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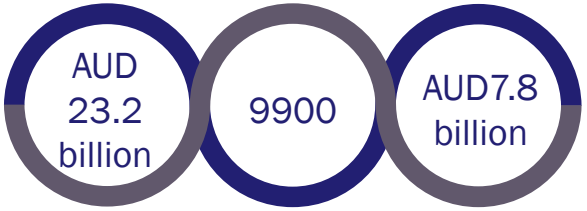
Telstra Australia: dynamic composite service orchestration

Alex Bilyi

Telstra powers wholesale NaaS and enterprise intent-driven architecture with Nokia Orchestration Center and Unified Inventory

STATE OF THE BUSINESS

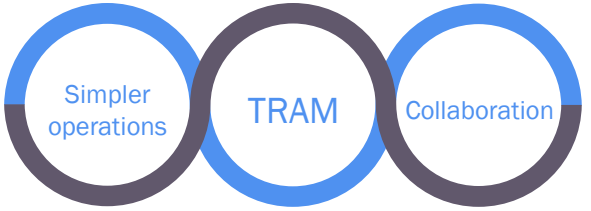


Total revenue in FY2023 | Telstra wholesale sites | Enterprise revenue in FY2023

FOCUS OF THIS EFFORT

Ease of operations and flexibility | Enable rapid innovation | Part of a company-wide initiative

PROJECT APPROACH



Easily extendable solution | Telstra Reference Architecture Model | Use open SDKs to build independently

BUSINESS DRIVERS

- Deliver a premium customer experience with a reduced number of faults and faster provisioning times.
- Create a digital infrastructure throughout its business.
- Create a futureproof network and technology that integrates all domains including fixed, mobile and satellite.

STRATEGY

- Provide robust and resilient services with faster provisioning and isolation of faults in real time.
- Remove service creation complexity to enable a shorter go-to-market time.
- Align to the company-wide digitalisation strategy focused on faster product launches by using reusable services.

ANALYSIS

- Nokia was selected to deliver an adaptive cross-domain solution based on Nokia Orchestration Center and Unified Inventory.
- Telstra wanted to build a composable network and technology service solution aligned with TRAM's API-first approach.
- Telstra was looking for a collaborative partnership that went beyond a typical vendor–customer relationship.

BENEFITS

Composite, horizontal solution that covers multi-tenancy and the entire lifecycle of the service

Rapid set-up of new orchestration domains or entities within 48 hours

Solution delivered as-a-service in a multi-tenanted model adhering to TMF standards and TRAM

Source: Analysys Mason

Business challenges and key drivers of the project

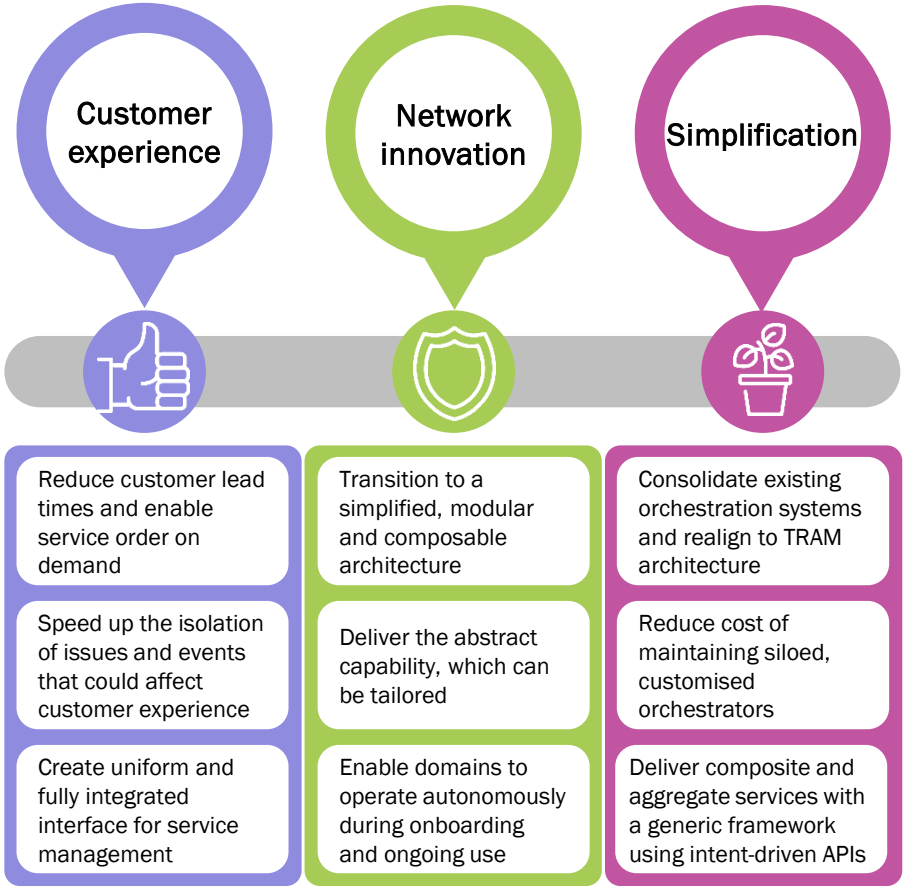
Telstra sought an orchestration solution that was aligned with TM Forum's standards and that offered a complete service lifecycle experience, open architecture for customisation and reusable components for a multi-tenant service.

