital: A Blueprint for Communications Services Providers

---

By following a pragmatic, viable plan, CSPs can accelerate true digital transformation.

## Executive Summary

For communications services providers (CSPs), becoming a digital business is no longer a choice; it's essential for remaining relevant and competitive. Today's customers expect best-in-class, omnichannel experiences that simplify and personalize communications and transactions. When it comes to digital transformation, the question isn't if to start, but how and where. To find the answer, CSPs must look at the wider landscape and ask:

- What forces are shaping the industry, and what challenges will they bring?
- What strategic priorities can address these issues?
- How can a new delivery model accelerate the launch of new digital services?
- What's the right revenue-generating, data-powered marketing model for those services?
- How can we use these insights to enable a full digital transformation?

This white paper presents an actionable, pragmatic blueprint that CSPs can use as they shift their role from communications services provider to digital services provider (DSP). By combining

advances in human science and technologies, companies can remove the costs of legacy architectures, compete effectively with over-the-top (OTT) players, and realize profitable growth.



Today's customers expect best-in-class, omnichannel experiences that simplify and personalize communications and transactions.

---

## FORCES SHAPING & CHALLENGING THE INDUSTRY

When compared with other industries, CSPs face powerful headwinds. They lag behind their counterparts in other sectors, both in current performance and strategic positioning. These issues can be traced in part to the CSP industry's poor standing in the S&P 500 Index year on year for the past ten years. Yet in some markets, prospects for the industry have never looked better. Numerous developments are driving dramatic changes within the CSP space – disrupting established value chains and business models. Still, the same trends are opening non-traditional growth prospects and creating new opportunities for industry players.

Disruptive technologies such as OTT video streaming and the Internet of Things' (IoT) smart home devices, are at the forefront of this change. Indeed, these systems now form the core of every telco's capabilities. And since they play a major role in driving new customer experiences and engagement models, these capabilities represent a potentially huge new revenue source for carriers.

Nonetheless, as digital technologies become more ubiquitous, CSPs find themselves mired in legacy technologies, including business support systems (BSS) and operations support systems

(OSS). This predicament can be the result of mergers and acquisitions, compartmentalized approaches, a lack of architecture governance and IT strategies, or failure to prioritize, fund, and modernize the IT infrastructure in a thoughtful, holistic manner.

The complexity of BSS and OSS applications has also increased due to new technologies, solutions, and services. Business leaders must therefore be extremely careful to ensure that their key performance indicators (KPIs) align with changes in their technology strategies and investments. Even so, in our view many CSPs across Europe still have a long way to go in their digital transformation journey.

Yet this transformation is essential. CSPs rightly want to differentiate their customers' experiences, but in order to achieve that objective, they need to increase their reliance on analytics to gain actionable insights, deploy products faster through a digital-ready infrastructure, and create new customer engagement models that lead to deeper, longer-term relationships with consumers and other key stakeholders. Simultaneously, communications services providers must work to heighten efficiencies across their business units – a task that requires integrating existing capabilities within the context of a larger digital ecosystem and industry-specific platforms. (See Figure 1, next page).

