

Unleash the power of digital transformation

Enable a new collaboration model across the telco ecosystem



Foreword



Silos risk undermining digital transformation programs

How long have we been talking about the value of data to the telecom operator's organisation? Seven years? Ten years? The fact that we are still talking today about the unrealized potential of leveraging data across the Carrier Service Provider (CSP) tells us all we need to know about the challenges that CSPs face during their digital transformation journeys.

From the outside we look at CSPs as single organisations with coherent strategies that flow across the entire business; from the functions that produce (the network) to those which monetise products and services (the consumer and enterprise lines of business). Then there are the functions that support the core businesses of producing and monetising, such as finance, IT, operations and HR.

But as soon as we look under the bonnet it becomes clear pretty quickly that these functions, each employing hundreds or thousands of people, have different cultures, skillsets and vendor relationships. Cross-departmental collaboration can be difficult. Compare this with Google where any team can find out what is happening in any other part of the organisation.

This lack of joined-up thinking and doing takes many forms. Getting access to raw (or refined) data can be an issue in its own right. Different approaches to governance, formatting and a lack of awareness about how and where to find the right data all hinder collaboration. But it is also about how to use the data when it is available. CSPs simply do not have the systems in place to converge and process the network and business functions and to make decisions using real-time data that factor in what is happening on both sides of the organisation.

Further, it is not only the lack of alignment between the network and business lines but also the lack of capabilities to transform these two functions which are slowing down the pace of digitisation. Consequently, the full value of digitization in the telco industry is not able to be fully realised.

There are a number of examples of how the business could benefit from melding together the network and business functions.

When it comes to deciding how, when and where to invest in the network, access to real time data such as traffic data and forecasts and where new business opportunities exist can result in more precise and accurate planning and investment decisions.

Access to real-time insights into an operator's marketing and distribution capabilities could be fed into decisions about network expansion and coverage. Conversely, if the sales and marketing organisation had access to real-time data about network planning and investment then resources can be deployed in the right place at the right time. As a result, all required resources and activities would be prepared in parallel and different teams can work proactively.

Customer experience teams need closer alignment with the network and network operations function. The network determines the customer experience and yet the information flow to and from the network and the customer is slow and unpredictable. Network operations teams are under pressure to transition to service operations centres and to take remedy actions that are based on service impact and customer experience. And customer services teams want real-time access to network information to be more proactive in managing customer relationships.

Finance needs to be better digitally connected with technology divisions. Many CSPs now do their capex budgeting on a quarterly basis. To make the most effective, efficient decision, access to real time data about what is happening, and what is likely to happen, in the network is essential. Procurement more generally is under pressure to modernise, and to digitise as both IT and network teams' transition to agile ways of working.

The inability to leverage data across the organisation is just one of the cross-silo barriers slowing initiatives aimed at transformation. An even more fundamental challenge is the different languages that teams and departments use to describe business processes and technology. TM Forum's Information Framework (formerly SID) is a common model and language for the information needed by all the processes in the business framework.

Looking more broadly at the status of digital transformation in the telecoms industry, progress is slow and stuttering. We regularly track digital transformation initiatives at TM Forum and our most recent survey data published in February 2020 would indicate that in the three years since our first survey in 2017 little progress has been made.

Culture, rather than new technology adoption, is proving the biggest challenge and barrier to successful transformation. In our 2018 and 2020 surveys we asked both vendors and CSPs about CSP culture. There is a recognition from just under half of CSPs and just over half of vendors that CSPs are hierarchical, process driven and resistant to change.

Looking beyond 2020, cultural and organisational change must be prioritised if CSPs are to reap the rewards of digitisation. There is no clear roadmap to drive this change. However, the introduction of more cross-functional teams, the adoption of agile methodologies and initiatives to drive greater collaboration between departments will all serve to give digital transformation a greater chance of success. Openness and collaboration is an inevitable factor to accelerate digitalization.

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Summary

Driven by a need for greater agility, coupled with defence against potential disruptive new entrants, digitisation has become a core strategy for many industries. Digitisation helps industries to reconstruct their service model and enable operations methodologies to become more agile and efficient.

The telecom industry has played a key role in enabling industries to digitalise, yet often, telecom operators themselves have not maximised the benefit of digitalisation and are “leaving money on the table”. As a consequence, telecom operators are vulnerable to disruptive new entrants with fully digitised business models.

Telecom operators have digitised processes for support functions and enterprise management but only a few have tackled digitisation of the two core value creation processes of producing and monetizing products and services (refer Figure 1). Major transformation programs that have been initiated by telecom operators involve enhancing customer experience by increasingly shifting customer interactions to mobile apps and digital self-service. Competitive pressures and more challenging economics mean telecom operators must accelerate digitisation of these two core value creation processes to grow enterprise value.

