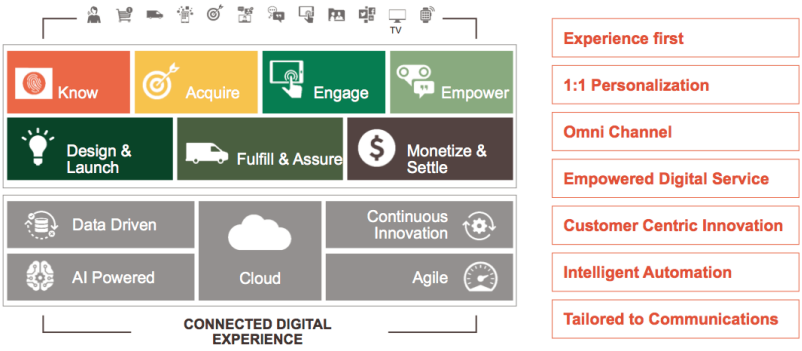
Modernizing the Back Office: The Foundation for Digital Transformation

Today, many communications service providers (CSPs) are looking to be increasingly "digital" by developing a better understanding of the digital behavior of both their existing and prospective customers. CSPs want to more intelligently determine what core and digital services they should sell and to whom, and how they should best engage to sell and serve services to their customers via increasingly digital channels. Underpinning all of this is the assumption that CSPs can effectively fulfill, assure and bill customer services in an accurate, responsive and automated manner with increased agility and at lower cost. They seek to develop a warmer relationship that assures the customer that "we know you."

Figure 1: Key Capabilities to Deliver a Digital Experience for Communications



In many cases, such CSPs believe their focus should primarily be on the customer engagement processes and systems that are needed to support new and compelling end customer journeys. However, becoming a digital CSP requires far more than simplifying and digitizing customer journeys. To see the bigger picture, CSP might reframe the question and ask themselves whether it should also include simplification, standardization and automation, if not outright redesign, of their end to end processes to support the needs of increasingly online channels. It may also drive systems re-architecture and renewal in accordance with open standards and APIs to enable the agile, data-driven introduction of products and services enabling CSPs to decouple what they sell from how it gets delivered. Coincident with this may be changes in IT organization and skill sets such as agile, DevOps, etc. that may also be required.

Sometimes, its worse than you thought

Many of these points are often overlooked, and frequently understandably so, by digital transformation initiatives that are funded to focus predominantly on the front office. Consider these pitfalls from real-world CSP experiences:

- **Failing to consider end-to-end processes –** A South American CSP engaged its vendor to implement a front office Customer experience/Customer Relationship Management transformation independently of, but in parallel with, a system integrator that was implementing the CSP's back-office OSS transformation. The CSP's naive expectation that when completed, these two projects should automagically work together – but without designing and governing the end to end processes up front, initial results indicated the CSP would not achieve the anticipated benefits of the entire transformation, before the CSP changed strategy and adopted a more holistic approach to rectify the program.

- **Lengthy regression testing –** A North American CSP was hand-crafting fulfillment flows for each service they introduced which resulted in an escalating number of unmanageable flows that were extremely difficult to understand and change over time. This approach required continual regression testing of the solution, taking many weeks at considerable cost due to the "spaghetti" nature of the updates across the solution. This severely limiting their operational agility.
- **Poor systems availability –** A convergent European CSP transformed their front office systems to shift customer engagements to online channels (away from the call centre) and drove their customer interactions increasingly to non-business hours exactly when their back-office systems, being controlled by other CSP teams, were being taken off line for maintenance reasons. This resulted in poor customer experience and modest, at best, online customer adoption.
- **Slow response times –** A South American CSP encouraged prospective customers to sign up for new mobile services via contemporary online digital channels with an industry leading customer experience solution. However, the CSP found high cart abandonment and very poor order conversion rates. These were caused by slow tasks in the automated back office processes such as credit checks, that had not been re-engineered for online use. Furthermore, because of the different executive ownership across front and back office systems, these back-office issues presented an existential threat to the entire front office program and the executives involved.
- **Loss of control and erosion of skill sets –** An Asian CSP, in sharing some lessons learned from their B/OSS transformation, highlighted the perils of delegating responsibility for key back office processes and systems to external parties resulting in a gradual loss of control and skill sets in areas becoming increasingly important to CSPs' digital futures.

How best to navigate the storm

So, what then are some key elements in a modernized back office that CSPs might consider to best ensure their customer engagement-driven, digital transformation is ultimately successful?