## An Integrated Digital Telco Ecosystem

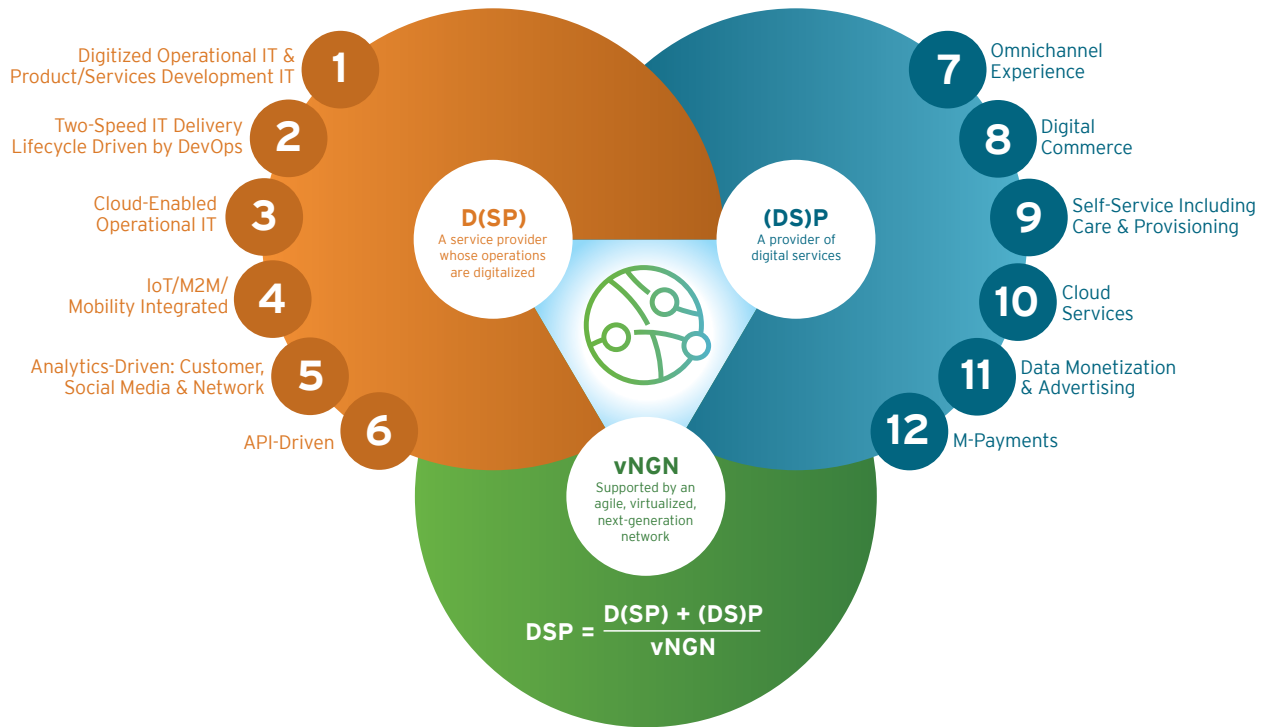


Figure 1

### STRATEGIC CONSIDERATIONS

Aside from dealing with overly complex, rigid, and sluggish BSS and OSS systems, CSPs face numerous other challenges, including customer retention (especially amid the disruptive effects of OTT competitors and ever-growing smartphone usage); rising Cap-Ex requirements, and the need to accelerate time to market for new services.

So how can CSPs address these issues? A number of analyst reports, including the EY Global Telecommunications Study, "Navigating the Road to 2020," cited customer experience management and organisational agility as CSPs' top two priorities by almost two-thirds (63%) and among the top three by as much as 88%. (See Figure 2, next page).

The results of the survey can help inform a set of six strategic principles for CSP organisations:

- Customer experience management (CEM) drives customer retention.** CSPs should deploy a seamless, omnichannel strategy by design. They should also offer quad-play services, as well as build-your-own-contracts and self-serve options enabled by artificial intelligence (AI to create "sticky" offerings that will maintain retention levels).
- Organisational agility helps CSPs open the door to digital.** The ability to connect networks and launch new services quickly in response to changing customer needs is key, and will help battle the disruptive forces of OTT players. Organisational agility also opens the possibility to offer complementary