Digitisation will empower the alignment and synergy among the telecom operator’s strategy, business and network through transforming SIP and OPS processes¹. The entire value chain must also be included by an interconnected ecosystem of vendors, sub-contractors and channels. A new model of ecosystem partnership, openness and collaboration will be possible and the business relationship between telecom operators and vendors will be reshaped and more agile.

Data has become a driving force for business success and is even more important as the telecom industry evolves towards maturity in 5G and the Internet of Things (IoT). Telecom operators need enhanced capabilities in utilizing AI, Big Data and algorithmic models to effectively integrate and process the massive volumes of data generated by sales and marketing, networks, and from third parties. The opportunity is for all divisions of the telecom operator to benefit from these insights. A data driven decision making culture is needed at the corporate level, where rapid and more accurate decisions can be made at the right time.

¹The Enhanced Telecom Operations Map (eTOM) model provides a useful framework to describe these two core processes. Strategy, Infrastructure and Products (SIP) relates to **producing**. Operations (OPS) relates to **monetising**. Source: TM Forum, <https://www.tmforum.org/business-process-framework/>

Network Planning, Deployment and Operations & Maintenance process need to be fully digitalized and automated to improve efficiency and shorten time to market. Telecom operators need to enhance network planning accuracy using cell level AI traffic forecasts to proactively apply all required capacity and coverage expansion activities in parallel before congestion occurs. The entire planning and delivery process must be streamlined, automated and monitored online in near real-time through digitisation and made available in a single view platform. The sharing of data and insights empowers different teams to take the required action, at the right time. Executives will have clear visibility to both *producing* and *monetizing* products and services. Digital transformation undertaken in this way will ensure customer experience is taken to new heights and investment returns are maximised.

In conclusion, digital transformation is a MUST, and not an option for telecom industry. Moreover, openness and collaboration are vital for both telecom operators and vendors. There are a number of examples that can be implemented today with significant business benefits (see Figures 6-8):

Sales and marketing functions can leverage network data to identify areas of excess network capacity to stimulate marketing activity for share gains

Cell level AI traffic forecasts can enable planning teams to take proactive actions to minimize deterioration of network quality and keep improving user experience

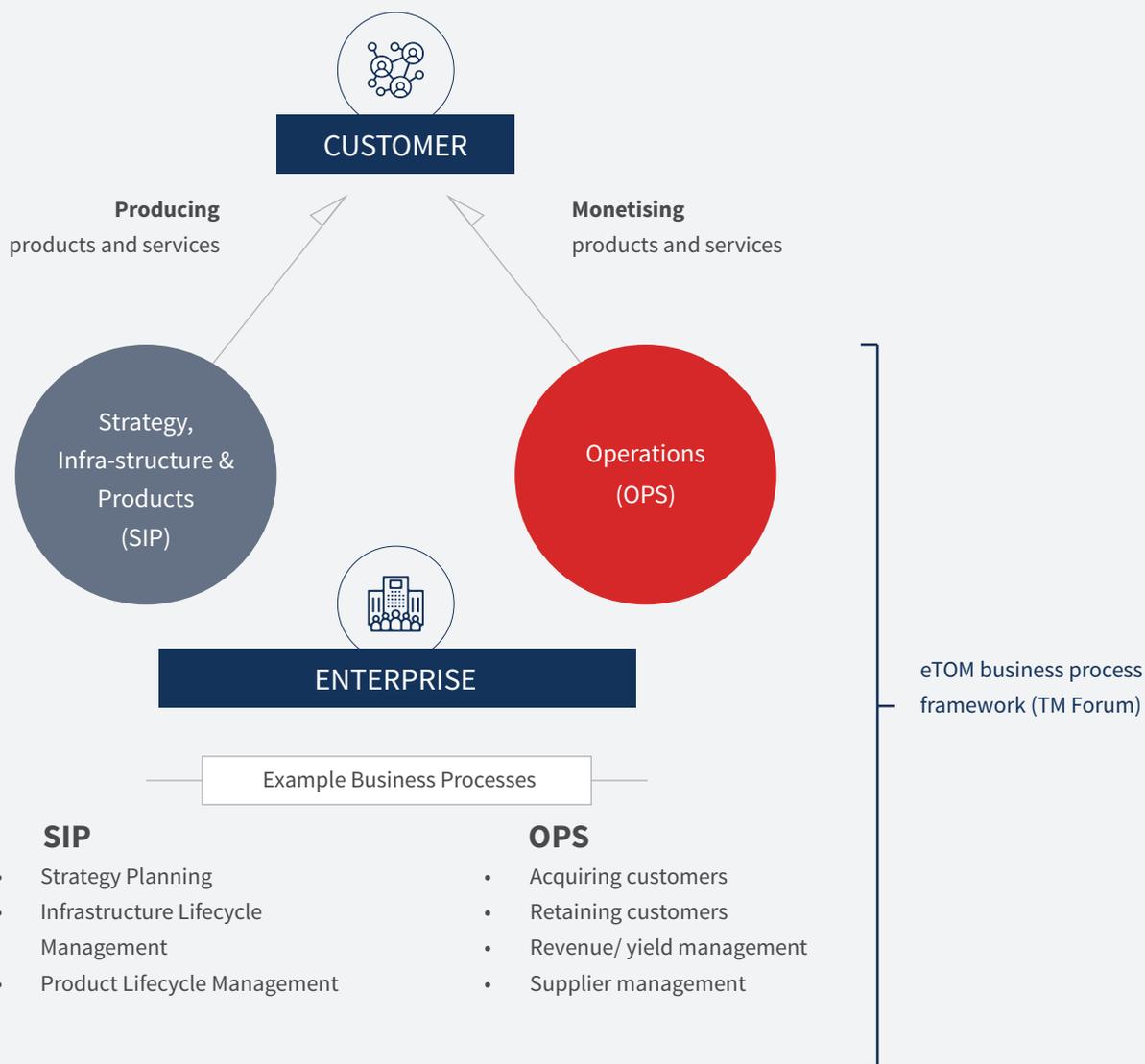
Online and automated planning and deployment progress tracking can enable managers to monitor roll-out process flow and identify roadblocks in advance. Proactive decisions can then be taken, significantly shortening time to market