Start with a declarative model-driven approach that allows business analysts to design solutions for specific domains (5G, carrier ethernet, etc.) at a high level. This allows the products themselves to be exposed in abstract form to the front office for bundling into offers, promotions, etc. This is important as it decouples what is sold from how it is delivered – more of a "lasagna" vs. "spaghetti" approach. The service or fulfillment view is abstracted from the underlying technologies, and the resource view further abstracted from the vendor specifics. Driving the end-to-end solution implementation from this information model engenders reuse through assembly vs. replication and localizes changes to maximize scalability and reduce testing efforts.

To illustrate how such an approach may be applied in practice, here are how two contrasting services, simplified 5G and complex B2B, are illustratively modeled using such an approach. As you can see, the model will drive the behaviour of the run time platform, thereby avoiding the need for domain specific customization.

Figure 2: Architectural Blueprint for Service and Network Orchestration – Design and Run time.

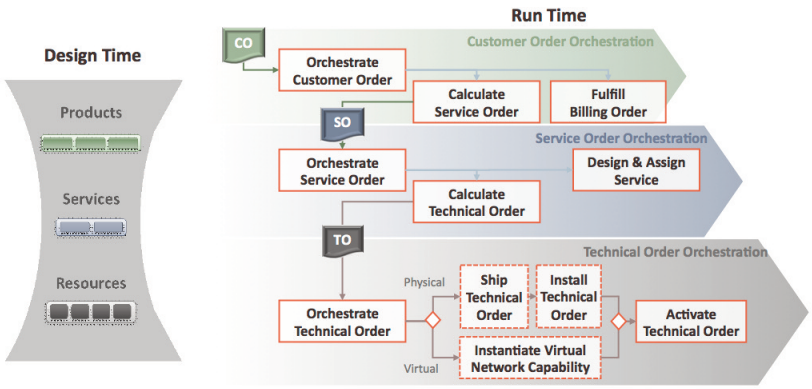


Figure 3: Applying the Model to 5G Services.

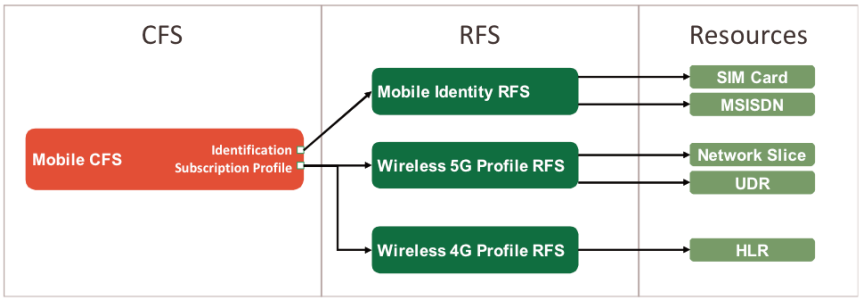
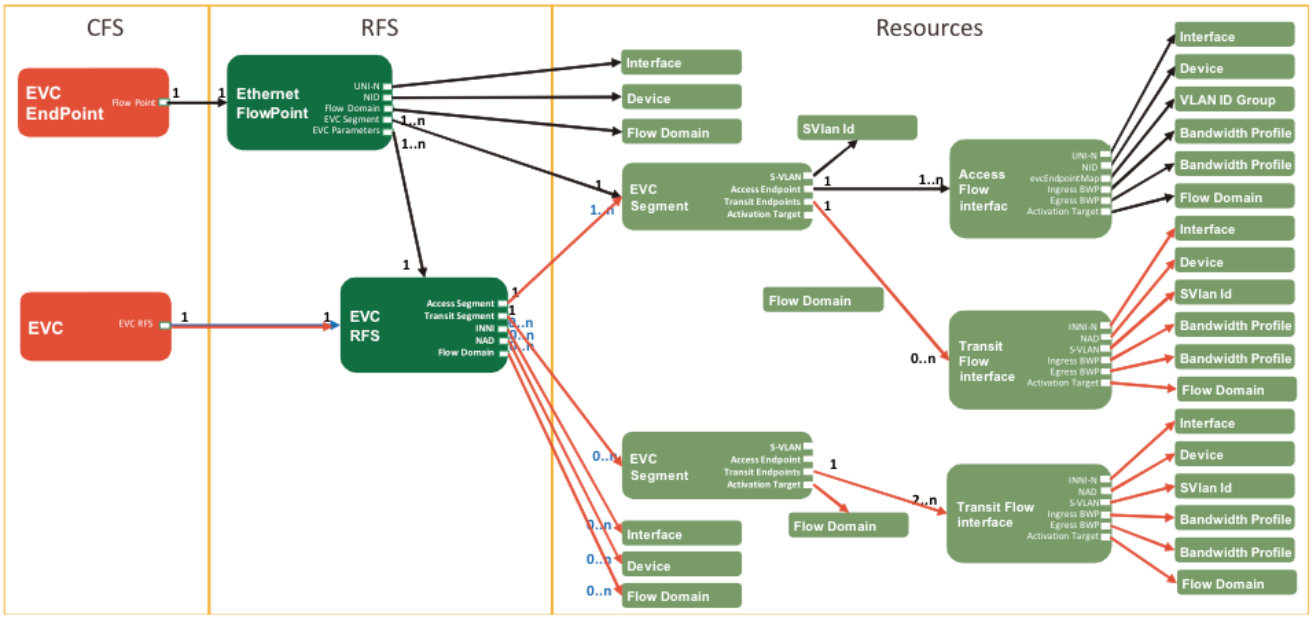


