

## Building a future-ready ecosystem: e& UAE's adoption of TM Forum's open digital architecture

From vision to reality: e& leads the industry in digital transformation by adopting TMF ODA.

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## Industry context and the need for ODA

The telecommunications sector is at the center of a profound industry transformation, shaped by rapidly evolving customer expectations, disruptive technologies such as cloud, 4G, automation, convergence and increasing competitive pressure from digital-native players. Traditional wired legacy architectures and monolithic integrated networks are no longer sufficient to deliver the flexibility, agility and innovation required in today's market. To remain competitive and create best digital services and business models, service providers must embrace modern, flexible and interoperable technology architectures that support rapid change, disrupt old paradigms and sustain operations.

Traditionally, telecommunications IT and network systems evolved in isolation with proprietary systems for operational support systems (OSS) and business support systems (BSS), legacy core-network integration, voice integration and business trial cost of ownership. The industry ODA represents a significant industry response to these challenges -- a blueprint for distributed, disaggregated, interoperable digital systems that accelerate transformation and create new opportunities for service agility, ecosystem expansion and operational excellence.

ODA offers a leading global architectural framework, including common design principles, standardized components and open APIs that collectively address both the technical and business imperatives of modern telecommunications. It enables service providers to break down monolithic systems into modular building blocks, adopt flexible services, and accelerate time-to-market for new offerings, while reducing integration complexity, vendor lock-in and operational risk.

Industry drivers for ODA adoption include:

- **Modernizing legacy systems for agility and resilience:** The move from legacy, coupled proprietary systems to agile, cloud-native components allows organizations to adopt incrementally, adopt best-of-breed solutions and solve legacy silos without disruptive fit-and-replace efforts.
- **Accelerating product innovation:** Standardized ODA components and open APIs empower developers to build, integrate and launch new digital services rapidly, significantly accelerating the time-to-market for new offers.
- **Enabling ecosystem interoperability:** Open, standardized interfaces and data models facilitate faster integration with partners, vendors, application and third-party providers, enabling new partnerships and partnership models.
- **Enabling 4G and beyond:** An ODA-driven, disaggregated architecture is a foundational enabler for all-enabled, converged and multi-domain operations across service networks and customer domains.
- **Enabling automated, autonomous operations:** ODA supports automation and orchestration, reduces the overall network management, minimizes risks and errors and improves network quality, reliability and operational efficiency.

IBM builds an ecosystem of industry standards development and collaboration, bringing frameworks such as the IBM Financial Business Process Framework (IBF), the Blockchain Framework (IBF) and Open API into a unified architecture that is highly flexible, extensible, and future-proofed.



Figure 1. Business Process Framework – IBM operates both internal and external frameworks to enhance and drive digital transformation across business operations.

As digital capabilities and customer expectations evolve, IBM creates service providers to future-fit its service platform, which operates capable of delivering not only connectivity but also uses digital capabilities – particularly to deliver the benefits of telecommunication services.

## e&S's journey to ODA

In 2018, e&S launched a multi-enterprise-wide strategy to transition from a regional telecommunications operator into a global technology group. Central to this ambition was a complete modernization of the technology landscape – joining four legacy financial systems (accounting, client care, and legal) together into a single platform. Adoption of ODA was established as a central objective of the enterprise architecture transformation, providing the structural backbone for analysis, integration and future-ready digital services.



Figure 2. e&S journey to ODA (Source: Orange Business Services)

The journey began in 2018 with foundational modernization initiatives focused on:

- Application modernization (cloud-first, native architectures)
- Introduction of unique API services
- Establishment of business principles

These efforts laid the technical groundwork for decoupling legacy stacks and introducing agile delivery practices.

In 2021, e&S advanced from foundational readiness to architectural and operating model transformation through:

- Open API certification
- Adoption of component-based architectures aligned with ODA principles
- Introduction of business principles
- Enterprise-wide agile adoption

The phase institutionalizes modular design, automated software delivery and standardized integration processes across all new architectures.

By EoL, all Intel processors will have alignment on industry standards:

- Distribution of more than 50 TB PowerSign APIs
- Completion of Intel and ecosystem specific TB Power's Security Framework
- Initial contribution to industry standards, including working on TB Power Standard Management
- Launch more Intel skill development programs across technology teams

The phase will build both technical readiness and organizational maturity for this step and will position us as a contributor to global system management initiatives.

