

# Open APIs, ODA and Ecosystems – a Recipe for Industry Transformation

## Open APIs Gathering Industry Momentum

The TMF Open Digital Framework is looking to dramatically reduce CSP time to market and operating costs, enable federation and deliver the best possible digital experience. Central to this is the creation of an industry standard set of Open APIs to enable zero touch interoperability and partnering – within and across CSPs and their partners.

As a founding member of the [ODA Component Accelerator project](#) and a signatory to the [Open API & Open Digital Architecture Manifesto](#), Oracle supports such an open, standards-based approach for the industry. We have embraced the TMF Open APIs in numerous catalysts and across our portfolio with widespread adoption and

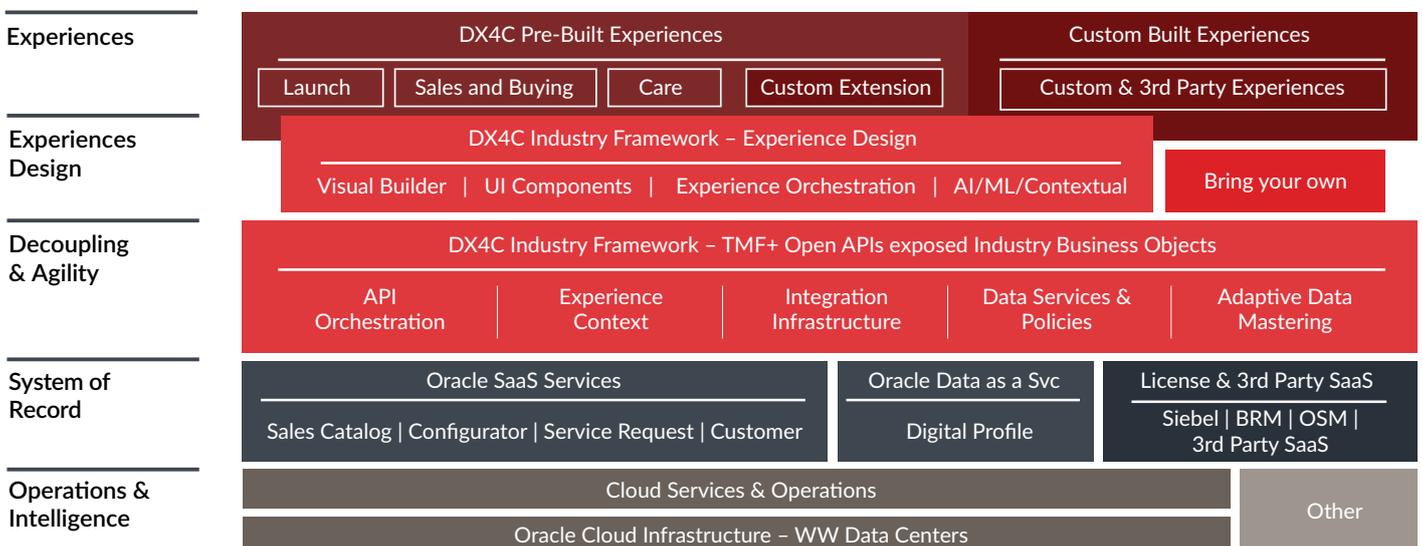
ongoing formal certifications. This may be best illustrated in [Oracle's Digital Experience for Communications \(DX4C\)](#) where we are using Open APIs to expose the solution capabilities in accordance with TMF ODA principles in decoupling the systems of engagement from the systems of record. Similar to the use of such Open APIs in catalyst projects, we seek to use, extend where necessary and contribute back such experiences and extensions to the Open API program to ensure vibrant evolution and maturing of these Open APIs to support widespread CSP deployment.

## Pragmatically Applying Open APIs in Brownfield Environments

New solution development has the luxury of starting with the latest

industry standards and best practices which includes the adoption at source of Open APIs. But most CSPs have existing solutions in their core and adjunct businesses – so what role can Open APIs play in a brownfield transformation? How do CSPs expose a consistent capability experience provided by both their existing and new solution components (e.g. a CRM or Billing transformation perhaps embracing cloud or SaaS capabilities) within their IT environment? How do they orchestrate and route API requests to the appropriate underlying systems of record which may reside on-prem or in one of many clouds? How do they master key data such as product, customer, assets, etc. throughout their implementation journey across the various systems of record?

### DX4C Functional Architecture



As part of DX4C, Oracle has introduced the "DX4C Industry Framework" that addresses this need by using TMF Open APIs to expose the solution capabilities of the systems of record (catalog, sales, commerce, care, billing, order management, etc.) to orchestrate these API requests and adaptively master key data across the systems or record thereby enabling true decoupling of systems of engagement from systems of record. Such an approach, leveraging Open APIs, enables CSPs to functionally transform through effective decoupling and functional integration.