## A View from the CEO Suite

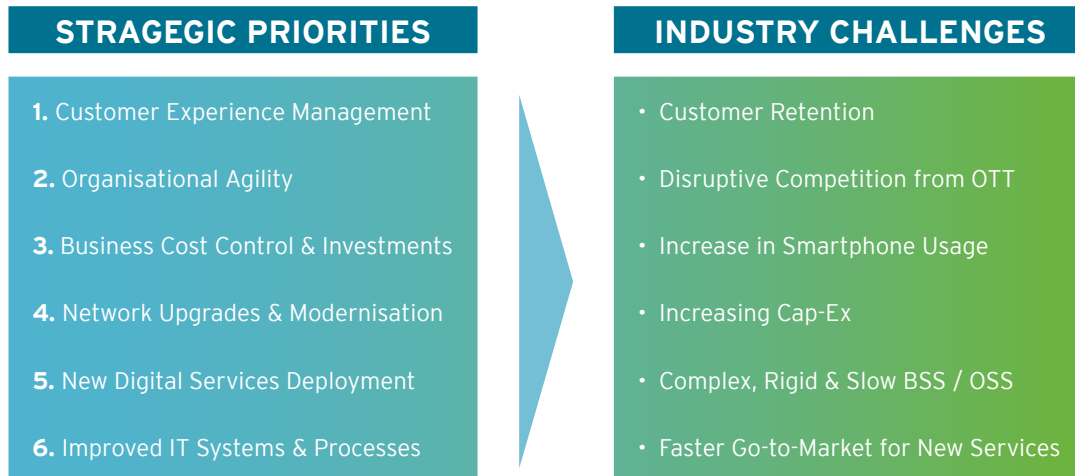


Figure 2

services, and play with over-the-top (OTT) providers as an integrated digital services platform – thus futureproofing infrastructure investments.

- Improve cost control and productivity to enhance existing processes and drive out inefficiencies.** Consider Liberty Global. This international CSP has embarked on its strategy to grow its EBITDA performance by 7% to 9% over three years.<sup>2</sup> Half of this growth will come from Op-Ex efficiencies/savings through shifting 4,500 people from operating units into a shared service centre, as well as restructuring to create just one CTO, one CIO, one network operations centre (NOC), and one data centre (DC). Additionally, the company consolidated the number of vendors for its outsourced call centre operations from 68 (at an annual cost of €250 million) to just five. And its procurement function is leading the way with €0.5 billion in savings. In the meantime, the business is looking to stimulate revenue growth by focusing on several initiatives: new build (through “Project Lightning” in the North of England); the fastest broad-

band speeds in the UK; going mobile (in nine European markets); and becoming a “thick” MVNO with more ownership of customer data. Liberty Global is also focusing heavily on the B2B and SME segments, where its current UK market share is just 4%.

- Upgrade and modernize networks.** Data traffic continues to grow; yet more important, the characteristics of that traffic are changing. For example, according to Cisco’s Visual Networking Index, over three-fourths (78 percent) of the world’s mobile data traffic will be video by 2021.<sup>3</sup> This means CSPs must either invest in a hardware-intensive network infrastructure or rely increasingly on cloud services. The goal is to create a flexible, automated, and programmable network that reduces Cap-Ex (which is currently rising at a CAGR of 5%) and deliver services to market faster. Software-defined networking (SDN) and network function virtualisation (NFV) are the tools needed to achieve this objective. On the one hand, SDN provides a centralised view of the distributed network to more efficiently orchestrate and automate network services.

On the other hand, NFV allows for faster services innovation and provisioning. Moreover, both of these telco cloud technologies have been shown to reduce Cap-Ex.

- New digital services deployment.** Technologies such as SDN and NFV enable faster and more efficient deployment of new services. CSPs need to orchestrate these new offerings across hybrid virtual/physical networks – requiring their operations support systems to adapt. Otherwise, the principal benefits of NFV – agility, dynamic performance, and reduced costs are lost. That’s why initiatives such as TM Forum’s ZOOM (zero-touch orchestration, operations and management) and standardised APIs that make it easier to deploy NFV and SDN are so important.
- Digital applications and processes redefine CSPs’ IT investments – from systems of record to systems of intelligence.** These advances also enhance the platforms that underpin companies’ revenue-generating processes, such as quote-to-cash (Q2C), order-to-fulfilment (O2F), and customer-to-

advocate (C2A). By adding technologies such as machine learning and predictive analytics to the mix, CSPs can also personalise their offers. And by applying behavioural science, or “thick” data, they can add more context and human insight to their customer interactions; for example, by making offers to customers via “next best action” – a leading channel for digital innovation that also acts as a catalyst for change in the network.

### HOW NEW DELIVERY MODELS ACCELERATE THE LAUNCH OF DIGITAL SERVICES

The strategies we highlighted are a core part of CSPs’ evolution to digital services providers (DSPs). A digital BSS overlay architecture can facilitate this step forward by allowing DSPs to bring new digital services to the market quickly and efficiently. And because the architecture exists as an overlay, CSPs don’t need to rip and replace their legacy support systems. Instead, they can focus on bringing new digital services to market in the shortest possible time frame. (See Figure 3).