Corporate planning cycles shifting from onerous yearly processes to short term sprints can drive improved investment returns and ensure network capacity and coverage is deployed at the 'right time, right place'

Unlock greater business value with SIP and OPS digital transformation

Globally, telecom operators have been engaged in digital transformation programs for almost a decade, with a range of views on what it means to transform and the best way to go about it. In this whitepaper, we are emphasizing the need to digitally transform the core business process of telecom operators, namely: 1) producing and 2) monetizing products and services, as referenced by the Enhanced Telecom Operations Map (eTOM) business process framework. Adopting eTOM concepts enables a consistent globally recognised approach from which to compare and contrast the status of digital transformation among telecom operators. It is only for this purpose that the eTOM model is used in this whitepaper (see Figure 1).

Figure 1: Telecom operator business process framework



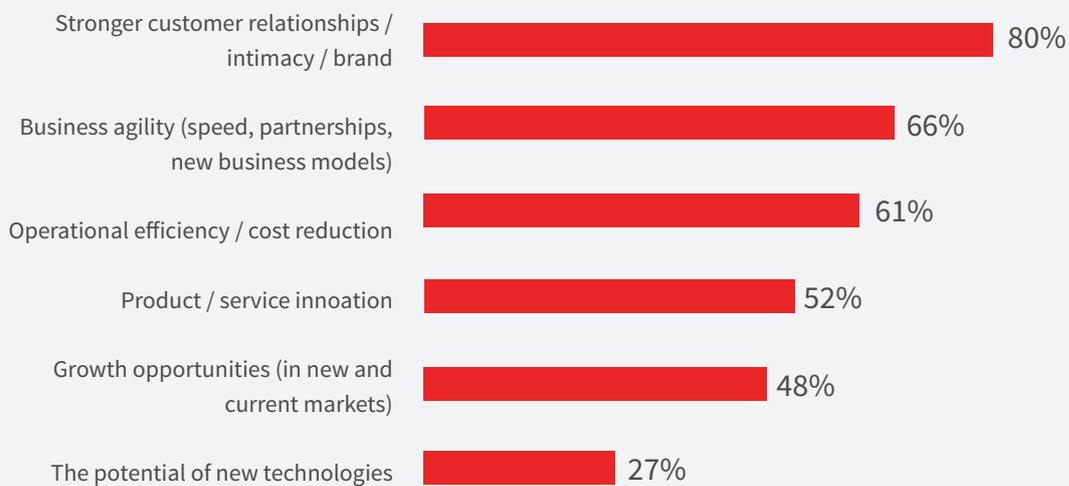
Source: Ovum, TM Forum

²eTOM, TM Forum, <https://www.tmforum.org/business-process-framework/>

Greater focus is required in SIP and OPS digital transformation

When it comes to the key drivers for digital transformation among Asia-Pacific telecom operators, building stronger customer relationships has been the main focus. Business agility and operational efficiency are top two and three drivers (see Figure 2). So far, major transformation programs that have been initiated focus on improving customer experience with less effort on other parts of SIP and Operations transformation. End-to-End digitisation of SIP and OPS will enable telecom operators to take customer experience to even greater heights.

