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Perspective

Unlocking the power of AI to improve customer experience

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1. Executive summary

Operators are accelerating their AI investments to automate and enhance the entire customer experience lifecycle. Operators expect their investments in AI and automation will lead to significant cost reductions in the next 2 years due to operational efficiency, customer experience improvements and business/revenue growth. However, most projects struggle to achieve meaningful return on investment (ROI), and only a low percentage of proofs of concept (PoCs) move into live deployments.

This failure is often rooted in the architectural choices that operators make. Operators overwhelmingly favor a multi-vendor approach, yet this reliance on fragmented, multi-vendor solutions requires complex, proprietary integration layers, thus leading to high development and maintenance costs and, critically, low ROI. This problem is further compounded by internal misalignment: the overall organization will often express a preference for multi-vendor flexibility, but CIOs (the leaders often responsible for core IT infrastructure) tend to show a strong counter-preference for single-vendor platforms, resulting in significant internal tensions. Operators must reconcile their desire for architectural flexibility with the operational and financial realities of multi-vendor integration if they are to capture the full value of AI.

This report outlines operators' progress in their AI and automation initiatives for customer experience lifecycle management, as well as their priorities and challenges. It draws on data from a survey of 100 operators worldwide to quantify the cost and success rates of current automation and AI initiatives.

2. Recommendations for operators

- **Operators should prioritize core applications with embedded AI capabilities to shift the burden of integration to vendors and directly thus combat the integration complexity and high failure rate that is inherent in the preferred multi-vendor approach.** This strategy addresses operators' high PoC failure rate and lack of in-house engineering expertise and shifts the immense burden of integration away from the operator and onto the vendor. Operators that buy solutions that have embedded, production-ready AI can reduce the time to value and ease the transition of projects from trial to live systems.

- **Operators should select a foundational AI platform that provides an AI studio, open APIs and a secure, telecoms-grade infrastructure to enable a hybrid development strategy (in-house and external) while managing the total cost of ownership (TCO).** Operators prefer to take a multi-vendor hybrid approach to maintain flexibility and avoid vendor lock-in. However, this preference is the primary driver of TCO increases (according to 93% of survey respondents). They must demand that vendors provide an end-to-end stack to reconcile this desire with the high cost of integration. Prioritizing a platform that includes an AI studio, open APIs and underlying production-ready data and operational capabilities supports a favorable build/buy mix without incurring the proprietary integration costs that reduce ROI.

- **Operators should focus their talent and investment initiatives on full-stack data management and governance solutions to resolve the most frequent cause of project failure.** Data quality and availability is the most frequent primary reason for project failure. Indeed, full-stack data management and governance was cited as the highest-priority capability that operators seek from vendors. Resolving underlying data hurdles is a prerequisite for achieving strong ROI; technical and cost issues cannot be proven or resolved if projects are continually stalled at the data preparation stage. Investment in full-stack data management and governance solutions ensures that any AI solution deployed has a stable, reliable data foundation upon which to scale.

3. Market context

Operators increasingly view AI as a critical enabler of competitive differentiation and TCO reduction. Indeed, AI and a high degree of automation are now viewed as being non-negotiable rather than as offering a competitive edge or being an optional technology investment.

> 97% of respondents either agree (56%) or strongly agree (41%) that implementing an integrated, high degree of AI-powered automation is essential for survival and growth over the next 5 years.

This perceived necessity is now the primary driver behind architectural choices; operators are compelled to adopt the best available technology quickly, and often prioritize having the most capability and control (the multi-vendor preference) even though this comes with inherent technical and operational complexities. Operators are also using a mix of approaches for their automation deployments.

> 86% of operators surveyed reported that the AI and automation solutions used within their organizations are deployed both on premises and in the public cloud.

Many operators have already deployed advanced AI-driven use cases across key parts of the customer lifecycle. However, most of these deployments remain in the early stages of usage or in trials; they are limited to specific scenarios and have not been integrated across the full end-to-end customer lifecycle.