### The Digital BSS Overlay

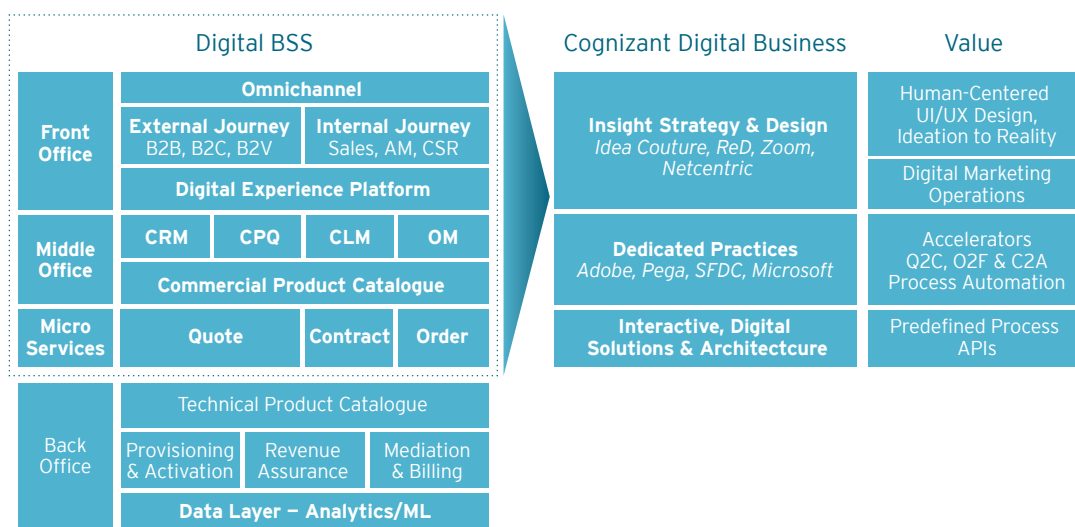


Figure 3

A DSP must have a clear understanding of the experiences that it creates for different customer types. It must also have the ability to grasp what its customers are experiencing – in other words, to put itself in their shoes.

Within the digital BSS overlay, digital services providers must create a “digital blueprint” for connecting external and internal entities and processes, and affording a truly digital, omni-channel experience. We typically work with CSPs to develop a human-centred approach that enables them to design external customer experiences from a user perspective across all digital touchpoints and define underlying processes across internal functions such as Q2C, O2F, and C2A on intelligent systems. (See Figure 4).

Recently, we engaged with a leading tier-1 CSP in Europe to help the company develop a retail in-store experience (external journey) designed with a human lens. Early signs indicate fewer walkout rates and projected 25% incremental revenue over five years.

Our work in this space reveals that true value is created at the points where the DSP’s offerings intersect with human activities – including the experiences of partners (B2B), end customers (B2B2C), direct customers (B2C) and industry verticals (B2V). Combining the collective insight of these entities sets the path for the next technology paradigm, 5G roll-out, which will cater to the needs of industry-specific verticals such as the automotive sector, and use cases such as the connected car.

Transformational, end-to-end human-centred design starts by describing an ideal interaction between an individual and the DSP and the benefits each can realise from that experience.

