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White paper

The future of telecoms customer experience: intelligent, personalised and data-driven

August 2020

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RESEARCH

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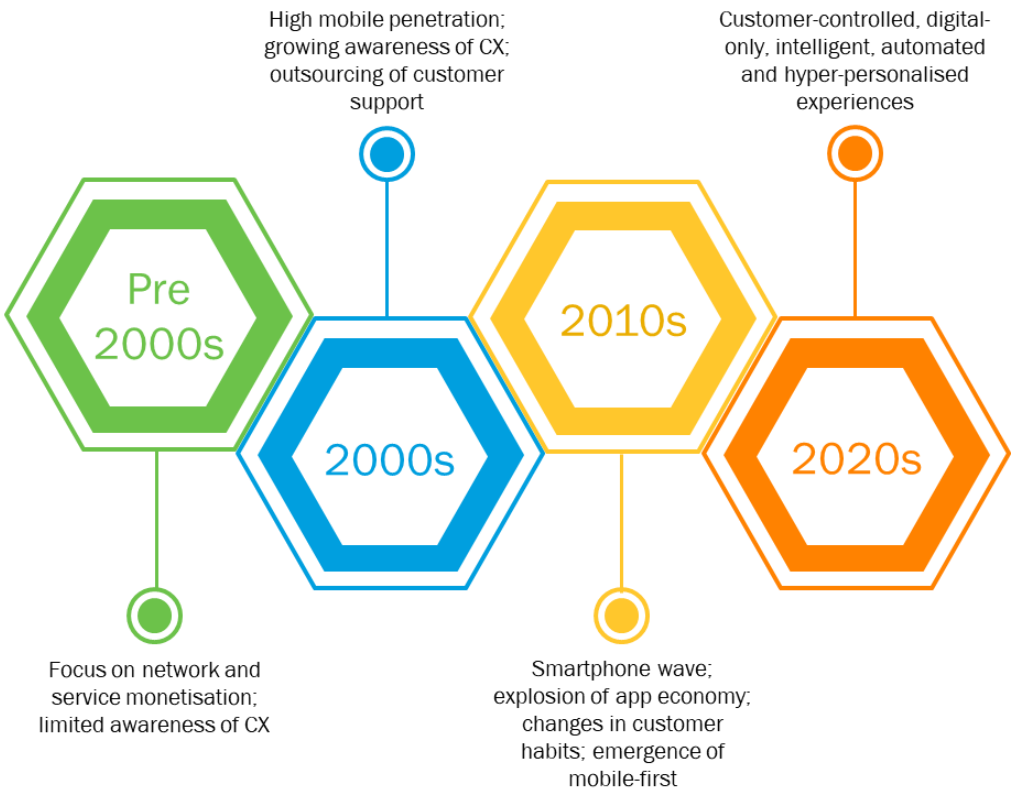
1. Executive summary

Communications service providers' (CSPs') focus on customer experience (CX) and digital engagement has increased sharply over the past decade, driven by changing customer behaviour, the need to reduce support costs and competition. The COVID-19 pandemic has accelerated CSPs' plans for digitising their engagement channels, but even before the crisis, digital customer experience was a priority that many CSPs chose to address ahead of transforming other functional systems. However, this was not always the case; until the past decade, CSPs often overlooked their customer engagement systems and instead directed investments towards improving network coverage and monetisation.

The pronounced shift in the business and operating environment has been a key driver of the evolution of CSPs' approach to customer experience in the past decades (Figure 1). Many CSPs were late to start transforming their digital channels, so most still have much to do in order to provide a digital experience that is comparable with that of a digital native company. Companies such as Amazon, Netflix and Uber have redefined digital experience with their intuitive designs, seamless transactions and extensive control through the mobile app. The mobile-first (and in many cases, digital-only) strategies of these digital native companies have generated rich dividends in terms of lower costs of operation, faster times to market and deeper engagement with the end customer.

Figure 1: Evolution of CSPs' approach to customer experience



Source: Analysys Mason, 2020

An important part of CSP's strategies to enable a truly modern digital experience lies in transforming incumbent customer engagement systems, as these are often the primary factor limiting CSPs' ability to support new engagement models. This calls for an extensive process redesign and radical overhaul of the traditional approach to enable data science, machine learning and artificial intelligence. In the next decade, CSPs will move away from disparate monolithic stacks (which lengthen the time to market) in favour of cloud-based delivery models that are cheaper to deploy and encourage experimentation with different engagement models. Leading CSPs in many markets are already making this move. Indeed, according to Analysys Mason research, CSP spending on SaaS-based customer engagement solutions is expected to grow at a CAGR of 12% between 2018 and 2022, while spending on virtual assistant solutions is expected to increase at a CAGR of more than 42% in the same period.