### Truly Transforming with an ODA Ecosystem

Open APIs provide a standard approach for functionally integrating applications, but unto themselves they don't address the challenges of deploying, configuring and operating a complex application landscape. This challenge is being addressed through ODA components which are software

components running on an open standard cloud-native "canvas" with each component having a self-describing "envelope" with all the meta-data required to fully-automate its lifecycle management and operations. The vision of this initiative is to deliver at least a 10x improvement in operational efficiency (through automated operations), standardization (through machine-readable open-source component "envelopes") and time to market (leveraging a component marketplace that aim to make the RFP procurement process largely redundant).

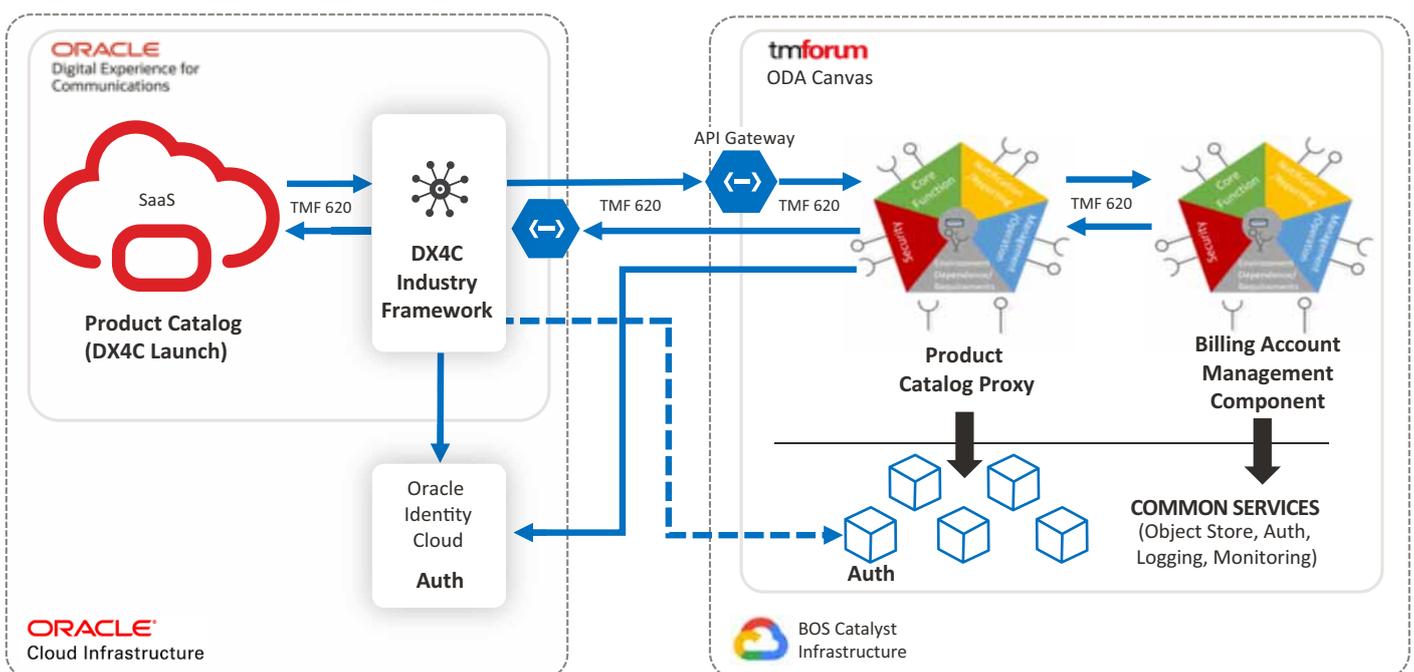
The recent Business Operating System (BOS) catalyst at DTWS explored and further developed the ODA reference implementation - putting these ideas into practice with multiple ODA components from different vendors within an "ODA canvas". While this demonstrated significant progress, it still didn't address how CSPs might realize these ODA benefits where their application landscape may comprise of multiple applications running in different

environments, including on various public clouds and under different models (license vs. SaaS).