Telstra is Australia's largest communications service provider (CSP). It offers a full range of services across all customer segments. Its key business units are Telstra Consumer and Small Business, Telstra Enterprise, Network, Product & Technology, and Telstra InfraCo.

Telstra's T25 strategy prioritises open technology and APIs, in recognition of the evolving needs of the digital age. Telstra Reference Architecture Model (TRAM) has an API-first approach and is at the core of this strategy. TRAM creates modular building blocks (atomic services) for network and technology services, thereby allowing for easy combination into new offerings. Additionally, TRAM adheres to TM Forum's Open Digital Architecture (ODA) principles to guarantee open interfaces and service reusability.

Telstra's previously siloed service creation across network domains (with its abundance of tools and separate domain-specific GUIs) created complexity and inefficiency. The shift to a composable architecture allowed Telstra to transition from a complex, vertically integrated model to a simpler, adaptable one, which translates to faster product launches, improved end-to-end service delivery and real-time service orchestration. All of this supports a more competitive and customer-centric approach.

Figure 1: Business factors that are driving the transformation project



Source: Analysys Mason

Telstra partnered with Nokia to enable the evolution towards autonomous networks

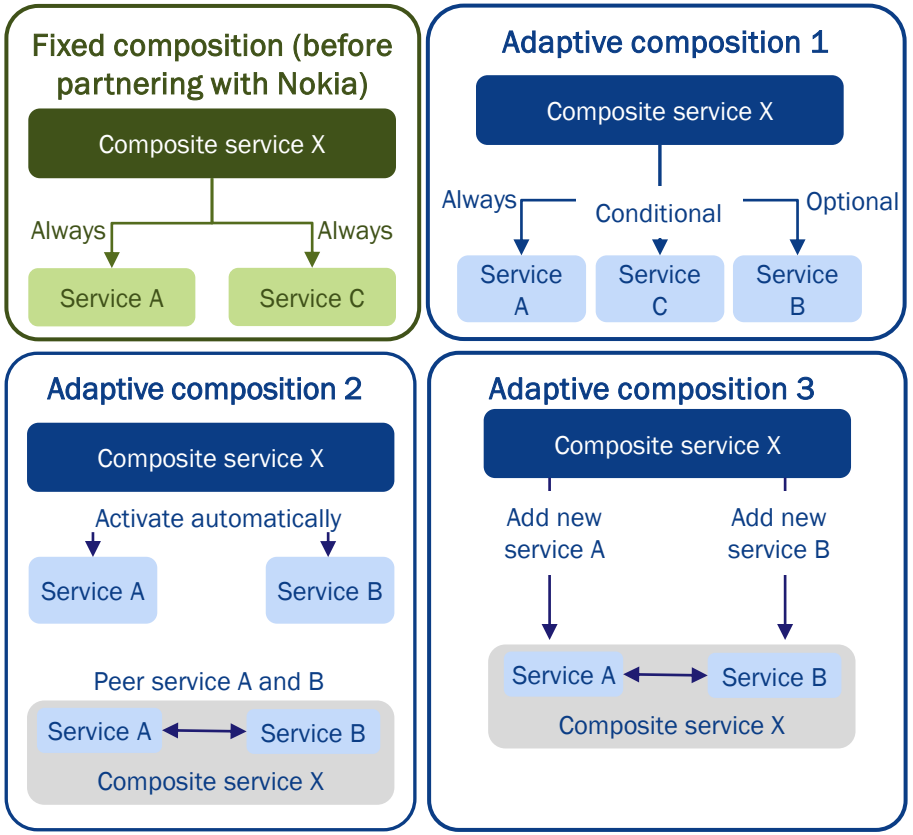
Telstra partnered with Nokia to implement architecture that streamlines service orchestration and abstracts services from multiple underlying network domains.