### Re-imagining the Digital Customer Experience

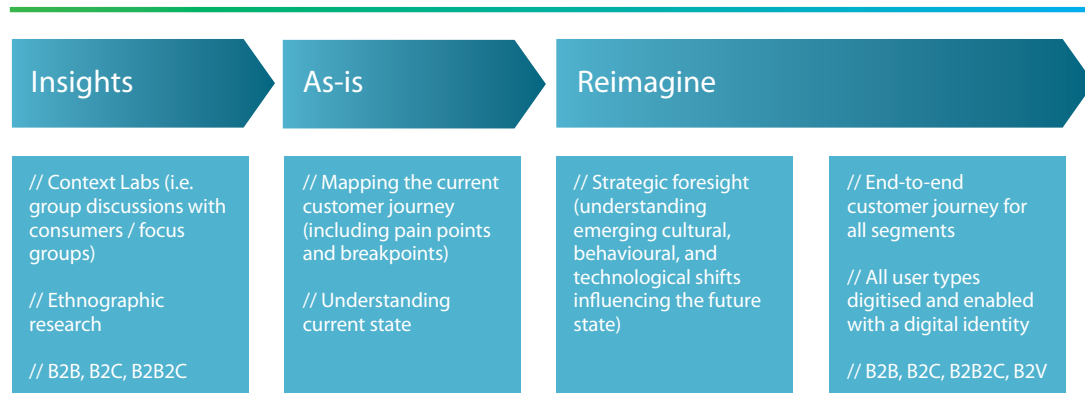


Figure 4

# Once their new digital services delivery model is in place, DSPs can focus on continuous optimisation using a combination of “thick,” or human data, and big data generated by devices, OSS/BSS, and network probes.

To properly align these initiatives, we recommend that DSPs adhere to three imperatives:

- **View offerings from the outside-in rather than the inside-out.** A DSP must have a clear understanding of the experiences that it creates for different customer types. It must also have the ability to grasp what its customers are experiencing – in other words, to put itself in their shoes. This requires a human insight-driven methodology that examines both current and future states.
- **Align internal functions across teams and levels.** A DSP's back-office order-to-fulfilment processes are as important as its front-office processes when it comes to the visible points of interaction. Thus, the value for individual customers and the DSP must align throughout the process, end-to-end, with the technology supporting that goal.
- **Create visualisations as shared references.** Aligning processes to ensure positive user experiences requires DSPs to understand the interdependencies among digital systems and processes, and how users across the business will navigate a patchwork of new interfaces and interactions on their own. By mapping individual experiences, companies can create a tangible model for DSP teams to rally around. From a broader perspective, these concepts can be used to align business

and technology strategies from both market and customer perspectives.

We base our approach on a proven methodology driven by human insight – taking into account all touchpoints, up to and including the ultimate end user – the consumer.

We cover all aspects of B2B2C mapping, including aligning DSPs' strategies with users' buying experiences and patterns. Armed with this level of insight, DSPs can employ an analytics-based platform to continuously optimise their customer services within a fully digitized environment that equips each player in the value chain with a digital identity.

## AN OPTIMISED, REVENUE-GENERATING MARKETING MODEL

Once their new digital services delivery model is in place, DSPs can focus on continuous optimisation using a combination of “thick,” or human data, and big data generated by devices, OSS/BSS, and network probes. This capability tells companies not only what their customers are doing, but why. When fed into a “next best action” engine, these powerful insights enable DSPs to deliver precise, timely, and contextual offerings and services. Adding journey analytics (sequential customer experiences) to the mix allows for meaningful customer interactions across channels.



For example, a customer might go through several steps to make a potential purchase via a DSP's app, only to close the app without completing the transaction. The customer might then decide to visit a physical store to make their purchase. Imagine if, rather than having to re-start the purchase process, the customer could immediately begin from the point where they closed the app. This is what it means to offer a truly omnichannel experience. (See Figure 5).

### ENABLING DIGITAL TRANSFORMATION: CONVERGING THREE CLOUDS

We see the converging of three technology clouds as core enablers of CSPs' digital transformation:

- The Telco (network) cloud: SDN/NFV (private cloud from NEP to the CSP)

- The Enterprise (public) cloud: Q2C, O2F, and C2A (customer to advocate) processes
- The Operator IT cloud: OSS/BSS overlay

Together, these Web-based systems provide the organisational agility that global CSPs cite as key to launching new products and services quickly and offering a superior customer experience that is omnichannel by design. Placing the customer at the centre of innovation and experience design also allows them to dramatically reduce costs.

We recommend that companies tackle digital transformation in phases. The first is to connect network virtualisation technologies, such as SDNs, with centralised orchestration (OSS) to support the roll-out of agile, programmable networks in multiple countries, and ensure that the customer experience is human-centred.