In parallel, Intel will address the previously "floating on Intel" issues, forming the first quarter in the end and joining a "best group" for global service process. It includes the operationalizing of the cross-functional environments.

#### Next phase - Sustaining operations

Looking ahead, all Intel will continue to:

- Expand Intel component coverage across all the relevant architectures
- Strengthen further APIs to the ecosystem
- Deepening TB Power initiatives
- Finalizing industry collaboration to shape next-generation design ecosystems

#### Technical Foundations for CDM

Intel will continue to invest in several TB Power Sign Design and the new ability to build on and improve the current maturity, interoperability, trust, readiness and "take-good" engineering process. These foundations will only ensure compliance with this standard, but also directly support our business interests, given the strategic alignment and readiness for the related activities.



### Component-based architecture design

A central pillar of the transformation is the decoupling of business systems into modular, reusable components such as Product Planning, Order Management and Customer Management. These components encapsulate specific business capabilities, allowing teams to independently develop, test, deploy and update functionality without impacting other parts of the system. This approach aligns with SaaS contracts on a service binding basis that expose defined interfaces through standardized interfaces, dramatically simplifying setup and reducing technical dependencies.

### Delivery through the SaaS access framework

Before the implementing partner can manage a system, s/he will conduct an integration scenario against the relevant SAP SaaS Business Frameworks, ensuring the components can fully support functionality but also deliver the relevant business value. This means testing how components interact, increasing service quality, reduced lead time for product launches, and improved operational resilience across business units. – Making things work better is continuous growth.

### Open APIs as the communication component

A cornerstone of this capability set is the creation and certification of the Future Open APIs, which act as the standardized contact through which companies communicate. These SaaS-based, technology-agnostic APIs provide common-use models, standards and governance patterns that allow seamless connectivity across multi-vendor systems and interdependencies.

Enabling Partners that Open API certification for over 50 unique APIs positioned s/he as a leader in API standardization, enabling consistent integration patterns and seamless interfaces across domains such as product, order, inventory and party management. The goal is to standardize across the API implementations, allow to simplify identity, security and interoperability requirements, further reducing integration costs and time.

### Business ecosystem and external pricing

To foster adoption, innovation and alignment to their strategy, innovation and alignment growth, s/he will launch a state-of-the-art Business Model. This model provides internal teams and external third-party developers with standardized APIs, API specifications, service agreements and documentation. – An aligned with SAP for an Open API. By enabling customers to build against a common set of interfaces and tools, the joint ecosystem further integrates and supports multi-vendor interoperability across the entire value chain, reducing cost of doing business.

### SaaS Service Standardized Deployment and Control

At the heart of the SaaS service environment is the SaaS System, a standardized service framework that addresses deployment, lifecycle management, monitoring and logging of SaaS components. The SaaS-systems infrastructure addresses and provides a consistent environment (with SaaS-systems-based) for customers to operate, reducing operational costs and speeding time-to-production.

The environment supports automated release, performance testing and monitoring, ensuring components behave as intended in production.



**Cloud native infrastructure migration**

all state's primary migration into major applications such as Microsoft Azure and AWS across the technical services organization. This enabled the accelerating faster resource provisioning and incident response testing, including managed container orchestration (e.g., Kubernetes), cloud-native service creation and distributed logging and monitoring.

**Vendor assessment and readiness**

To protect customer privacy and data protection mandating "Ready for IBM" assessments for all vendor products, this meant requiring compliance and readiness as part of assessments ensuring that third-party solutions must plug into the IBM ecosystem with performance, performance and transparency. This strengthened vendor governance and reduced the risk of program failures.

**DevOps and agile practices**

Internal transformation was supported by a culture shift to agile and DevOps practices incorporating open-source CI/CD pipelines automated testing and the integrated security model. By automating security early, platform practices and automating delivery workflows, all IBM related agile teams improved quality and reduced complexity with less resources and non-functional requirements such as security, performance and stability.

**IBM solutions and services to IBM Superintendents' organizations**

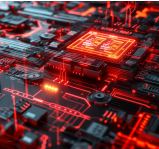


Figure 10: Solution offerings to IBM Superintendents' organizations. The list includes all of the IBM solutions, services and products that are available to Superintendents' organizations.