Nokia's solution allows Telstra to create composite services on a new, flexible platform. This enables features such as on-the-fly service provisioning. For instance, Telstra can automatically reroute a customer's service using a dedicated mobile network if the customer loses their backhaul connection. This ensures service continuity and improves customer satisfaction by offering more adaptable and resilient service options.

Composite services add value by enabling the following.

- **Greater automation.** Combining multiple atomic services enables greater automation than is possible from the simple aggregation of basic services.
- **End-to-end SLAs.** A composite service has an end-to-end view, which enables it to span across multiple atomic services. SLAs can thus also be applied end-to-end, thereby guaranteeing end-to-end outcomes for the customer.
- **Intent resolution/negotiation across multiple domains.** Composite service policies can negotiate between consumer intent and provider intent to deliver the best outcome for the customer and the service provider. For example, it is possible to have a service composition that would reduce load and increase operating margins but provide lower costs.

Figure 2: Service composition patterns



Source: Analysys Mason

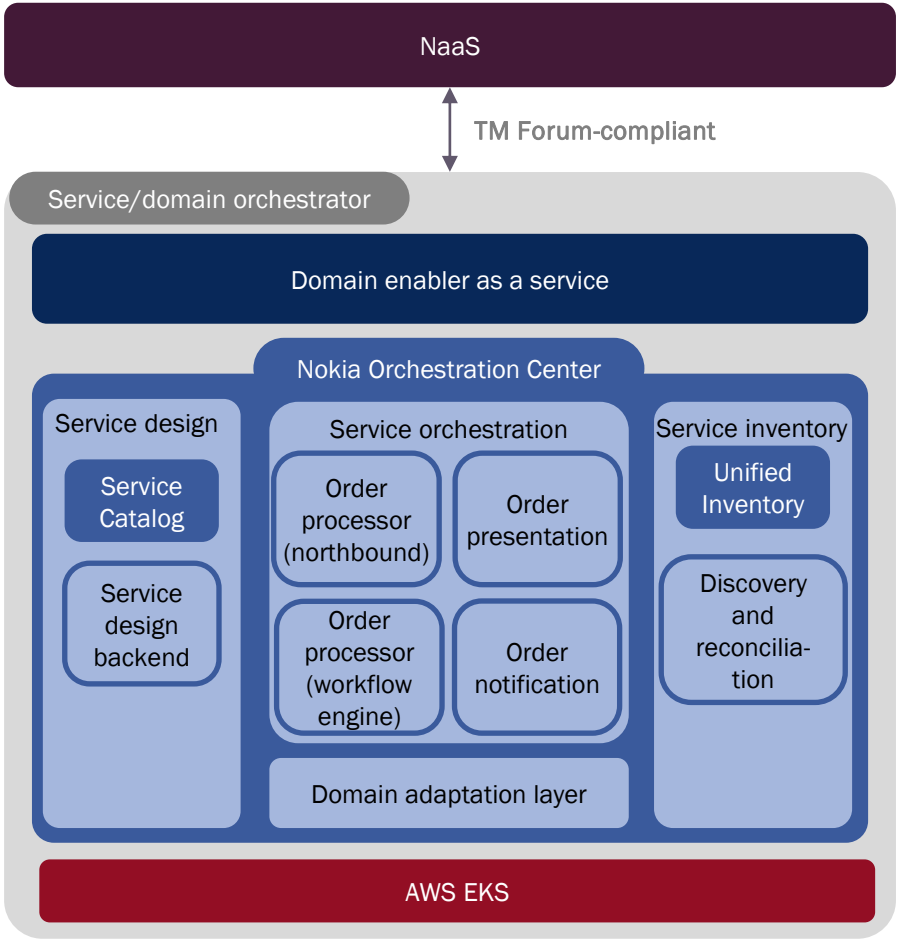
Nokia's multi-tenant solution empowers Telstra to deliver efficient service management in Australia