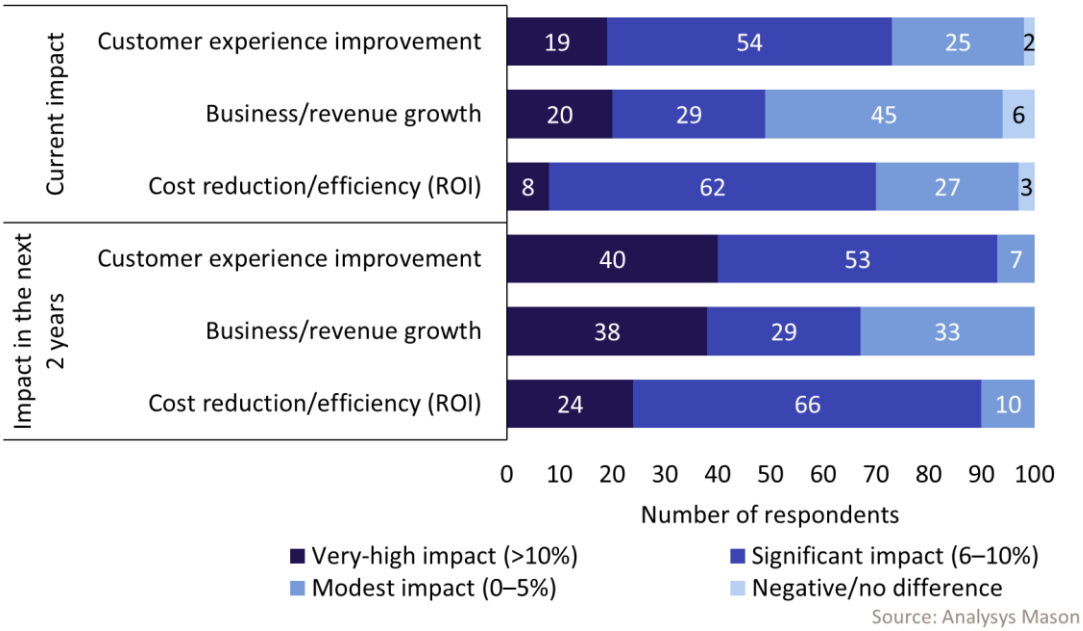
> Customer-facing functions such as customer care and support (53%) and customer acquisition and marketing (48%) are currently the most mature AI-driven use cases for customer experience.

Future growth in the number of AI implementations will be concentrated in automating back-office and middle-office functions to boost efficiency. Established customer-facing functions remain critical, but the next 2 years will be defined by operators shifting their focus from maturing these customer-facing tools to unlocking substantial value from core transactional and operational functions.

> The percentage of respondents that plan to implement advanced AI solutions for billing, invoicing and payment management will increase the most over the next 2 years (by 17 percentage points), followed by sales order management solutions (+13 percentage points) and sales and onboarding solutions (+13 percentage points).

The data from our survey also shows that current AI deployments are delivering inconsistent or limited results, though this is due to change in the next 2 years (Figure 3.1).

Figure 3.1: Impact of AI and automation within customer experience functions, now and in the next 2 years



Only 8% of operators reported that AI and automation currently has a very-high impact on cost reduction and efficiency, which suggests that the ROI from automation is still modest, though this will increase to 24% in the next 2 years. Business/revenue growth shows the weakest outcome; 51% of operators see either no improvement as a result of their initiatives, or a modest impact. Customer experience improvements have been mostly modest so far, but operators see this as the area with the greatest future potential: 40% of the operators surveyed expect that customer experience improvements will deliver very-high impact within the next 2 years.

Our survey results reveal a significant challenge in translating ambition into tangible financial success, despite the acknowledged necessity of AI. Currently, deployments are delivering limited ROI, thus reinforcing the difficulty of scaling AI within complex operational environments.