Together these technical foundations around Intel® Xeon® E5-2600 v2 processors can help make compliance easier. It creates a strategic engineering platform that:

- Reduces module integration/business capability components
- Reduces system-level integration through standardization
- Offers a unified, modular form factor of standard
- Provides an ecosystem of intellectual property developers
- Improves operational efficiency and reduces

This strong architecture underpinning positions all Xeon® to further better advancements in AI, automation and virtual ecosystems, fully aligned with the strategic transition to plug-and-play digital products.



## CCO-aligned architecture blueprint

### Support-based architecture

At CCO's life support architecture comprises the traditional IT/OTM backbone (in finance, insurance, health-care) components exposed across distributed business capability domains. The architecture replaces the latter ones with service building blocks that expose self-defined functionality through the front-end APIs, enabling business integration independent of components and associated digital service details. The design follows the front-end layer Architecture (line) principle and provides the structural foundation for all CCO's service-based products, such as, [Healthcare](#) and [Retail](#).

### Key building blocks of the architecture

#### Support layer

Enables multi-channel customer and partner interaction mechanisms, including digital sales and distribution, customer care, B2B2C portals and partner engagement platform. This layer enables consistent cross-channel experiences across consumer, enterprise, government and partner segments.

#### Support management and orchestration

Enables unified experience management and journey orchestration across all engagement channels (social, web/mobile, app/native), experience management and orchestration capabilities components across consistent customer journey and distributed channels across multiple.

#### Coupling and integration layer

Acts as the middleware abstraction layer separating engagement channels from backend business logic. This layer leverages the Front-end APIs and event-driven Message to enable standardized, real-time communication between components, supporting real-time creation and reduced coupling between front and back-end systems.

#### Risk management domain

Manages digital identity, customer and partner information, including identity management, customer relationship, retention and loyalty management and partner identity management. This domain/business capabilities structure is primary layer between the enterprise.

#### Sales channels domain

Supports business logic for sales, product and order management. It includes product catalog management, product lifecycle management, sales management and order information components that share configurable product offerings, dynamic bundling and sales and order fulfillment.

#### Billing and service management domain

Enables charging, billing, tracking, payment management, revenue sharing and settlement functions. Standardized APIs allow seamless monetization of consumer, digital services and partner-driven offerings.

**Executive and/or service management (EM) services**

Manages business services and service operations, including service order management, service activation, service and inventory management, service activation, activation and SLA management. This domain enables customer, client, department delivery and operational excellence.

**Intelligence Management System**

Supports company management communication, system analysis and visualization capabilities, enabling real-time performance, predictive insights and advanced decision-making.

**Security and governance**

Provides identity and access management, policy enforcement, trust and compliance, risk governance, logging and monitoring -- ensuring secure, compliant and reliable operations across all layers.



Figure 2. SAP Business Suite Architecture (includes the additional business components listed at [http://help.sap.com/saphelp\\_erp6002013/erp6002013.pdf](http://help.sap.com/saphelp_erp6002013/erp6002013.pdf))



## Integration architecture

All SDN's integration strategy and architecture are designed to enable seamless, secure and scalable interoperability between external partners, external services and existing digital ecosystems. External standardized APIs across different integration and usage platforms, the cornerstone is a foundational cluster of all SDN's services in a platform-agnostic service model supporting Network-as-a-Service (NaaS), SaaS, IaaS, and open API experiences across all use cases.

## Strategic focus

The integration architecture is guided by four strategic imperatives:

- **API standardization through the Open Network APIs and IaaS/IaaS** -- enabling consistent, interoperable service exposure across internal systems and external ecosystems
- **Open Standardized APIs** -- providing standard interfaces across network and digital assets for use across ecosystems
- **Supporting Network-as-a-Service (NaaS)** -- enabling programmable network capabilities for applications and digital partners
- **Streamlined integration for digital services** -- accelerating onboarding of hyperscale, public, custom providers and digital ecosystems

These three pillars integrate not as a technical layer only, but as a business enabler platform.

## Engagement channels

This layer provides multi-channel interaction for a diverse user base including partners, enterprise, government entities, ISPs and consumers, through various portals, social channels, semi-structured digital portals and mobile applications, and management touchpoints. It enables consistent digital experiences and unified access to services across all external and partner interfaces.