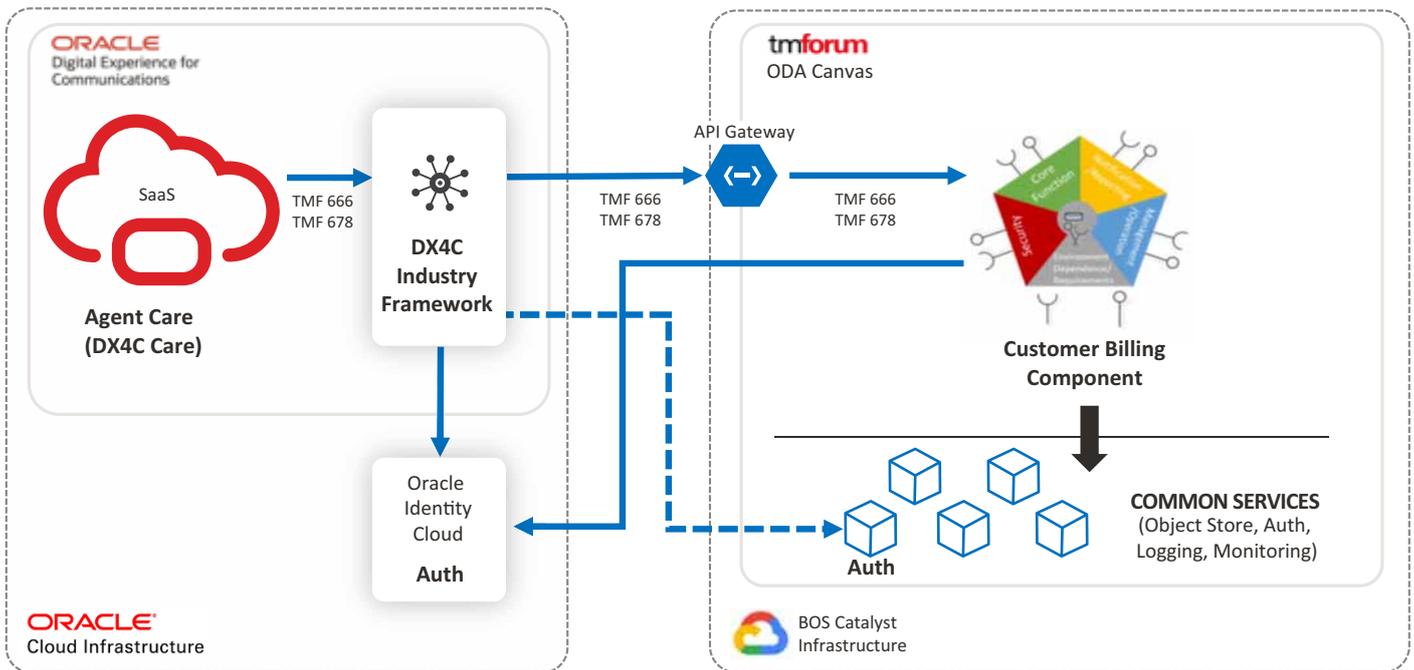
In recognition of this, Oracle explored how such an "ODA canvas" might be extended to a hybrid/multi-cloud "ODA ecosystem" which enables CSPs to leverage existing applications that may be running in external environments. This reflects the reality that CSPs are looking to apply these ODA principles without having to rebuild everything. Using SaaS applications as examples of components running externally to an ODA canvas, we explored optimal integration approaches to bridge these SaaS components into an ODA environment to create an ODA ecosystem. Two representative integration scenarios were illustrated.

The first was for a more complex interaction that deployed an ODA SaaS proxy to represent the SaaS product catalog offer launch to an ODA canvas-hosted billing component - shown below.

#### Offer Launch to Billing - Using an ODA Proxy Component



Customer Care from Billing – Direct without an ODA Proxy



The second was for a simpler integration pattern in which the SaaS based DX4C Care application queries the ODA canvas-hosted billing component for customer billing information using an API gateway and without requiring an ODA proxy component – illustrated above.

This contribution, together with those of all the catalyst participants, resulted in this catalyst being recognized as the outstanding catalyst for innovation by the judges at DTWS. It provides a path for CSPs to both adopt ODA principles and leverage existing application investments into a broader ODA ecosystem on the journey to realizing those visionary benefits outlined above.

### Conclusion

The creation and adoption of a comprehensive set of Open APIs that continue to evolve and mature is a key foundational step. Enabling the practical decoupling of systems of engagement from systems of record especially in brownfield environments requires API orchestration and adaptive data mastering across the potentially many systems of record that may be involved. The ODA reference implementation, as illustrated in the BOS catalyst, and now being taken forward in the just announced ODA Component Accelerator project outlines the path towards achieving a step change in operational costs through standardized and fully automated component lifecycle management. The extension of this to an ODA ecosystem in which external application components may participate as first class ODA citizens offers the clearest roadmap yet for radical transformation.