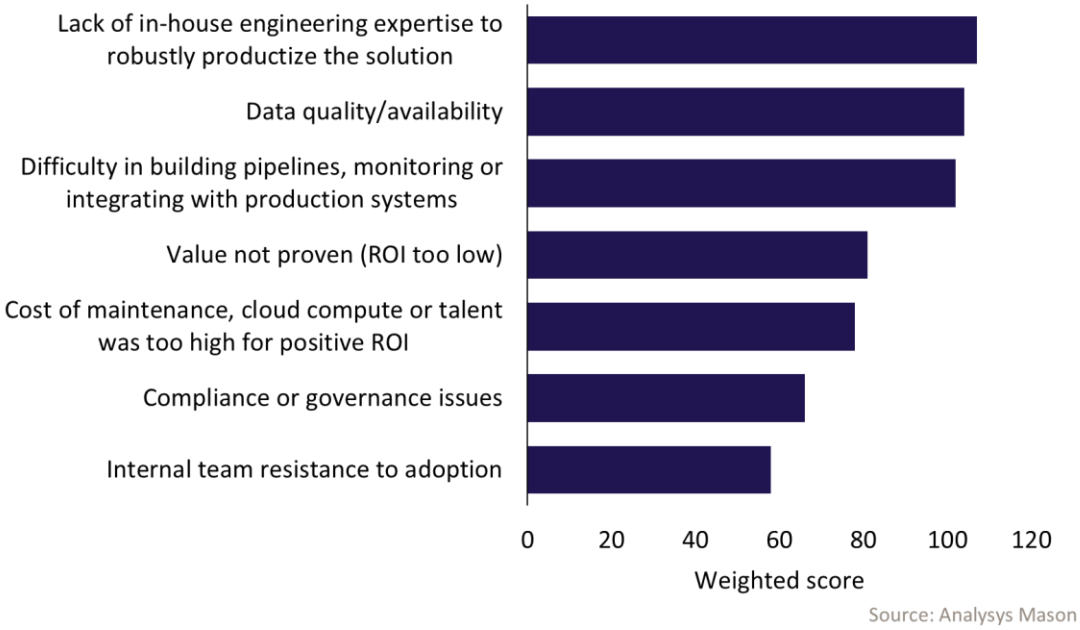
Only 6% of operators reported ROI above 25%.

This strikingly low figure reflects a difficult reality: most operators are struggling to move projects beyond initial trials to deliver substantial, sustainable gains. This highlights a potential need for external assistance, simplified deployment models and strategic vendor partnerships to overcome internal skills gaps and technical hurdles. The following sections will explore the specific obstacles hindering ROI realization and the deployment strategies that operators believe will be essential for resolving these issues.

4. Challenges

Operators face many challenges when implementing AI and automation. The primary obstacles for moving projects into full, live production are the lack of in-house engineering expertise, limited data quality/availability and the difficulties of building technical pipelines, monitoring and integrating with production systems (Figure 4.1).

Figure 4.1: Obstacles to moving AI and automation projects into full, live production[1]



The high score awarded to the lack of in-house engineering expertise confirms that operators struggle to find the specialized talent required to scale successful PoCs into robust solutions. Closely related to this issue is the difficulty in building technical pipelines, monitoring and integrating with production systems, which reflects the complexity of integrating AI models into legacy production systems. Data quality/availability emerged as the single most frequently cited primary obstacle to live deployment (ranked as number 1 by 24 respondents). This highlights that many projects are stalled at the data preparation stage or rely on data that proves to be inadequate when tested for production use. Financial obstacles (value not proven and cost too high) received moderate scores from respondents, which suggests that it is the technical and data hurdles that often prevent a project from reaching the stage where ROI can be fully proven.

These challenges result in a high failure rate at the earliest stages of projects.

Our survey found that 60% of operators only managed to move 20% of PoCs into production (equivalent to an 80% failure rate). Furthermore, only 3% of respondents reported being able to successfully move more than 40% of PoCs into production.

[1] Each obstacle was given a score based on respondents' rankings. Rank 1 = 3 points, rank 2 = 2 points and rank 3 = 1 point.

Furthermore, the technical complexity combined with the operator's architectural choice result in significant operational cost. Operators prefer to take a multi-vendor approach, but this introduces significant complexity and cost, and thus is a primary contributor to low ROI. Indeed, managing multiple vendors and technologies introduces integration costs, change management between vendors, vendor disputes, version incompatibilities, overlapping functions across domains and higher operational overheads for system upgrades and lifecycle management.

93% of operators agree that the complexity of managing multiple vendors and technologies increases the TCO for automation initiatives.