Figure 2: Drivers for transformation in Asia-Pacific region (2019)



Source: Digital Transformation Tracker (2019), TM Forum

Alignment between SIP and Operations is necessary to drive full potential of digitisation

To find out where telecom operators are on their digital transformation journey, a survey was carried out in January 2020 of telecom operators in ASEAN and ANZ regions. Only 36% of respondents indicated that a strong degree of alignment exists between SIP and OPS business processes. In particular, leveraging and acting on a common set of data to make day-to-day business decisions is even more obscure, with only 29% claiming this was being achieved. Interestingly, the OPS domain plays a limited role (36%) in influencing strategic planning and in developing revenue streams vs SIP (57%). These results suggest an operating model that is lopsided, with SIP being a primary driver in defining business priorities and allocation of capital and operating in relative isolation to OPS. One of the key outcomes for digitisation must be to align SIP and OPS business processes.

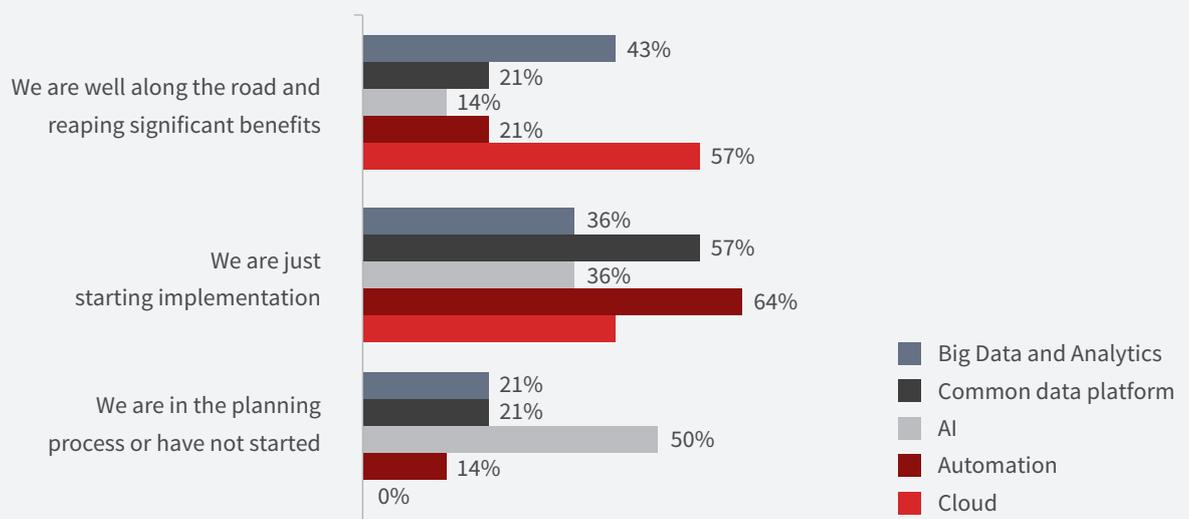
AI, Big Data and Automation play a key role in digital transformation



Telecom operators are moving towards consolidation of all forms of data. As the massive data sets generated by telecom operators are better understood, operators are becoming more confident to bring data sets together, and in a way that can be leveraged by all areas of the business. The majority of surveyed respondents are already reaping benefits from moving to the cloud and are now focused on building capabilities in big data and analytics to mine the vast expanse of data available. The integrity, convergence and governance of data is an emerging priority for the majority of telecom operators surveyed. In parallel to data management, automation is hot on operator's radar (see Figure 3).

For telecom operators, adoption of AI is that the early stages, with some operators already seeing benefits but in very specific situations. An emerging example in network planning is cell level traffic forecasting models driven by AI to ensure network capacity and coverage is delivered at the "right time, right place". Telecom operators need to accelerate the adoption of these advanced technologies across all areas of the business and ensure tight integration between SIP and OPS processes.