CSPs that are prepared to make extensive changes to their legacy process and systems frameworks will be well-placed to take advantage of the 'new digital normal' in the medium term. This whitepaper looks at the factors that are driving CSPs to make extensive changes to their approaches to digital engagement and the key trends that are emerging that will define the customer engagement models of the future.

2. Recommendations

- **CSPs should prioritise investing in the design and development of a mobile app that can become the central hub for all future customer engagement.** Intuitive design, clear information and content and greater customer control will make mobile apps the primary gateway for all customer interactions. The low-contact norms triggered by COVID-19 will further accelerate the widespread adoption of mobile apps as the primary channel for customer engagement in the short-to-medium term.

- **CSPs should experiment and familiarise themselves with virtual assistant technologies** because these are set to become an important channel for engagement in the medium term, especially with the younger demographic. Advances in natural language processing (NLP) and machine learning will enhance CSPs' ability to understand and respond to customer requests through digital channels without human intervention. This will be transformational to CSPs; it will improve customer engagement and reduce support costs.

- **CSPs should plan for augmented reality (AR)-based experiences**, which will become important for customer care and engagement. AR is likely to have a significant impact on three primary aspects of customer engagement in the medium-to-long term: the buying experience, self-service functions and the training of customer support agents. The use of AR will also extend into enterprise support functions.

3. The telecoms customer experience is constrained by several factors and requires an extensive overhaul

CSPs did not consider customer experience to be an important issue as recently as the mid-to-late 2000s because most were focused on network capacity, coverage and monetisation. This was partly because they were still in a growth phase, and network quality was considered to be the most important, if not the only, differentiator. As a

result, customer engagement and experience capabilities were neglected. CSPs' approach to customer service began to shift in the 2010s because the growth in the number of mobile subscribers tapered off and the penetration of mobile services exceeded 100% in some regions. The business environment also started to transform thanks to increased competition from digital native companies and OTT providers. Most importantly, customers' behaviour and expectations underwent a notable change, partly due to their experience of engaging digitally with digital native companies.

Today, customer experience has become a strategic priority for most CSPs, and it is a popular starting point for digital transformation projects. However, CSPs are considerably behind digital natives when it comes to offering seamless digital engagement, despite the increasing emphasis on customer experience. Four key factors limit CSPs' ability to swiftly transform their customer experience (Figure 2).

- **Legacy systems.** The existing systems that most CSPs have in place are incapable of supporting modern customer experiences. The incumbent monolithic multi-vendor frameworks that are common in many CSP environments are often a key stumbling block for transformation as CSPs are forced to design new models around them. Investing in a modern architecture framework may be the most-effective way to overcome the deficits of legacy systems in the medium-to-long term.

- **Poor information management.** An added issue of legacy systems is that customer and service information is often incomplete and is spread across disparate silos in multiple departments. Access to accurate data in real time is vital to ensure a satisfactory digital customer experience. Legacy systems are also incapable of understanding customer context or applying machine learning tools to gather deeper insights, which can be detrimental to effective engagement. CSPs with access to intelligent information management capabilities will have a distinct competitive advantage in the long term.

- **High support costs.** Disparate systems and legacy process frameworks often lead to high support costs for CSPs. Many CSPs have attempted to save costs by outsourcing call centre operations, but the support costs for direct engagements are still higher than those of webscale companies of a comparable size.

- **Limited self-service capabilities.** Digital channels are a focus for development for many CSPs, but most still fall short of providing an experience that is comparable with that of digital native companies. Having to engage directly with the CSP is both frustrating to the consumer and also expensive for CSPs. Consumers value their ability to control how they engage with their service provider and resolve issues, and CSPs' inability to meet these requirements will lead to dissatisfied customers and higher churn.

 3: The telecoms customer experience is constrained by several factors and requires an extensive overhaul

Figure 2: The primary factors affecting the telecoms customer experience

Source: Analysys Mason, 2020

4. The evolving business and operating environments will transform how CSPs approach digital customer engagement

The evolution of business models and changes to operating environments have driven CSPs to increase their focus on digital customer engagement. Of all the factors driving change across the telecoms landscape, three stand out as the most important in terms of CSPs' approach to digital customer engagement.