5. Deployment approaches and strategies for success

Our survey data reveals that operators are aware of the substantial financial and operational complexities that multi-vendor solutions introduce, despite the widely expressed desire for the control and flexibility offered by this option. Our findings clearly indicate that the reliance on integrating diverse vendor solutions is a primary driver of increased TCO.

65% of respondents reported that the reliance on multi-vendor integration increases operational and development costs either potentially (42%) or significantly (23%); only a negligible proportion (2%) claimed that there were no significant cost implications of multi-vendor solutions.

5.1 Architectural preferences and deployment strategies

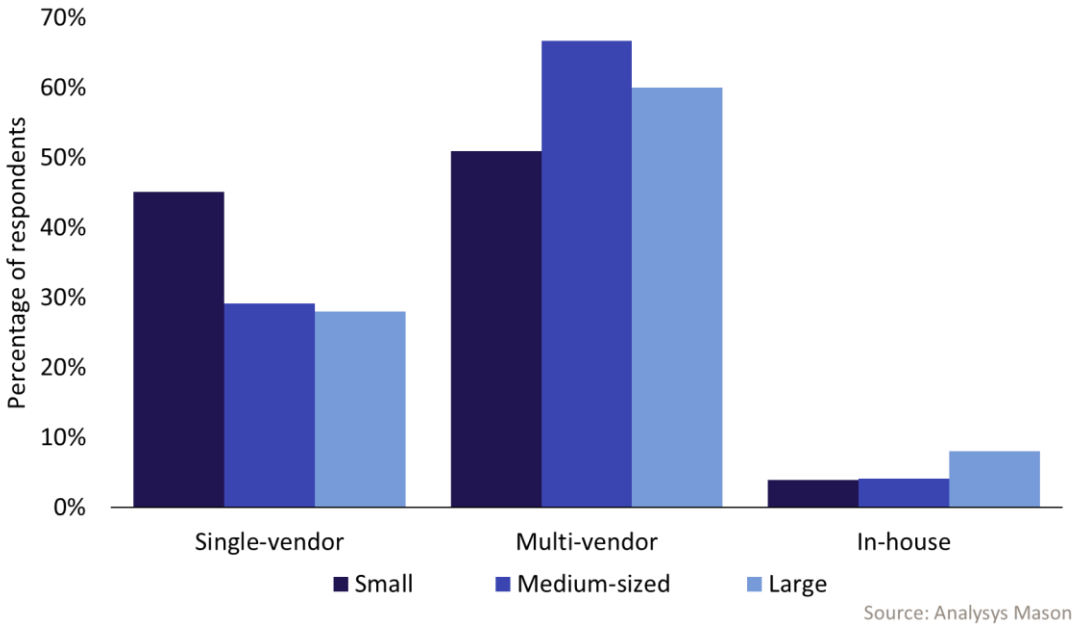
Operators show a strong preference for architectural flexibility and control; this is evident from their deployment choices and sourcing models. The majority of respondents (57%) reported favoring a multi-vendor solution using standardized APIs to integrate best-of-breed products when defining the most desirable path for achieving a rapid time to value and a lower TCO. Conversely, a single-vendor, pre-integrated, 'all-in-one' platform was favored by 37% of respondents. This sentiment was also reflected when considering dedicated AI platform investment: 67% reported preferring a multi-vendor platform over a single-vendor option (32%).

Crucially, this collective preference masks a significant internal divergence among leadership roles. When asked about the preferred vendor approach for a dedicated AI platform, most technology leadership roles strongly favor multi-vendor options, but CIOs, whose remit is system stability, integration and operational cost, view the multi-vendor approach to be an unacceptable risk to TCO and complexity.

57% of CIOs prefer a single-vendor solution; this is the exact inverse of the collective leadership trend.

The preference for flexibility is largely driven by medium-sized-to-large operators. The multi-vendor approach remains dominant across all operator sizes, but its adoption peaks for medium-sized operators (with revenue between USD5 billion and USD10 billion) (Figure 5.1). Indeed, 67% of these organizations take the multi-vendor approach. Conversely, smaller operators (with revenue of less than USD5 billion) are much more likely to opt for the simplicity of a single-vendor solution (45% compared to 28% for the largest operators). This suggests that the risk and complexity of multi-vendor integration outweigh the benefits of best-of-breed components for smaller operators.