Figure 3: Adoption of digital technologies and capabilities



Source: Telecom operation digital transformation survey (Ovum, 2020)

A single view data platform is needed

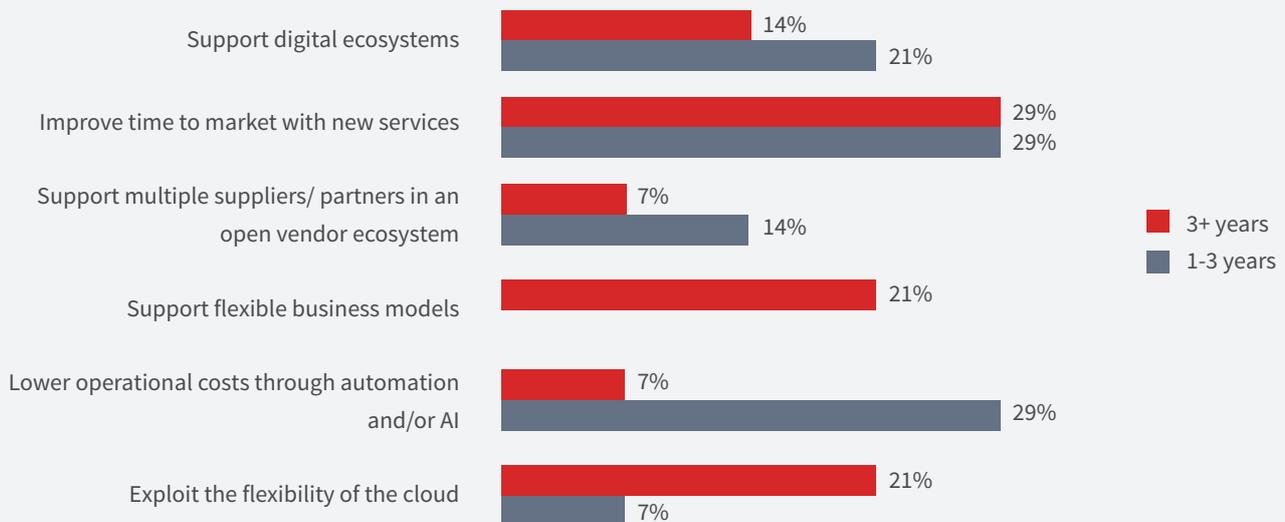
A critical factor in realising the full potential of digital transformation is the ability to leverage the “same data across all areas” of the business. According to a recent survey from TM Forum , the most significant issue is a lack of a consistent data model, which is a design for how to consistently structure and represent information across all areas of the business. The aim is for the business and network teams, at both the working and management level, to leverage the common data and insights on a daily basis. For example, online and automated planning and deployment progress tracking will enable managers to monitor roll-out process flow and identify roadblocks in advance. Proactive decisions can then be taken, significantly shortening time to market. In addition, executives in the business would have visibility of the network roll-out progress as well as the sales and marketing process flow – this ability to know what is going on anywhere in the business in (near) real-time supports right decisions at the right time.

It’s all about flexibility in a digital world

Respondents were asked to rate the level of benefit from digital transformation over different time periods (see Figure 4). In the short-term, lowering costs with automation or AI and improving time to market are seen as big opportunities. Looking beyond a three-year timeframe, flexible support of new business models and the cloud increased in importance. Surveyed operators are expecting to diversify revenues by providing end-to-end digital services and becoming platform providers to attract third-party services.

Surveyed respondents felt open vendor collaboration is difficult to achieve. End-to-end digitization will empower the alignment of not only internal functions within telecom operators but also enable a new collaboration model across the entire telecom ecosystem. Consequently, an interconnected ecosystem of telecom operators, vendors, sub-contractors, and channels can be realised. The telecom industry needs to focus efforts to enable this reality. In this regard, Telecom operators must work with suppliers in an open and collaborative way to digitally interconnect to each other’s systems to unlock the full potential of digitisation.

Figure 4: Perceived benefits from digital transformation



Source: Telecom operation digital transformation survey (Ovum, 2020)

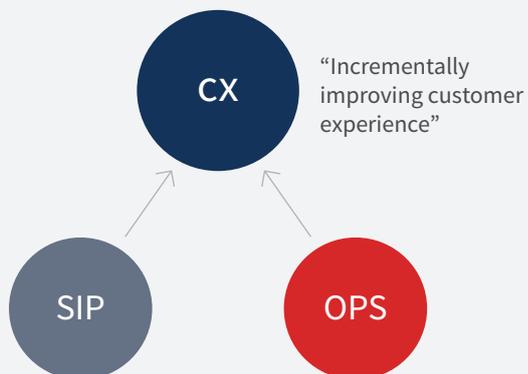
What do telecom operators need to do?