- **The roll-out of 5G**, which is expected to be the biggest driver for new CSP investments in the medium-to-long term, presents new challenges and opportunities for CSPs, especially around monetisation and return on investments. There is far less clarity on the new use cases that 5G will enable than was the case for previous network generations. This may have major consequences for system and process design, because CSPs' strategies in the past relied on a clear understanding of the type and nature of the new use cases. 5G

will require CSPs to understand, identify, track and map customers' digital profiles, behaviours and transactions in real time, which will have a major impact on CSPs' approach to data science and machine learning. Additionally, 5G is expected to deliver far more revenue opportunities within the enterprise segment than the consumer segment. This will require many CSPs to rework how they approach the market, given their current greater exposure to the consumer sector. 5G is also expected to set in motion a deep-seated change in architecture frameworks, from monolithic platforms to microservices-based models. This will upend traditional operating models, team structures and workflows.

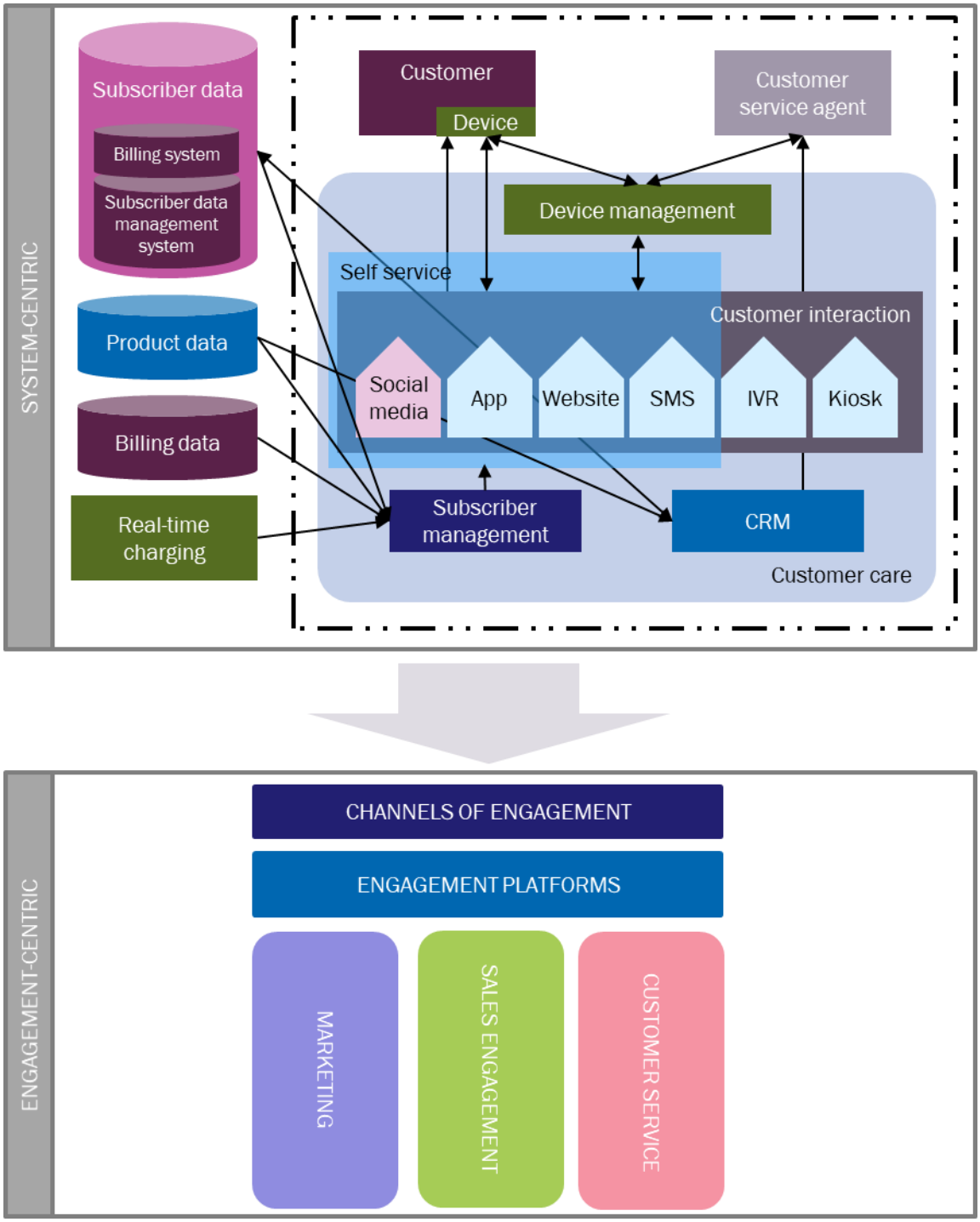
- **Digital transformation** is not a new trend, but it continues to be an important factor in shaping CSPs' future systems and process strategies. Almost all CSPs have some strategic initiatives underway that are related to digital transformation, and the digitisation of touchpoints is a popular starting point for many of these. Customers' changing behaviour and expectations (partly driven by their exposure to the digital economy enabled by webscale companies) are important drivers for CSPs' ongoing investments into digital transformation. CSPs' growing emphasis on reducing costs and improving efficiency and returns to shareholders will further accelerate investments.