Figure 4: Applying the Model to Complex B2B Services.



At run time, the incoming order items are then mapped to a small number of standardized, manageable workflows and rules that recognize recurring patterns to dynamically create and execute an order orchestration plan unique to each order. Mapping incoming orders into standardized components is critical to avoid "special" orders which are customized to address customer specific requirements especially in B2B and which often lead to error prone manual processing. Such an intelligent orchestration approach decides and manages interactions with required fulfillment systems and the sequences of actions and dependencies between these actions. This helps address the issue of catalog bloat and increasing numbers of unmanageable workflows in the back office. In field experiences, some CSPs have been able to reduce the number of such workflows from several thousand using traditional methods down to a few tens in number under this approach. This allows new offers and promotions in the front office to be rolled out with minimal or no changes to the fulfillment configuration rules and be very legible and highly adaptable to changes.

To support the automation expectations of the front office, it is important that the back-office supports continuous availability with near real-time responsiveness for the increasing use of online channels. This has been seen traditionally in mobile domains, but as CSPs increasingly engage additional domains through online channels, this elevates the importance to simplify, automate and ensure very fast responses for all channels. In addition, the back office should also support cloudy / rainy day scenarios such as order cancellations, revisions, and compensation, as it supports sunny day scenarios. Nowhere is this more applicable than in the growth area of strategically important B2B services where orders may be in progress for a long time (up to two years in some CSPs) during which many changes may be received which need to be accurately and automatically accommodated. This helps ensure what gets sold matches what gets delivered and what gets billed – essential for an optimal customer experience and to avoid billing disputes with important enterprise customers.

Commensurate with the above in the back-office solution is the adoption of standards-based open architectures and alignment with TM Forum's Open Digital Architecture as part of the broader Open Digital Framework with concrete support for TMF's Open APIs for ease of solution interoperability. A recent example of this was a TM Forum catalyst called Zero Touch Partnering that showcases how CSPs can leverage TM Forum Open APIs to:

- Rapidly on-board offerings from new partners
- Assemble and curate blended offers
- Consistently orchestrate customer orders across multiple internal and external fulfillment systems using the TMF Product Order API.

A final element is embracing new technologies and ways of working to properly enable the points above. The opportunity to adopt cloud-native technologies and methodologies helps CSPs deploy more contemporary back-office solutions with operational characteristics ideally suited to supporting the front office transformation. This includes increased agility, availability, scaling and reduced costs.

Of equal if not greater importance is enabling CSPs to raise their brand visibility to recruit and retain the talent and skills (cybersecurity, digital, cloud-native, AI/ML, etc.) needed for tomorrow's digital CSP. As part of their organizational and skill-set transformation, this will allow them to identify and own areas they need to control to differentiate themselves in the market.

Conclusion

As CSPs look to transform their overall customer experience, implicit dependencies on the back-office are often overlooked resulting in impacts that may range from significant to existential in nature. To avoid this, CSPs need to modernize their back office by considering end-to-end processes and leveraging open, standards-based solutions that are model-driven with intelligent orchestration that, in turn, support full automation, continuous availability and near real time response times.

Oracle's Service and Network Orchestration solution has been widely deployed in large CSPs on a global basis, supporting order volumes into millions of orders per day with sub second response times providing CSPs the confidence of a proven, strong foundation to support their customer experience transformation, whether it be green field, brown field or a digital overlay.