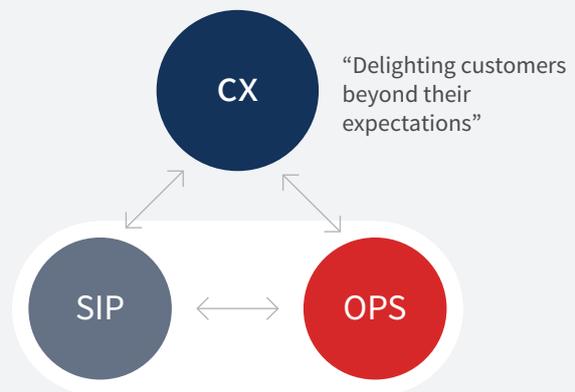
For telecom operators, a shift in focus is needed by first recognising that the two-core business process of SIP and OPS must be **digitally transformed and aligned** (see Figure 5). **Alignment** in this context refers to business processes in SIP and OPS working together to provide brilliant customer experience and help telecom operators to design corporate level strategies more effectively and accurately by leveraging the entire data available to a telecom operator. End-to-end digital transformation ensures the business processes can be highly, if not totally, automated. The ultimate benefit is in enhancing the effectiveness and efficiency of the operating model and of all business processes, improving ways and working, shortening time to market and improving investment returns.

Figure 5: Shift in transformation focus is required to unleash the power of digital transformation

Typical transformation focus



Shift in transformation focus required



“End-to-end digital transformation AND alignment of business processes”

Source: Ovum

Two scenarios are provided below to help bring these concepts to life.

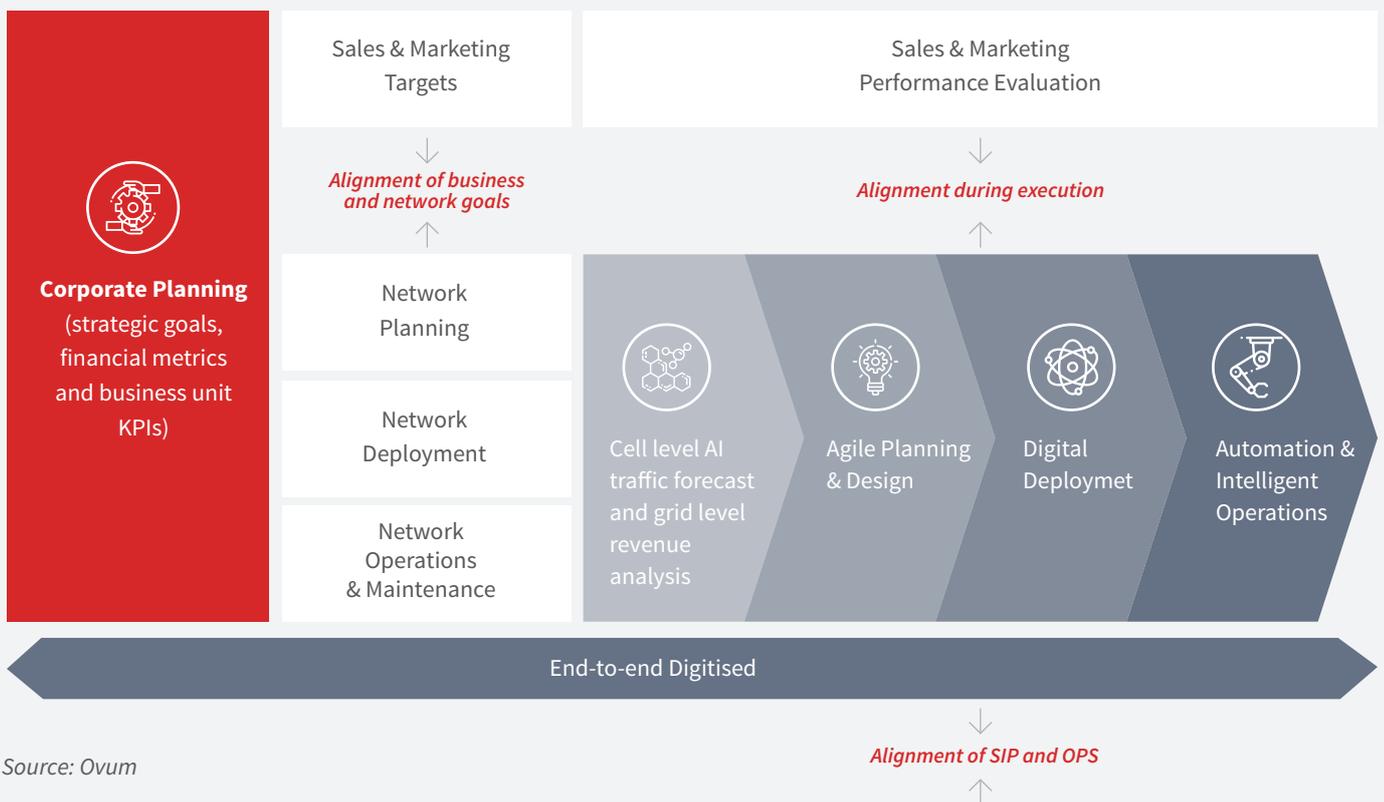
End-to-end digital transformation of network planning