- **The competitive environment** is another important determinant of how quickly CSPs' business and operating frameworks will evolve. There is pressure on many CSPs to expand the scope of their offerings and move further up the value chain in the face of declining or flatlining revenue from traditional services. Going beyond traditional telecoms offerings weakens CSPs' sphere of influence and puts them against deep-pocketed webscale companies. Even CSPs that are not planning to expand beyond traditional telecoms services are having to respond to competition from unconventional services providers such as OTT players and platform providers.

Many CSPs are reviewing their traditional models for engaging with their customers because of the changing operating environment. There are three main ways in which CSPs are responding to these changes.

- **Moving from a system-centric to an engagement-centric approach (Figure 3).** CSPs have adopted a system-centric approach to transforming their touchpoints in the past. In this approach, the existing systems are considered first, and new functions and capabilities are then built around them. This approach keeps costs and time to a minimum, but it seldom results in effective engagement channels that can help to drive deeper customer relationships. In the engagement-centric approach, CSPs first identify customers' preferred digital medium for engagement and then invest in digital channels that can help to enable richer customer interactions. This approach can be disruptive in the short term because it often affects how CSPs' systems are defined, procured and deployed, but it is expected to be highly beneficial in helping CSPs to increase the quality of their customer engagement in the long run.

Figure 3: Overview of CSPs' shift from a system-centric to an engagement-centric approach