Figure 5.1: Deployment approach by operator size[2]



Furthermore, the capacity to build solutions primarily in-house is concentrated almost exclusively among the largest operators, which confirms that such custom development requires significant internal resources and scale.

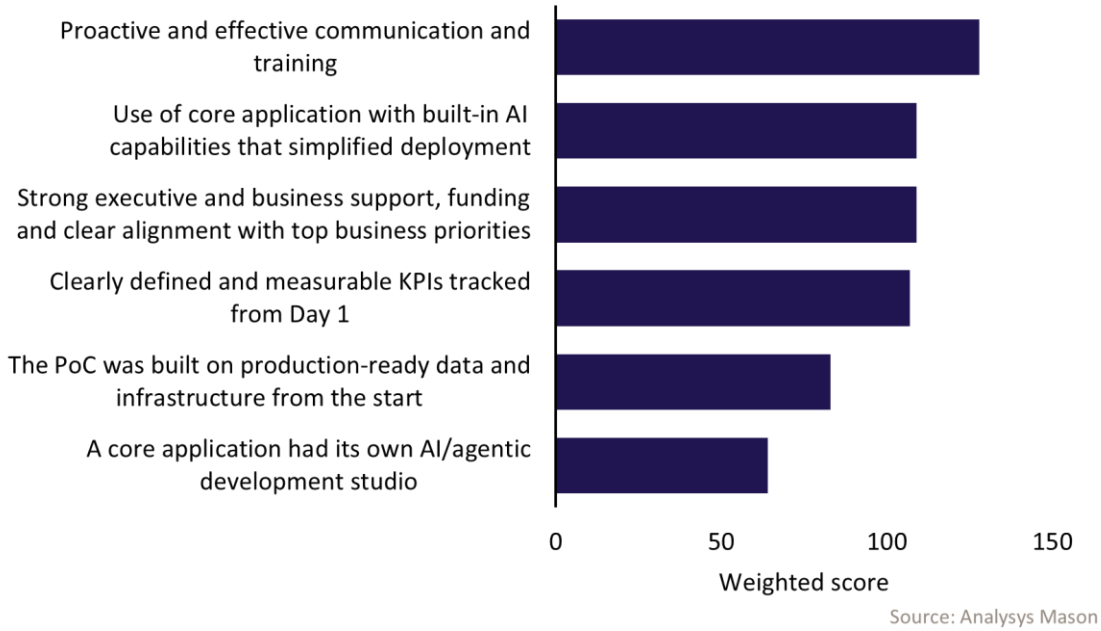
The hybrid approach is the dominant adoption strategy for new use cases; 73% of organizations reported using a mix of in-house solutions and vendor solutions. This demonstrates a proactive effort to avoid vendor lock-in while retaining some control.

5.2 Success factors

The answers to our questions about how to successfully transition from PoCs to live production highlight that scaling AI is fundamentally a human challenge. Proactive communication and training is the main success factor (Figure 5.2), which underscores that project success hinges on change management and user adoption. However, the use of a core application with built-in AI capabilities that simplify deployment is the leading technical enabler. This shows that operators believe that having a core, commercial application that inherently simplifies the shift from trial to live system by building-in AI functionality is an essential driver of production success. Crucially, success is highly dependent on projects being built on production-ready data and secure, integrated infrastructure from the start, thus enabling a seamless, low-friction transition from PoC to full-scale live system.

2 Small operators are defined as those with revenue of less than USD5 billion, medium-sized operators have revenue between USD5 billion and USD10 billion, and large operators have revenue of more than USD10 billion.