Telecom operator capital budgets are significant, and generally 12-25% of service revenues – maximising return on investment is a primary focus. For example, a key challenge for mobile network capacity and coverage is to know where, when and how many to build. Typically, networks divisions build for specific population coverage at certain minimum levels of network quality, based on an average usage profile. Customer usage behaviours and patterns have been changing significantly and now with the arrival of 5G and IoT, new planning methods and assumptions are required.

Telecom operators must develop a scalable and proactive planning approach to network deployment which would enable planning teams to target marketing areas for growth or address congestion situations before they arise. End-to-end digitisation of network planning would ensure capital programs are more efficiently deployed and able to be executed in parallel, rather than serially as today, significantly reducing lead times and unnecessary capital spend.

Agile network planning together with cell level AI traffic forecasts and grid level revenue analysis would enable near real-time feedback loop for the corporate or business planning teams. These teams today focus enormous effort in setting the overall capital budget via onerous annual operating processes. By end-to-end digitisation of the planning process telecom operators can reduce the annual planning cycle to a business as usual process with progress monitored in (near) real-time (see Figure 6). The result of this planning process can be shared with sales and marketing teams via a single view digital platform.

Figure 6: Example business process digitisation and alignment (simplified)



Source: Ovum

Aligning networks and marketing operations



Digital transformation and alignment of both SIP and Operations business processes is essential for the long-term sustainability of telecom operators. Corporate planning functions define the financial and sales targets for the year. From an operational standpoint, sales and marketing teams execute these strategies via sales channels and tactical campaigns to reach the desired metrics of customer acquisition, retention and profitability. These pursuits are almost always run independently of network planning, where coverage and capacity decisions are driven by network quality metrics. Once SIP and OPS are digitalised and supported by a single view data platform, AI models in (near) real-time enable value-based planning decisions that consider both network and marketing operations (see Figure 7).

Figure 7: Example of benefit from an alignment in SIP and OPS business processes

SIP & OPS – Not aligned

Local Market Share	HIGH	Increase network CAPEX to meet minimum network KPIs	Do nothing, network KPIs met - monitor congestion closely
	LOW	Increase network CAPEX to meet minimum network KPIs	Do nothing, network KPIs met
		LOW	HIGH
		Network Quality	