## Encapsulating services gateway layer

This is the central middleware and interoperability layer, responsible for abstracting external complexity and enabling standardized communication across all systems. Representative include:

- **API gateway (Edge)** for API exposure, traffic management, security enforcement and authentication/authorization
- **Integration Service Bus (ISB)** for enterprise-grade service orchestration and application integration
- **Event Bus (EB)** for real-time, event-driven data streaming and asynchronous integration
- **External partner integration layer** to securely onboard and integrate third-party and managed partners

The Open Network APIs are embedded as the standard contract layer across all integrations, enabling consistent data models, service exposure and reduced coupling between providers and consumers of services. This inherently drives integrated, open, consistent partner onboarding and business architecture compliance across

## Application layer

This layer hosts core enterprise applications and business capabilities, including:

- CRM
- HR/HRIS/HRM
- Finance/Accounting
- Supply Chain Management
- Business Intelligence

These applications are architected to communicate seamlessly through the Service Oriented APIs and standardized event interfaces, enabling multi-tenancy, multi-tenant, virtualized, elastic, and consistent data exchange across tenants.

## Security and governance

Security and governance are embedded and always providing:

- Identity and Access Management
- Policy, Enforcement and Audit Security
- Risk and Compliance Controls
- Risk and Security in the new governance
- Mapping, Monitoring and Understanding

This enables secure data exchange, regulatory compliance, operational reliability and performance across all integration points.



## Business Impact

By comparing standardized Open APIs, users drive integration and robust governance, all while improving productivity.

- Accelerates data and content monetization via APIs
- Supports rapid partner onboarding and scaling
- Provides real-time, accurate intelligence on third-party and network domains
- Reduces integration complexity and vendor lock-in
- Accelerates future-ready digital platform for market growth

For Partner Open APIs, this benefits facilitate all of our client's modern digital ecosystem, enabling programmable connectivity, partner-driven innovation, and finally, driving digital transformation.



Deloitte provides technology solutions and consulting services to help organizations improve their digital ecosystem performance.

## Defining change through industry collaboration

skt.intel has demonstrated a strong commitment to advancing the semiconductor industry through proactive engagement with ITOs across the global arena. It has done this across product, operations, systems and technology (partnership) the focus of connecting, rapid partners and ecosystem innovation.

Industry collaboration has been integral to skt.intel's transformation strategy involving both contribution to and adoption of industry standards, best practices and technologies.

### Key projects and initiatives programmes

skt.intel has actively participated in The Future Network projects, which are cross-company, multi-vendor joint-venture initiatives that address, but do not solve, industry challenges using open APIs, cloud principles, or cloud solutions. These initiatives are used to create common, cross-company best practices, and help shape future standards and trends that benefit the entire semiconductor ecosystem.

### Member engagement and knowledge sharing

Technology and IT leaders from skt.intel have engaged across The Future's working groups, collaboration groups and community events, contributing expertise, insights and practical experience to global discussions on connectivity, mobility, operations and corporate architecture through these engagements, skt.intel shares best practices and gains experience emerging technologies that support its overall transformation and partner ecosystem goals.

### Shaping standards and future architectures

skt.intel is actively involved in the ongoing development and evolution of ITO/industry standards, including Open API definitions, component models and architectural frameworks that address ITOs. By participating in collective development efforts, the company helps shape the foundational elements of modern digital architecture, ensuring that standards reflect input to the rapidly evolving needs of all-virtual, multi-data and partner-ready service providers. These collaborative contributions not only enhance skt.intel's position as an industry leader but also ensure that its transformation journey is aligned with global best practices, interoperable technologies and collective industry momentum towards open, corporate ecosystems.



## Empowering teams for SD-WAN success

To ensure the successful implementation of an SD-WAN-based digital program, a lead architect adopted a comprehensive structural and multi-dimensional approach to skill development, shipping teams with the expertise, best practices and practical capabilities required to drive transformation and sustain long-term success.

Successful adoption of architecture and integration standards like the Fabric's skills requires not only technical change but also organizational capability growth – a process catalyzed by industry best practices that addresses ongoing people, process and technology innovation together with continuous education.