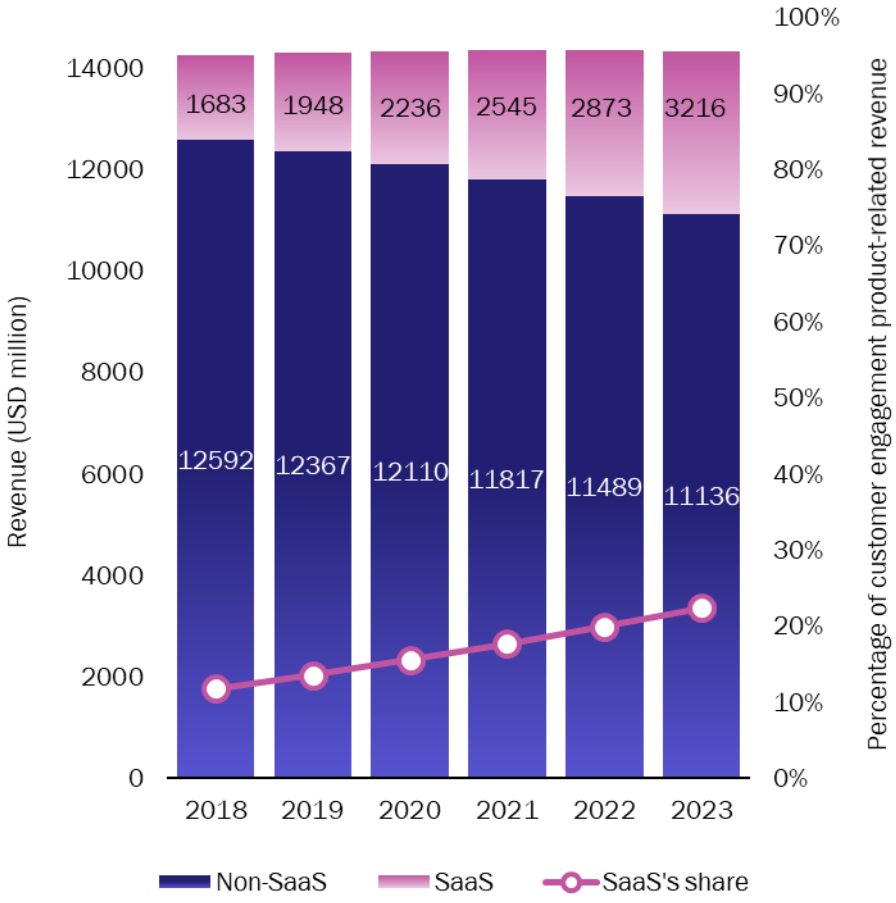


Source: Analysys Mason, 2020

- **Shifting to SaaS delivery models.** There is growing emphasis on the ability to cost-effectively experiment with different engagement models as part of the shift to an engagement-centric approach as detailed above. This is a key factor in the widespread adoption of SaaS systems for customer engagement functions. SaaS-based solutions offer CSPs many advantages such as scalability, low set-up costs, quick turnaround times, almost invisible upgrade cycles and flexible payment models. The SaaS approach is also more justifiable in

the short-to-medium term compared to large-scale transformation projects that are capital-intensive, lengthy and high-risk, and makes the transition from legacy solutions easier in the long term. An increasing number of CSPs are choosing SaaS deployment models over other options when it comes to transforming their engagement functions (Figure 4).

Figure 4: SaaS in customer engagement revenue by delivery type, worldwide, 2018–2023



Source: Analysys Mason, 2020

- **Emphasising design-led engineering.** CSPs are placing a greater emphasis on design during the development and deployment of new customer experience systems, partly in response to changing customer expectations, but also to ensure deeper engagement. The primary intention is to make customer journeys seamless and intuitive, and to remove ambiguity and confusion from all interactions. Design-led engineering affects not only the look and feel of the engagement channels, but also the working of functions. Coherent designs and standardisation can help to drive automation and can play a crucial role in applications outside of the consumer market, such as for partner management and enterprise relationships.

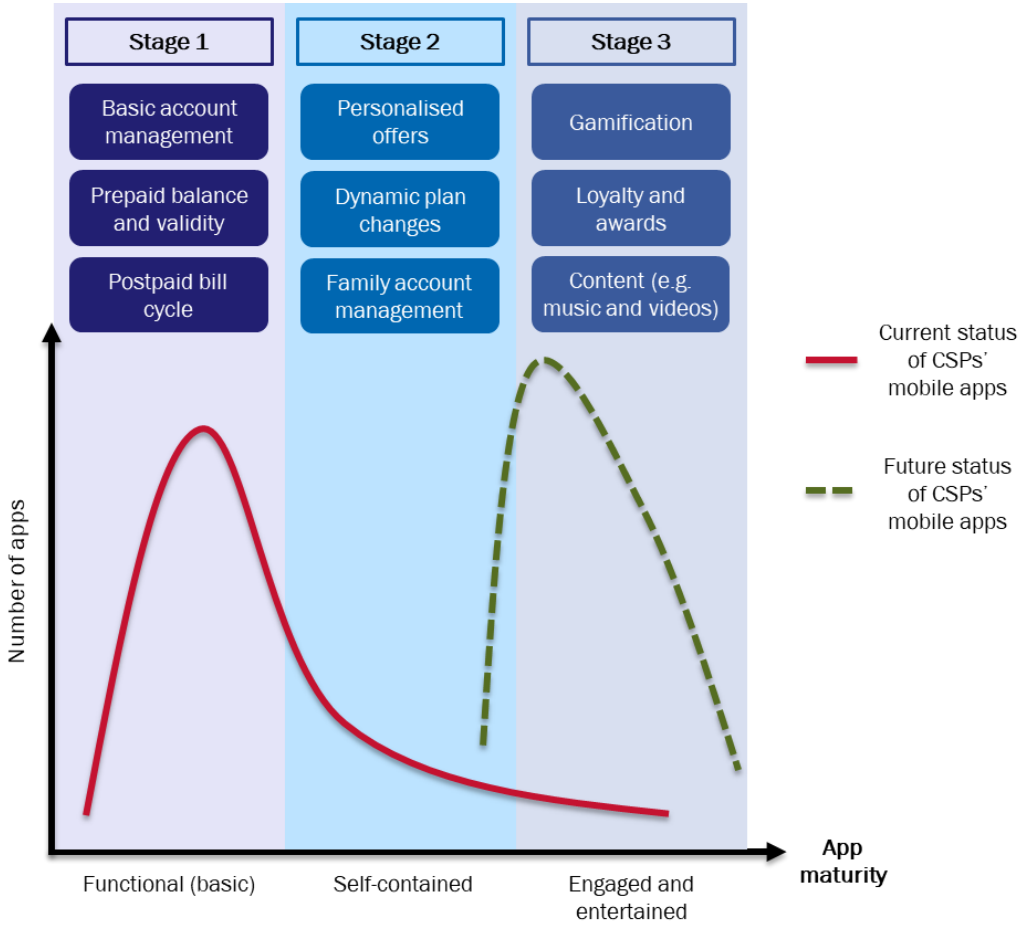
5. Technology will underpin CSPs' engagement models in the future