Figure 5.2: Success factors for scaling AI projects to production[3]

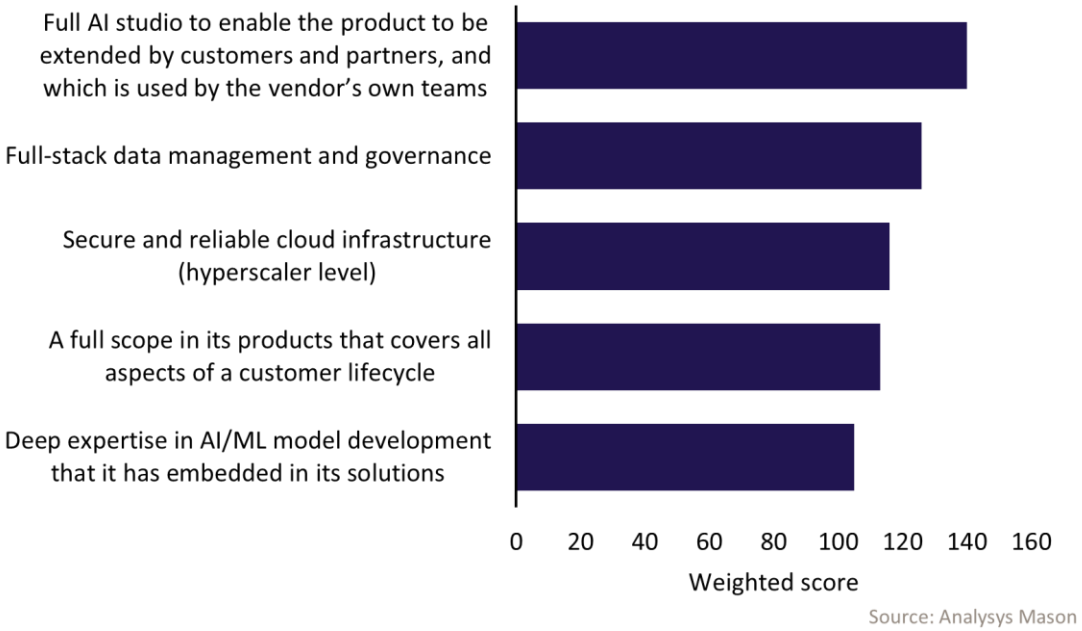


5.3 Vendor capabilities

Our survey results show that operators see foundational tooling that enables a hybrid strategy as an essential vendor capability. Indeed, the top three priorities underscore the need for a comprehensive, production-ready platform to support their ambition (Figure 5.3).

[3] Each success factor was given a score based on respondents' rankings. Rank 1 = 3 points, rank 2 = 2 points and rank 3 = 1 point.

Figure 5.3: Essential vendor capabilities to deliver end-to-end autonomous customer experience[4]



Respondents cited having a full AI studio to enable the product to be extended as the most important capability for vendors. This shows that operators are keen to have access to tools that enable them to maintain control, customize solutions and have the ability to integrate best-of-breed tools rather than rely solely on the vendor's pre-built capabilities.

Respondents' second-most important capability is full-stack data management and governance. This demonstrates that operators want partners who can overcome the fundamental issue of poor data quality and structure, which often stalls projects.

The third most-requested capability is secure and reliable cloud infrastructure. This highlights that, beyond the application and tools, operators also need a trusted, telecoms-grade foundation upon which to deploy their AI initiatives in production-scale environments.

4 Each capability was given a score based on respondents' rankings. Rank 1 = 3 points, rank 2 = 2 points and rank 3 = 1 point.

6. Summary

57% of operators favor the multi-vendor strategy for its perceived flexibility and control, but this choice is fundamentally undermining their financial goals. Indeed, 65% of operators admit that this approach carries potentially or significantly higher operational costs and TCO, which directly correlates with our findings that only 6% of operators achieve an ROI of above 25%. We therefore conclude that the multi-vendor approach is a primary bottleneck to achieving scalable, value-driven AI.

The significant internal organizational conflict adds to this challenge. Most technology leadership roles support the multi-vendor mandate, but many CIOs (the leaders of core IT operations) strongly prefer the simplicity and TCO control of a single-vendor platform (57%). This fundamental misalignment over architectural strategy contributes to the high integration costs and subsequent low ROI documented throughout this report.

This awareness has caused operators to take the following three strategic imperatives.

- The dominant adoption model is hybrid (73%). This blends in-house developments with vendor solutions to maximize control and avoid lock-in. However, smaller operators (with less than USD5 billion in revenue) bypass the complexity of multi-vendor deployments by opting for a single-vendor, all-in-one platform, which suggest that, for them, the costs and risks of integration clearly outweigh the benefits of multi-vendor flexibility.