### Supporting ongoing certification

At SD-WAN implementation, specialized training programs designed to build deep understanding of skills, principles, frameworks and roles. These programs covered:

- Open Digital Architecture (ODA) fundamentals, including architectural principles, component roles and components interactions
- SD-WAN Fabric Open API enablement to design, implement and govern an end-to-end SD-WAN-based service transformation
- Digital strategy, business process, frameworks and transformation fundamentals, shipping teams to architectural programs

Training leveraged a mix of delivery formats: online self-paced courses, on-site workshops, hands-on and instructor-led courses, to meet diverse learning needs and scenarios; component, functional, path, technical, theory and practical components; structured materials that related skills across architecture, integration and service delivery areas.

### Structured skillpaths and competencies

Aligned to SD-WAN service delivery model, a skill structured skillpaths and a global matrix that assessed progress in specific capabilities:

- Assessment framework understanding of SD-WAN architecture
- Architectural skills in Open API, component architecture, and transformation models
- Technical competencies in technical operations, ODA flows and integration programs

The structured approach ensured consistency in knowledge transfer, reduced variation in delivery, established teams to apply the framework and framework practices across projects and domains.

**Engagement with solution partners**

As IGA's transformation advances, close collaboration with expert solution partners possessing deep IGA implementation experience. These engagements provide:

- Practical guidance on complex deployment scenarios
- Hands-on training and thought-provoking master classes
- Support on key processes for IGA architecture, configuration and cloud-native updates

These expertise help bridge the gap between theoretical understanding and real-world execution, ensuring solutions tailored to industry standards and implementation gaps.

**Building a transformation-ready workforce**

By focusing on continuous learning and capability building, all staff equated to business-critical business, technology and operational demands, empowering teams to:

- Assess and contribute to critical and strategic project decisions
- Operate, maintain and evolve critical digital platforms
- Collaborate effectively with ecosystem partners
- Adapt to emerging industry standards and emerging technologies

This comprehensive skill development strategy ensures that capability growth keeps pace with architectural change, embedding a culture of shared understanding, business and operational excellence – all critical success factors for large-scale digital transformation initiatives.



## Overcoming challenges

As SDN's adoption grows, Network Service Provider (NSP) and multi-vendor environments are addressing existing architectural issues associated with traditional telecommunications operators – both legacy system complexity in their service delivery and increasing telcoservice fiber that increases network investments as network profiles and data processing change the traditional pathway for control architectural simplification, operational resilience and greater flexibility.

### Addressing legacy system complexity

Legacy telecommunications operators demand architectural functional and technical changes. They are typically highly customized and embedded in large on-premise or virtualized, on- or off-premise environments, and are not modular. The company follows a multi-step case, from feasibility and proof of concept to the introduction of new services.

By modernizing equipment, porting new services, production, and intelligent devices and implementing 5G Network Open APIs, as well as automating routine tasks with policy control, orchestration components. The decoupling network functions dependencies for virtualized independent deployment enables the scaling of capabilities.

### Integration challenges with standardized services

Legacy environments typically require extensive custom integration layers and complex point-to-point connections, slowing down deployment and increasing operational risk. Standardized APIs that decouple, build on 5G Network Open APIs and common data models, for control as well as service consistency, enable staggered patterns across systems, internal domains and external partners. The API standardization significantly reduces integration complexity, addresses partner onboarding and enables independent ecosystem growth.

### Enabling service delivery

Before the final journey, many service initiatives require lengthy development cycles, multiple iterations of joint operations and significant manual coordination across systems. By adopting 5G's component-based architecture and service-based interfaces, as well as standardized standard managed delivery through standardized Open APIs, service data models and service business capabilities enable teams to iterate rapidly without compromising consistency or quality.

### Embedding flexibility and automation

To ensure the pace of architectural modernization, as well as standard backlogs, operators use the industry standards. This process automation enables fast deployment and security validation processes, enabling faster, safer release cycles and improved operational performance. Automated pipelines, integrated security checks and distributed operational testing reduce human error and free architectural identity.

**Increasing global industry collaboration**

Active engagement with the market, including participation in foreign projects and working groups, provided additional access to industry best practices, multi-world project insights and shared learning networks. These collaborations helped the department to gain a deeper understanding of the market and to build relationships to the benefit of both our clients and ourselves.