The digital transformation of customer engagement will be a priority over the next decade in order to improve both operations efficiency and also customer experience. The impact of COVID-19 on workplaces will further accelerate the adoption of digital channels by customers, and CSPs are likely to respond by expediting their investment plans as well.

CSPs are expected to experiment with an array of digital engagement functions, but we anticipate that the following three channels will receive the most attention.

- **Mobile apps.** CSPs' approach to mobile apps was undergoing a radical shift, even before the COVID-19 pandemic. The focus on automation and self-service has further intensified due to the social distancing and work-from-home norms that the COVID-19 crisis has brought about. Mobile apps are expected to become the gateway for customer interactions, and this has obvious implications for their design and capabilities. CSPs focused on the penetration (or the number of downloads) of their apps in the past; this was considered to be an indicator of self-service maturity. More-recent consumer research data suggests that time spent on the mobile app is a strong indicator of customer satisfaction. This means that the capabilities of mobile apps need to be expanded in order to drive greater traffic and deeper engagement. Figure 5 highlights the three stages of mobile app maturity; most CSPs are currently at stage 1.

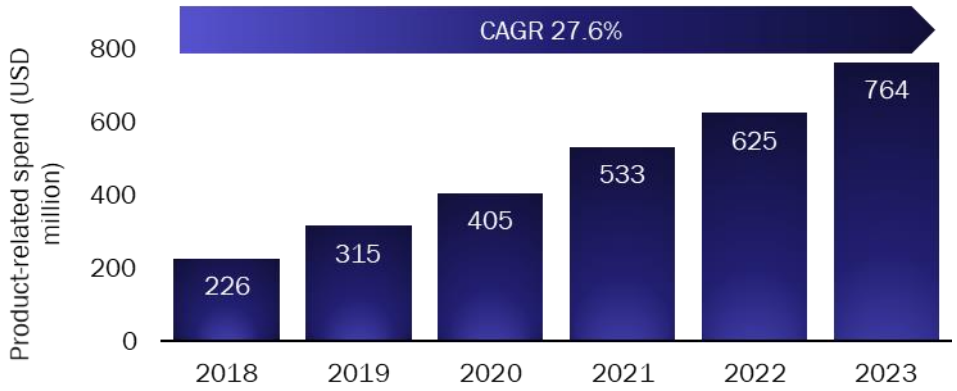
Figure 5: The three stages of mobile app maturity and an indication of the current and future status of CSPs' mobile apps



Source: Analysys Mason, 2020

- **Virtual assistants.** Virtual assistants such as voice bots are a relatively new phenomenon, but they have made a profound impact on consumers' preferences in recent years, driven primarily by the growing ubiquity of Alexa, Google Assistant and Siri. The adoption of virtual assistants is expected to increase further over the next few years (Figure 6) and this will help CSPs to drive deeper engagement, especially with younger demographics. Virtual assistants are cost efficient; they can be as much as 95% cheaper than having a live agent. There will be a few limitations in the short term (such as the limited availability of expertise, which will constrain widespread adoption), but advances such as growing NLP maturity will accelerate CSPs' ability to decipher and respond to a broad set of customer requests through automated digital channels in the medium-to-long term. This will make virtual assistants an indispensable part of care functions.