## An Optimised Marketing Model



Figure 5

The network cloud will grow as it is enriched with OSS/BSS, analytics, and radio. Orchestration will allow the network and enterprise clouds to connect; behavioural engineering will bring big and thick data together in the experience design.

The next critical phase involves the addition of customer experience management (CEM) and a radio access network (RAN). The network cloud will grow as it is enriched with OSS/BSS, analytics, and radio. Orchestration will allow the network and enterprise clouds to connect; behavioural engineering will bring big and thick data together in the experience design. The experience itself will be continually optimised to ensure that the customer’s digital journeys are dynamic, and evolve with the CSP’s digital capabilities to provide the best possible services, as depicted in Figure 5.

By 2020, the vision is to achieve comprehensive organisational agility – a single, scalable, integrated, cloud-based infrastructure with optimised services. (See Figure 6).

### LOOKING FORWARD: ACCELERATING THE TRANSITION TO DIGITAL SERVICES PROVIDER

The final leg of a CSP’s digital transformation is the transition to a digital services provider. Leading DSPs such as Facebook and LinkedIn are experts at engaging with customers in timely and relevant ways. CSPs have to make this leap, but to date haven’t developed the capabilities to enable real-time, relevant customer engagements – from upselling new services to providing customer loyalty notifications.

CSPs do hold one critical advantage, however. They have already amassed huge amounts of data. As shown in Figure 7 (next page), the key is to harness this treasure trove and combine it with thick data to generate insights and experiences that can scale to meet the needs of global markets.