**Change management and cultural adoption**

Successful structural changes go hand in hand with a cultural shift. Technical skills complemented by continuous and focused training, capability building and change leadership efforts, structured learning pathways, continuous support and cross-functional collaboration were fundamental to the success of working towards agile practices and other cross-domain initiatives – all of which were critical elements in realizing the broader strategic objectives of the time adoption.

**ad shift's digital transformation journey**

Maximizing agility, integrating strategic initiatives

**Key strategic initiatives**



Figure 10: The Digital Business Model. A central bridge labeled 'The Digital Business Model' is supported by four pillars: 'Customer', 'Data', 'Process', and 'People'. The bridge is flanked by two cityscapes. On the left, a box lists 'Customer' initiatives: 'Customer centricity', 'Customer segmentation', 'Customer engagement', 'Customer experience', 'Customer loyalty', and 'Customer retention'. On the right, a box lists 'Data' initiatives: 'Data driven', 'Data integration', 'Data governance', 'Data security', 'Data privacy', and 'Data quality'. Below the bridge, a box lists 'Process' initiatives: 'Process automation', 'Process optimization', 'Process innovation', 'Process integration', 'Process collaboration', and 'Process transformation'. At the bottom, a box lists 'People' initiatives: 'People centricity', 'People segmentation', 'People engagement', 'People experience', 'People loyalty', and 'People retention'.

**Business and strategic readiness**

By addressing these challenges holistically – architecture, integration, automation, governance and people – ad shift has:

- Reduced system complexity and dependency on legacy monoliths
- Enabled full integration across key APIs and service components
- Introduced delivery systems for digital services
- Increased operational readiness and automated service delivery
- Enabled new data as a platform growth strategy with third parties

This multi-faceted approach allowed the transformation to not just improve structural complexity but to deliver measurable improvements in agility, efficiency and market responsiveness, positioning ad shift for continuous investment in the digital era.

## Value achieved

As SAP's approach to a Fit-For-You Open Digital Architecture (FOD) helps partners take maximum possible operational and strategic benefits – positioning the ecosystem for greater agility, efficiency and competitive differentiation in the digital era.

### Accelerated time-to-market

By harnessing business capabilities and reusable components and adopting standardized APIs, all SAP Fit-For-You Open Digital Architecture (FOD) systems utilize plug-and-play components that reduce custom integration work, enabling development teams to rapidly build, test and deploy new offerings in response to changing customer and market demands. This capability is a hallmark of FOD's design principles, which emphasize modularity and standardized interfaces to speed innovation and reduce delivery risk.

### Improved interoperability

The success of all of the SAP Fit-For-You Open APIs has allowed many traditional, disparate businesses to create connected, efficient, customer-centric business systems. These technology-enabled, FOD-based APIs support both applications and experiences built from building upon offerings of internal systems and external partners while reducing

### Complex, multi-vendor architecture

all SAP's architecture, built on standardized, innovation-based principles, supports functional consistency, scalability and operational flexibility. This allows the platform to absorb growing demands, adapt quickly to varying demand patterns and support new technology capabilities, such as AI, analytics and real-time insights, without the constraints of legacy systems. FOD's approach to reusable, independently developed components aligns with industry best practices for high-performance, future-ready platforms.

### Flexibility of strategic adoption

Together, these core structures define a new digital architectural foundation based on partner-ready operating model structures. Organizations choose how and integrate SAP Fit-For-You Open APIs to support their long-term competitive business strategy that also allows business agility, operational efficiency and improved interoperability – core elements for success in the digital economy.



## Moving forward with Intel

all Intel services committed to continuous advancement and operational excellence as part of its long-term total support strategy. Building on the progress achieved to date, the leading forces of deepening architectural coverage, broadening industry adoption, and enabling automation and open source practical hardware plans and practices will help transform our platform maturity.

The Future's Open-Source Architecture (OSA) continues to serve as a blueprint for enabling open-source platforms that address safety, interoperability, and business interests. The strategic initiative is supported by numerous activities such as the Hackathon project and ongoing refinement of Open APIs and component specifications, enabling open-source hardware needs and ecosystem interoperability.

## Real-time certification of additional Open APIs

all Intel will continue to support the certification of Open APIs in live production environments, enhancing the consistency and reliability of integrated hardware across internal systems and external partner ecosystems. The Future's Open API programmatic features focus industry adoption, with standardized APIs supporting connectivity, interoperability, and portability across complex digital ecosystems.