Telstra has partnered with Nokia to undergo a transformation to improve operational efficiency and attract new business.

Telstra has deployed Nokia's Orchestration Center and Unified Inventory to enhance the customer experience and unlock the potential for networks as a service (NaaS). Nokia's solution simplifies onboarding for new services and adheres to TM Forum's Open APIs and TRAM to ensure seamless integration. The cloud-based solution, hosted on AWS, provides Telstra with scalability and eliminates the complexity of managing multiple services through separate interfaces. Previously, customers may have required access to three or four different GUIs depending on their technology stacks and purchased products. Now, they benefit from a single-pane-of-glass view that offers real-time insights into their services and network operations.

Nokia's Orchestration Center and Unified Inventory is a multi tenant, cost-efficient PaaS solution. Its modularity enables autonomous domains by using existing applications for transformations. Seamless scalability ensures that new features and service volumes can be on-boarded without affecting performance. Integration is rapid due to its adaptable architecture. Its abstraction layer can support multiple domains and enable the standardisation and development of models for service lifecycle management automations.

Figure 3: NaaS-enabling architecture



Source: Analysys Mason

Key benefits

1

Composite, horizontal solution that covers multi-tenancy and the entire lifecycle of the service

Telstra's focus on composite service orchestration is centred on improving the customer experience. This strategy facilitates the creation of services encompassing multiple domains, such as network and cloud, and aligns with ETSI guidelines for end-to-end service management. Telstra benefitted from standardised composite network services by orchestrating at the composite service layer, resulting in a streamlined operational approach.

2

Rapid set-up of new orchestration domains or entities within 48 hours

One of the advantages of Telstra's solution lies in the use of reusable blueprints to avoid manual service on-boarding. These blueprints streamline the creation of new orchestration domains or entities and remove the need for manual configuration from the outset. By implementing blueprints, Telstra can deliver a ready-to-use orchestration domain within 48 hours of an initial request.