SIP & OPS – Aligned

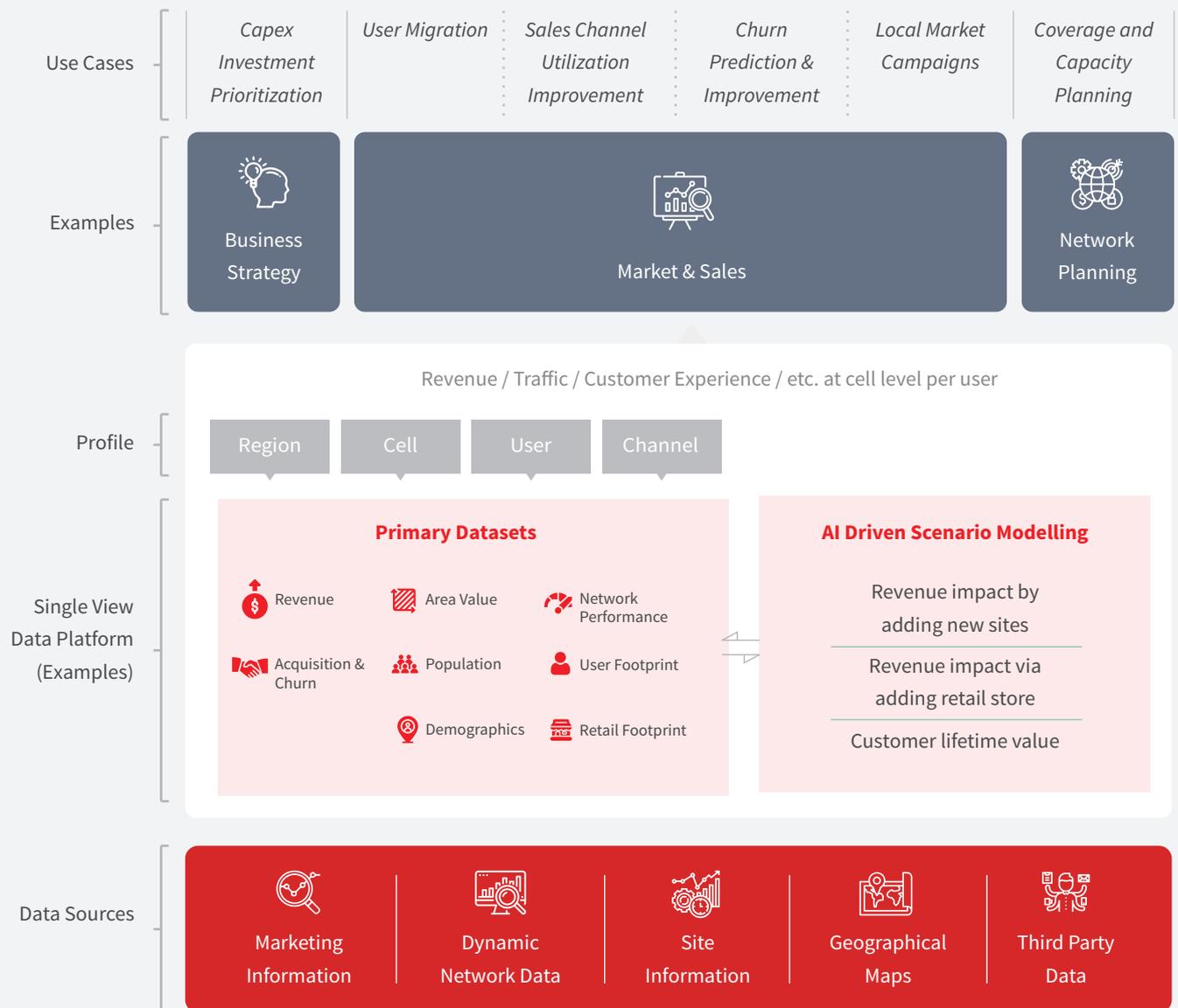
Local Market Share	HIGH	Ensure sufficient network investment to maintain market share	Monitor predictive traffic models and minimize investment to keep up with growth
	LOW	Test market area economic viability and assess priority for further investment	Address with targeted marketing campaigns to stimulate acquisition / improve retention
		LOW	HIGH
		Network Quality	

Source: Ovum

Bringing network and marketing business processes together requires several underlying digital capabilities that need to be built, as illustrated in *Figure 8* below. A foundational capability is a single view data platform, which brings together data from several sources (e.g., internal operational data together with 3rd party data, such as property value, demographic etc.). AI models test various business questions, for example, “what would be the revenue impact of adding a new site in a certain location,” or “as traffic grows in a region, do we have adequate physical retail points of presence to support sales”. Results from the AI scenario modelling are then summarised in to usable profiles (e.g., on average adding a cell site to a specific metro region yields a certain revenue benefit). These profiles underpin rapid business case development and value-based decisioning. All findings can then be leveraged by various business units to solve a range of problems (e.g., churn improvement if the site is added, capital deferral options to manage cell congestion, etc.).

For telecom operators to unleash the power of digital transformation, a shift in focus is needed by first recognising that the two core business activities of creating and monetising products and services must first be aligned then digitally transformed end-to-end.

Figure 8: Example use cases from end-to-end digitisation and alignment of SIP and OPS



Source: Ovum

Three steps telecom operators must take to unleash the power of digital transformation

1. Develop a long-term data strategy enabled by a single view of data platform “leveraged by all” areas of the business
2. Invest heavily to accelerate alignment of SIP and OPS business processes in an automated and digitalised manner working towards solving the “same” customer or business problem
3. Foster an open and collaborative culture to drive an interconnected digital ecosystem, where not only telecom operators but vendors and suppliers work together to deliver compelling value for consumers and enterprises



Further reading

“Digital Economy 2025: Communications Service Providers”, TE0009-001490, Ovum
“Digital Transformation World highlights the role AI and analytics will play in CSPs’ network operations”, SPT001-000023, Ovum
“Digital Transformation: Telecoms finally gets to grips with collaborative models and new digital architectures”, SPT001-000066, Ovum

Methodology and Sources

This report draws on qualitative and quantitative research conducted during January 2020 across the ASEAN and ANZ regions. The mixture of telecom operators was both incumbent and challenger, mobile only, fixed only and predominantly mobile / fixed players. The conclusions of this report also leverage Ovum’s proprietary intelligence and insights, together with published material from TM Forum.

Ovum Consulting

We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Ovum's consulting team may be able to help you. For more information about Ovum's consulting capabilities, please contact us directly at consulting@ovum.com.

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