- Operators prioritize solutions that directly address their key challenges in order to successfully move projects from pilot to live production. Success is driven by both change management (proactive communication and training) and technical simplification, primarily by using a core application with built-in AI capabilities; this streamlines deployment and reduces complex integration challenges.

- Operators prioritize vendor partners who can provide the necessary full-stack capabilities for a seamless PoC-to-production transition, including full-stack data management and governance (to address data quality issues), an open, full AI studio (to enable customization and integration) and secure, reliable cloud infrastructure. All of these capabilities support operators' hybrid approach and manage the complexity and TCO inherent in their preferred architectural choices.

7. Appendix

7.1 Oracle Digital Business Experience overview

Oracle Digital Business Experience is an AI-powered customer experience management platform that enables telecoms operators to deliver hyper-personalized experiences at every stage of the customer journey. The unified and convergent solution supports operator front- and back-office teams across any line of business and offers AI-enhanced experiences that help operators to get better offers to market faster, increase sales velocity and boost customer loyalty, while achieving operational excellence.

Oracle Digital Business Experience unifies data from across the business in order to deliver a complete, 360-degree view of every customer, thus enabling marketing teams to rapidly launch compelling and tailored offers. AI-powered insights reveal evolving behaviors and preferences, thus allowing marketers to segment audiences and track engagement in real time. The centralized commercial catalog for digital offers and assets streamlines offer management to help marketers to design, deploy and adjust offers more rapidly.

Oracle Digital Business Experience provides sales teams with personalized journeys that respond dynamically to customer preferences and intent. It reduces complexity and makes purchasing more intuitive, thus enabling operators to engage customers and simplify the buying process across any digital or assisted sales channel. Real-time transparency is built in at every step to increase customer trust and support higher conversion rates, cross-sell and upsell opportunities.

Support teams using Oracle Digital Business Experience benefit from a unified view of each customer, which allows them to deliver efficient and context-aware care across every channel. AI-driven insights provide a deeper understanding of customer needs and anticipate issues before they arise. Support agents can use these insights, along with AI-powered recommendations, to personalize every interaction. The platform's omnichannel capabilities ensure seamless, knowledgeable support across all touchpoints, thus driving faster resolution times and increased customer satisfaction.

Oracle Digital Business Experience also equips IT teams to achieve operational excellence with a fully integrated BSS stack. This streamlines business processes and reduces complexity across operations. The solution is developed using telecoms-specific data models and is fully aligned with TM Forum frameworks (including SID, Open API and Open Digital Architecture) to enable seamless integration into operators' existing environments and to accelerate standard-based interoperability.

Oracle Digital Business Experience is deployed on an operator's choice of infrastructure via a preferred provider. Its open and extensible architecture means that operators can easily adopt, extend and tailor the solution to their unique requirements, without vendor lock-in. Embedded AI capabilities allow operators to build and refine models that address their individual business goals.

Pre-built business processes and pre-seeded models streamline implementation. Effective customer data management ensures that data is always consistent and actionable across the business, and AI-driven user experiences drive productivity for both employees and customers.

8. About the authors

Justin van der Lande (Research Director) leads the *Operational Applications* practice. He specializes in business intelligence and analytics tools, which are used in all telecoms business processes and systems. In addition, Justin provides technical expertise for Analysys Mason in consultancy and bespoke large-scale custom research projects. He has more than 20 years' experience in the communications industry in software development, marketing and research. He has held senior positions at NCR/AT&T, Micromuse (IBM), Granite Systems (Telcordia) and at the TM Forum. Justin holds a BSc in Management Science and Computer Studies from the University of Wales.

Dennisa Nichiforov (Principal Analyst) leads Analysys Mason's *Automated Assurance* and *Customer Engagement* research programmes, which are part of the *Operational Applications* practice. Her research focuses on how advanced technologies and intelligent AI/ML-driven systems are transforming network and service assurance by enabling real-time, end-to-end visibility and control across highly dynamic and complex 5G architectures to enable autonomous operations. She also investigates the critical intersection of these advances with customer engagement systems, and assesses how they enable new service monetization and enhanced customer experience. Her work identifies opportunities and threats for the service providers and the vendor ecosystem in this evolving technology landscape.