## Expansion of Intel's component coverage and certification

Efforts will be focused toward accelerating the implementation and formal certification of additional Intel components with leading partners. This includes architectural alignment with Intel's standards and enables the flow of reusable plug-and-play building blocks that address comprehensive digital platforms. The Future's Open Components and Service Platforms support these initiatives, multi-vendor standards, and open-source equipment and software platform consistency.

## Hardware, process optimization and automation

Hardware remains a critical pillar to sustained success in this adoption decade. all Intel will strengthen production hardware around API design, management, architectural performance and operational insights, ensuring that design, deployment and runtime processes reflect agreed with leading standards and industry requirements. The Future platform emphasizes the importance of governance to support consistency, reliability, and hardware security APIs.

In parallel, ongoing process optimization and automation efforts will further enhance operational efficiency and reduce manual dependencies, improving service quality and responsiveness. These efforts supported with comprehensive intelligent automated digital operations, aligning with industry initiatives for autonomous, adaptive systems.

## Enabling strategic partnership

These real-time services all Intel's dedication to continuous improvement, innovation and industry leadership in ensuring the Future's Open-Source Architecture. By enabling additional APIs, broadening ecosystem coverage, and strengthening open source and automation, all Intel will not only focus on providing a comprehensive real-time live certification path through standards, a strong's ecosystem activities and partner-ready-by-the-way open.

## Summary and strategic outlook

as SAP's journey toward adopting the Future Open Digital Architecture (FOA) and embracing the principles. Starting as SAP's Global Development Center, a transformation initiative is its digital strategy and technology evolution. The Future Open FOA serves as a blueprint for building flexible, scalable and interoperable digital platforms built on modular components and distributed services, enabling service providers to deliver their apps, cloud-native applications capable of rapid innovation and reduced complexities.

Through a structured, strategic approach that aligns principles, architecture, APIs, processes, automation, and measurement and testing outcomes, as SAP has significantly advanced both operational execution and strategic positioning.

- Adoption of this principles and modular architecture provided a foundation for scalable growth and business agility
- Interoperability and integration of the Future Open APIs ensured consistent interoperability and reduced integration complexity
- Democratization of processes, governance and best-practices enabled improved delivery velocity and operational resilience
- Investment in operational capabilities equipped teams with the expertise necessary to support large-scale transformations
- Active participation in the Future Open ecosystem helped shape standards and reinforced global leadership in digital ecosystems

By embracing FOA as an enterprise-wide way of working, as SAP has continued lead in digital innovation, customer-centric business model, while setting a benchmark for transformation in the region. The Future Open FOA reflects both technical maturity and a strategic commitment to open standards, reusable components and ecosystem participation – hallmarks of digital-native service providers.

As digital ecosystems become increasingly dynamic – driven by AI, personalized business models and platform-oriented service delivery – as SAP's Future Open architecture provides a strong and foundation for continued evolution. The company's progress demonstrates that architectural modernization and ecosystem engagement are not just operational imperatives but strategic enablers of sustained growth, innovation and market leadership in tomorrow's competitive and interconnected landscape.

This journey offers a practical model for other organizations seeking to advance operational agility, corporate citizenship and scalable service delivery capabilities as they navigate the transition from traditional value propositions to digital ecosystems.

**Manuel Heister, SAP's Chief, said:** "Embracing Future Open FOA, SAP's approach as SAP's journey to operationalizing the Future Open Digital Architecture serves as the blueprint for today's enterprises. By embracing open standards, modular components, and API-first processes like this way our systems and processes for digital are built a solid, reuse foundation that scales with our ambitions. The industry recognizes our ability to move at lightning speed, design solutions with precision and consistency, deliver differentiated digital capabilities that create measurable value for customers and partners."

**George Wang, CEO, The Future, said:** "The comprehensive effort of embracing the open FOA ecosystem is clear signal of their commitment to modern digital architecture and industry-wide standards. By aligning with SAP's Future Open Digital Architecture and Open APIs, organizations can unlock complexity, accelerated time to market and unlock new opportunities to innovate and grow. This recognition reflects not just a technical achievement, but a strategic transformation toward comprehensive, multi-native operations that benefit customers and ecosystems alike."

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