## The Cloud Transformation Timeline

Cloud Transformation Will Take 5 - 10 Years

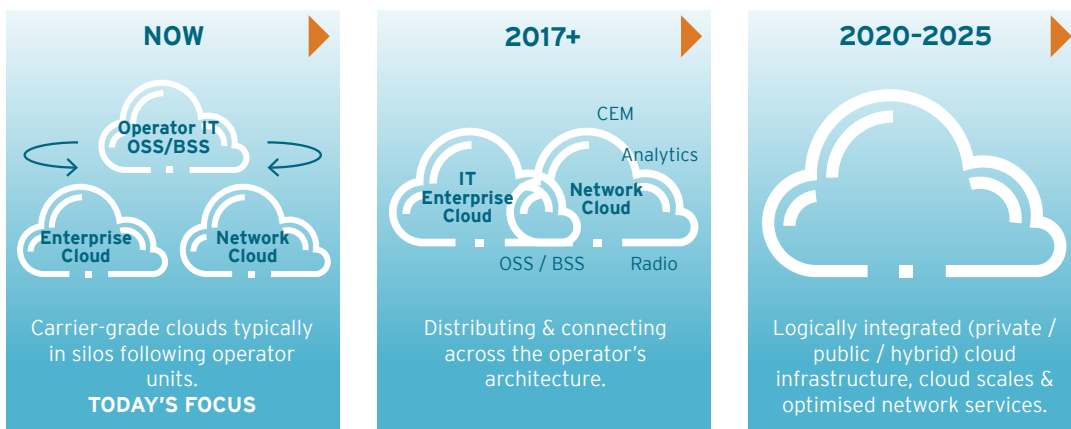


Figure 6

## A Data Driven Experience Engine

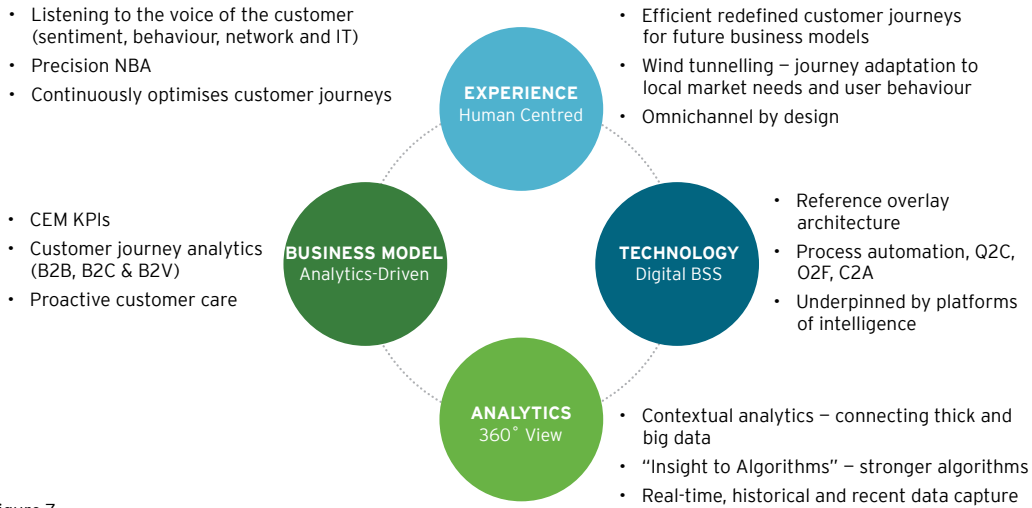


Figure 7

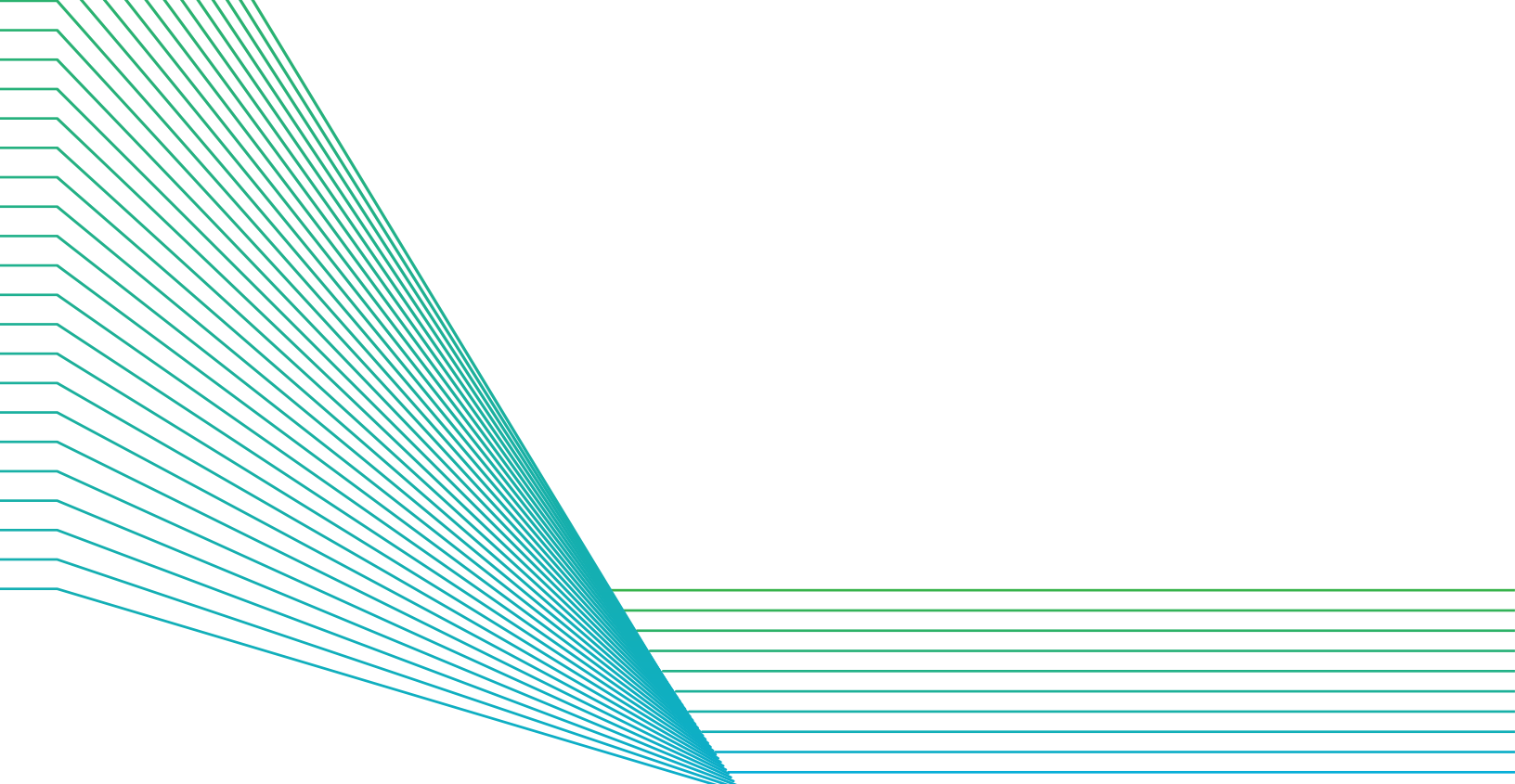
## FOOTNOTES

- <sup>1</sup> Global Telecommunications Study: Navigating the Road to 2020. [www.ey.com/gj/en/industries/telecommunications/ey-global-telecommunications-study-navigating-the-road-to-2020](http://www.ey.com/gj/en/industries/telecommunications/ey-global-telecommunications-study-navigating-the-road-to-2020)
- <sup>2</sup> Liberty Global's (LBTYA) CEO Michael Fries on Q1 2016 Results – Earnings Call Transcript. <https://seekingalpha.com/article/3973764-liberty-globals-lbtya-ceo-michael-fries-q1-2016-results-earnings-call-transcript?page=2>
- <sup>3</sup> Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2016-2021. [www.cisco.com/c/en/us/solutions/colateral/service-provider/visual-networking-index-vni/mobile-white-paper-c11-520862.pdf](http://www.cisco.com/c/en/us/solutions/colateral/service-provider/visual-networking-index-vni/mobile-white-paper-c11-520862.pdf)

## ABOUT THE AUTHOR

**Avtar Chaggar**  
 Digital Partner  
 Communications, Media &  
 Technology

Avtar Chaggar is a Digital Partner within Cognizant's UK-based Communications, Media and Technology (CMT) business unit. In this role, he leads digital transformational strategies for communications clients by combining technological advances in human science and innovations in customer experience management, as well as operational and business support systems (OSS/BSS), cloud and analytics. Avtar is a highly experienced subject-matter expert in the mobile communications sector – delivering high-impact business outcomes to C-level audiences within the tier-one service provider space. Over the last 20 years, Avtar has focused on leading-edge digital technologies, starting