3

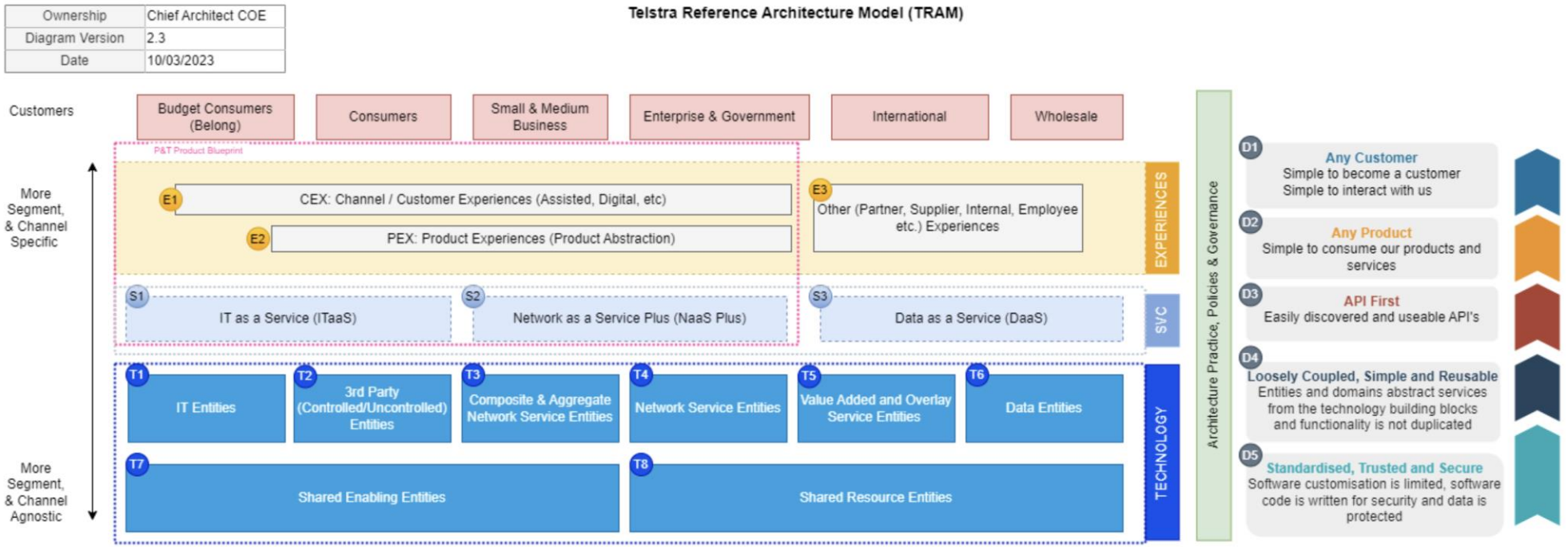
Solution delivered as-a-service in a multi-tenanted model adhering to TMF standards and TRAM

One of Telstra's key requirements was an adherence to TM Forum's NaaS standards to ensure a uniform and automated interface for NaaS use cases. By adhering to these standards, Nokia also helped Telstra to remove the complexity that would otherwise burden the northbound BSS layer. Telstra can now deliver composite and aggregate services with a generic framework using intent-driven APIs.

FURTHER INFORMATION

Telstra Reference Architecture Model

Figure 4: Overview of TRAM



Source: Telstra

About the author

Alex Bilyi (Analyst) leads Analysys Mason's *Service Design and Orchestration* programme which is part of the *Applications* practice. His research focuses on the evolution of traditional fulfilment systems and processes towards highly agile, automated, self-service-based and intent-driven service design and orchestration systems. This involves real-time dynamic inventory, service catalogues and network topology as well as network and infrastructure planning/optimisation systems for virtual networks and model-based configuration systems. Additionally, Alex's research focuses on applications supporting business services.