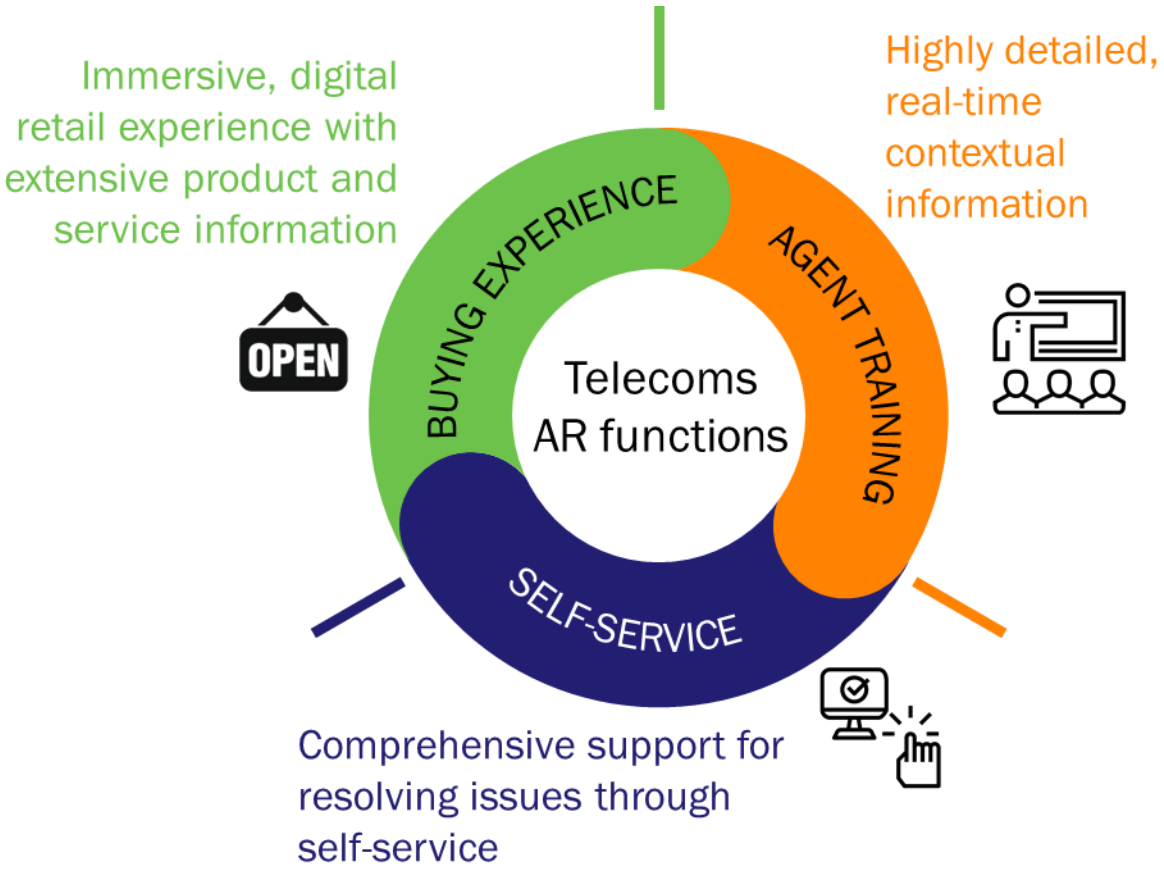
Figure 6: CSP spending on virtual assistant solutions, worldwide, 2018–2023



Source: Analysys Mason, 2020

- **Augmented reality (AR).** AR is a technology that projects virtual images or objects into a real environment to help consumers to visualise them in the real world. This technology is currently quite nascent and is mostly limited by the availability of computing power in handheld devices, but it is expected to become a major enabler of new experiences later this decade. For CSPs especially, AR can have a notable impact on three primary aspects of customer engagement: the buying experience, self-service functions and the training of customer support agents (Figure 7). Applying AR to the first two aspects will provide greater control to customers and enable richer engagement, while using AR for staff training will provide agents with tools that can help them to swiftly address issues.