from the ground up to provide a comprehensive understanding of digital technologies. Avtar is a Chartered Engineer, and holds a BEng from King's College London and an MBA from Henley Business School. He can be reached at [Avtar.Chaggar@cognizant.com](mailto:Avtar.Chaggar@cognizant.com) | <https://www.linkedin.com/in/avtarchaggar/>.



## ABOUT COGNIZANT DIGITAL BUSINESS

Cognizant Digital Business helps our clients imagine and build the digital economy. We do this by bringing together human insight, digital strategy, industry knowledge, design, and new technologies to create new experiences and launch new business models. For more information, please visit: [www.cognizant.com/cognizant-digital-business](http://www.cognizant.com/cognizant-digital-business)

---

## ABOUT COGNIZANT

Cognizant (NASDAQ-100: CTSH) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 205 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at [www.cognizant.com](http://www.cognizant.com) or follow us [@Cognizant](https://twitter.com/Cognizant).



**Cognizant**

### World Headquarters

500 Frank W. Burr Blvd.  
Teaneck, NJ 07666 USA  
Phone: +1 201 801 0233  
Fax: +1 201 801 0243  
Toll Free: +1 888 937 3277

### European Headquarters

1 Kingdom Street  
Paddington Central  
London W2 6BD England  
Phone: +44 (0) 20 7297 7600  
Fax: +44 (0) 20 7121 0102

### India Operations Headquarters

#5/535 Old Mahabalipuram Road  
Okkiyam Pettai, Thoraipakkam  
Chennai, 600 096 India  
Phone: +91 (0) 44 4209 6000  
Fax: +91 (0) 44 4209 6060

© Copyright 2018, Cognizant. All rights reserved. No part of this document may be reproduced, stored in a retrieval system, transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the express written permission from Cognizant. The information contained herein is subject to change without notice. All other trademarks mentioned herein are the property of their respective owners.