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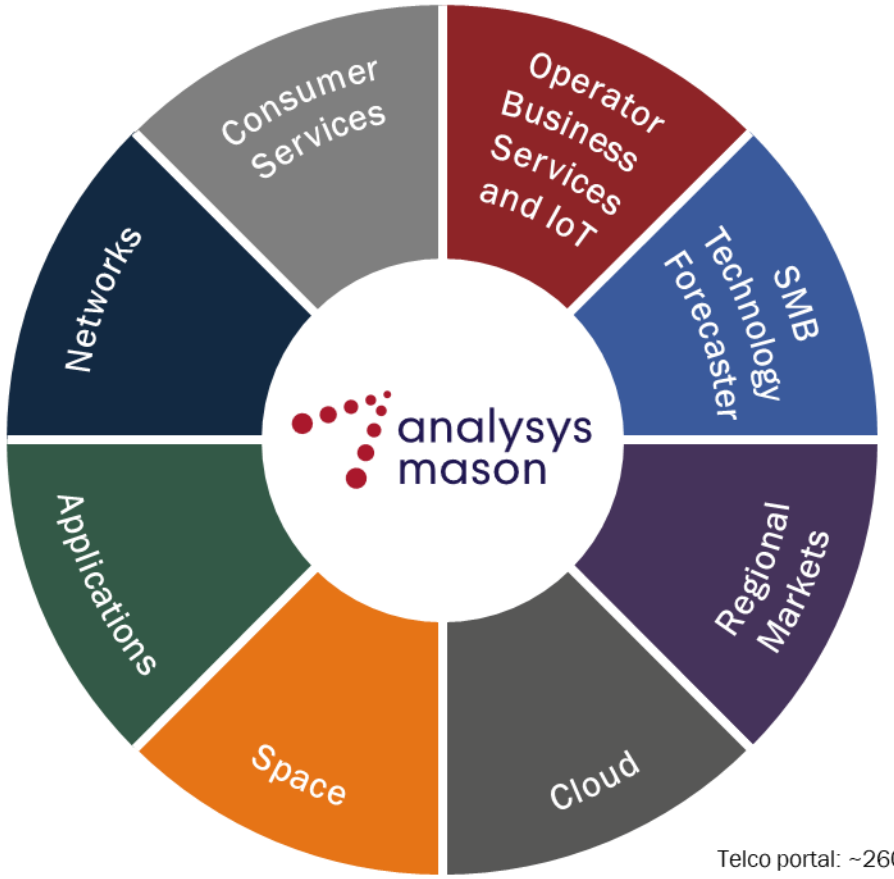

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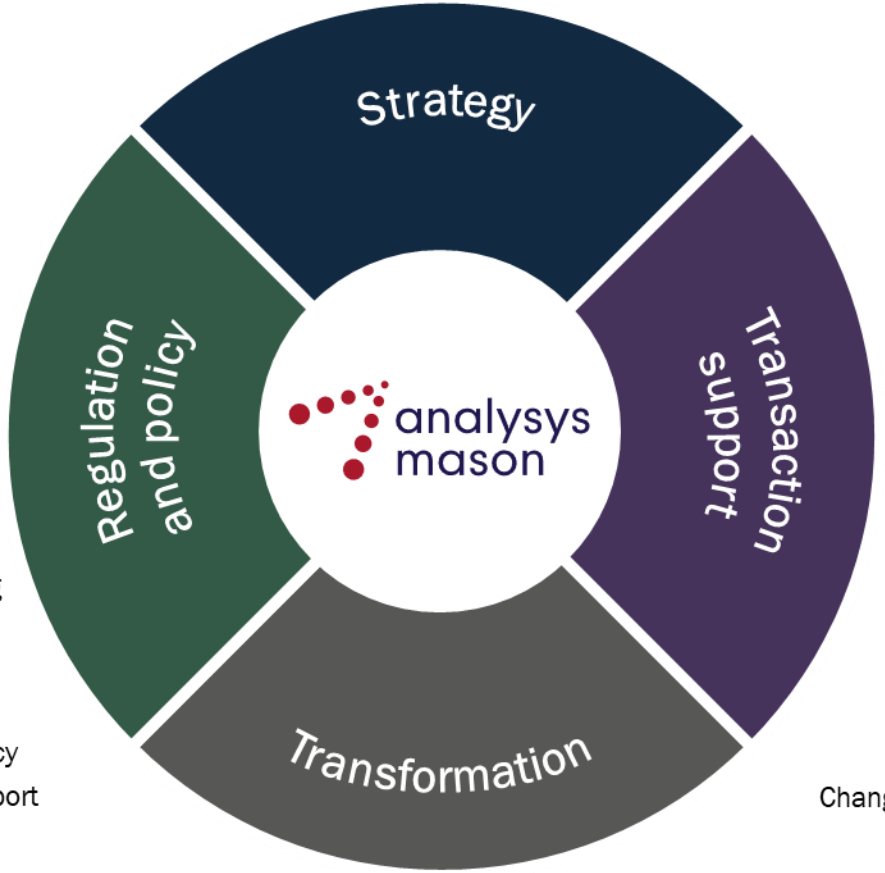

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