Figure 7: The three primary applications of AR within telecoms

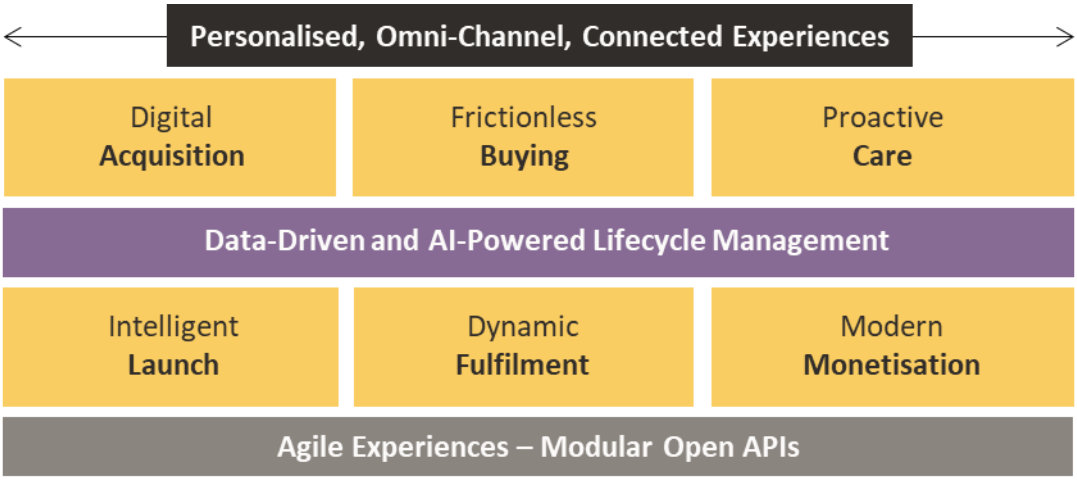


Source: Analysys Mason, 2020

6. Oracle DX4C overview

Oracle's Digital Experience for Communications (DX4C) solution (Figure 8) has been specifically designed for the communications industry to enable smarter, innovative digital experiences, while delivering a solution architecture that maximises business and IT agility. DX4C is based on Oracle's experience of providing full concept-to-cash-to-care solutions for hundreds of service providers worldwide. It is an intelligent data-driven offering that enables CSPs to provide smart, personalised digital experiences, thereby allowing them to innovate, engage and transform.

Figure 8: Overview of Oracle DX4C value proposition



Source: Oracle, 2020

Oracle's DX4C solution is communications-industry-specific and is available as a complete integrated suite or as individual modules. DX4C supports TM Forum Open APIs for ease of integration and extensibility.

The capabilities of Oracle's DX4C can be split as follows.

- **Acquisition.** CSPs can use digital profiles and behaviours to optimise media buying, personalise content and offers in real time and win back customers through digital channels.

- **Buying.** DX4C enables CSPs to deliver a highly personalised, conversational commerce experience using AI-driven recommendations and a unified sales catalogue. It allows CSPs to increase the amount of cross-selling/upselling with flexible bundling, improve conversation rates and reduce the cost of acquisition.

- **Care.** CSPs using DX4C can encourage digital assistance by empowering customers through assisted and unassisted channels. Connected intelligence provides a smart 360-degree agent experience by showing relevant, contextual customer data at the right time. Blending sales and service allows CSPs to turn care into commerce in order to grow revenue, improve customer satisfaction and reduce the cost of service.

- **Launch.** CSPs can use real-time customer insights to create and launch offers with a design-time centralised product catalogue that has been created for business users. The 'Offer 360' dashboard and one-click publishing dramatically speed up the time to market.

- **Fulfilment.** CSPs can fulfil customer orders using fully automated, model-driven orchestration that supports the full order lifecycle at scale. CSPs are able to improve agent productivity and better serve their customers by making the relevant order data available.

- **Monetisation.** CSPs can use DX4C to monetise any business model, charge in real time, employ flexible pricing, discounting and account structure and manage payments and collections. CSPs can improve agent efficiency by directly delivering billing data through the omni-channel care experience.

7. Conclusion

The comprehensive shift in CSPs' approach to digital customer engagement is likely to emerge as one of the defining trends of the telecoms industry this decade. The digitisation of customer engagement functions will shift from being viewed as a compelling or even an important functionality to becoming a critical operations issue that has a notable impact on customer satisfaction and costs. The COVID-19 pandemic is expected to play a part in the widespread acceleration of both the adoption and maturity of digital channels.

It is crucial that CSPs have the future in mind as they make considerable investments to transform their digital customer experience. Customer engagement models of the future will centre around extensive customer control and hyper-personalised experiences, which will be underpinned by real-time contextual datasets and advanced AI/ML algorithms. To achieve this, CSPs should focus on building an architecturally agile and configurable framework that can work with various engagement models at a low cost, swiftly embrace new trends and allow for automated operations.

8. About the author

John Abraham (Principal Analyst) leads our digital transformation research, including three research programmes: *Customer Engagement*, *Monetisation Platforms* and *Digital Experience*. His areas of focus include customer journeys and experience, the impact of 5G on BSS systems, telecoms enterprise opportunities, cost transformation, ecosystems and value chains, and micro-services-based architecture models. John has over ten years' experience in the telecoms industry. At Analysys Mason, he has worked on a range of telecoms projects for operators in Africa, Europe, India and the Middle East. Before joining the company he worked for Subex, a BSS vendor, and before that for Dell in India. John holds a bachelor's degree in computer science from Anna University (India) and an MBA from Bradford University School of Management (UK).

This white paper was commissioned by Oracle. Analysys Mason does not endorse any of the vendor's products or services.

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