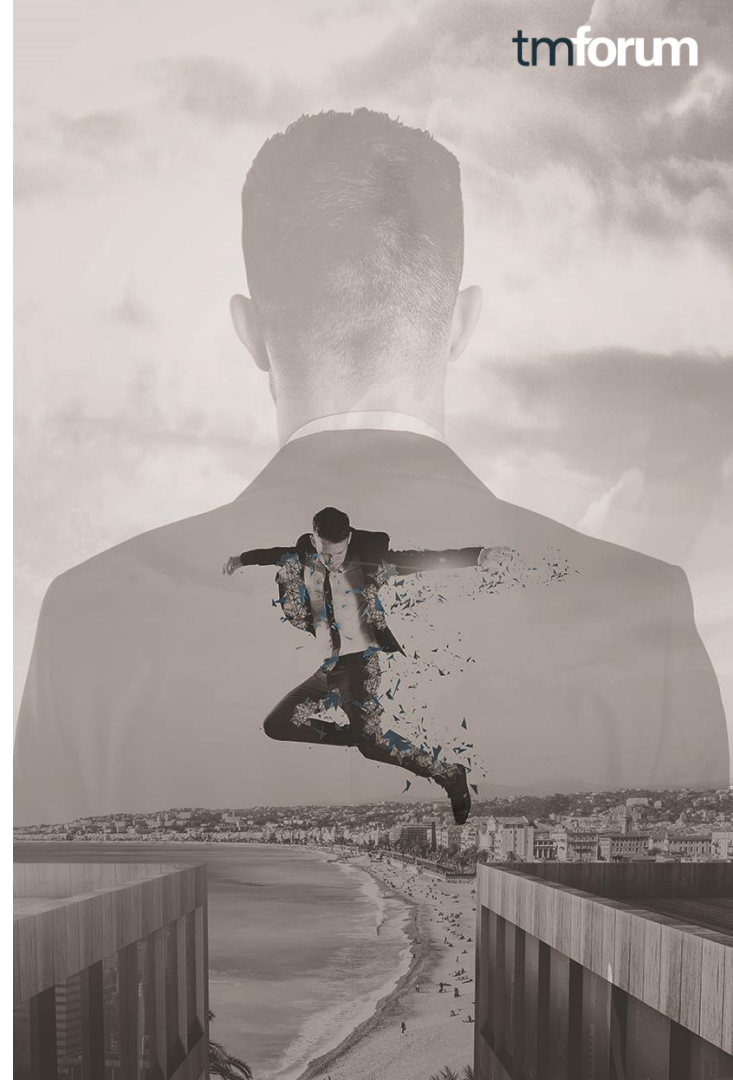




Blade Runner





BLADE RUNNER CATALYST

Cloud Services made easy

Market Trends

Edge computing

Cloud Services

OPEN INTERFACES
Allow constant stepwise evolution

OPERATIONAL EFFICIENCY

NFV/SDN AND HYBRID

**INTENT BASED NETWORKING
AND VISUALIZATION**

IoT

OPEN API

MOVE TOWARDS 5G

MULTI-TENANT

CLOUD AND VIRTUALIZED

**CUSTOMER
CENTRICITY**

AUTOMATION

Orchestration

Digital Business Model

The Service Provider Challenge



Significant growth in service provider enterprise services, BUT...

- No ability to automate and assure a service across multiple operators/partners
- Lack of standardization, no Unified service Catalog and reusable services
- Response time is slow: Not real time, impact on time to market

Constant technology advancement creates challenges...

- SDN, NFV, SD-WAN, Hybrid, 5G, IoT...
- To visualize, analyze and automate a constantly evolving network and services
- Diverse set of ecosystems across different Service Providers and domains

Vision

Realizing the potential of MEC, 5G & IoT to deliver complex next generation multi operator enterprise services

Together 5G networks and MEC are paving the way to a new world of high bandwidth, low latency services, like Augmented Reality.

These services require a diverse partner ecosystem, seamlessly working together to provision, monitor, monetize and assure them.



Objective

- Unified future proof shared service catalogs
- Complex service chain orchestration in a diverse environment
- Faster deployment of vendor agnostic hybrid/cloud services
- Multi operator e2e automated closed loop service assurance
- Multi operator e2e wholesale enterprise billing for cloud services

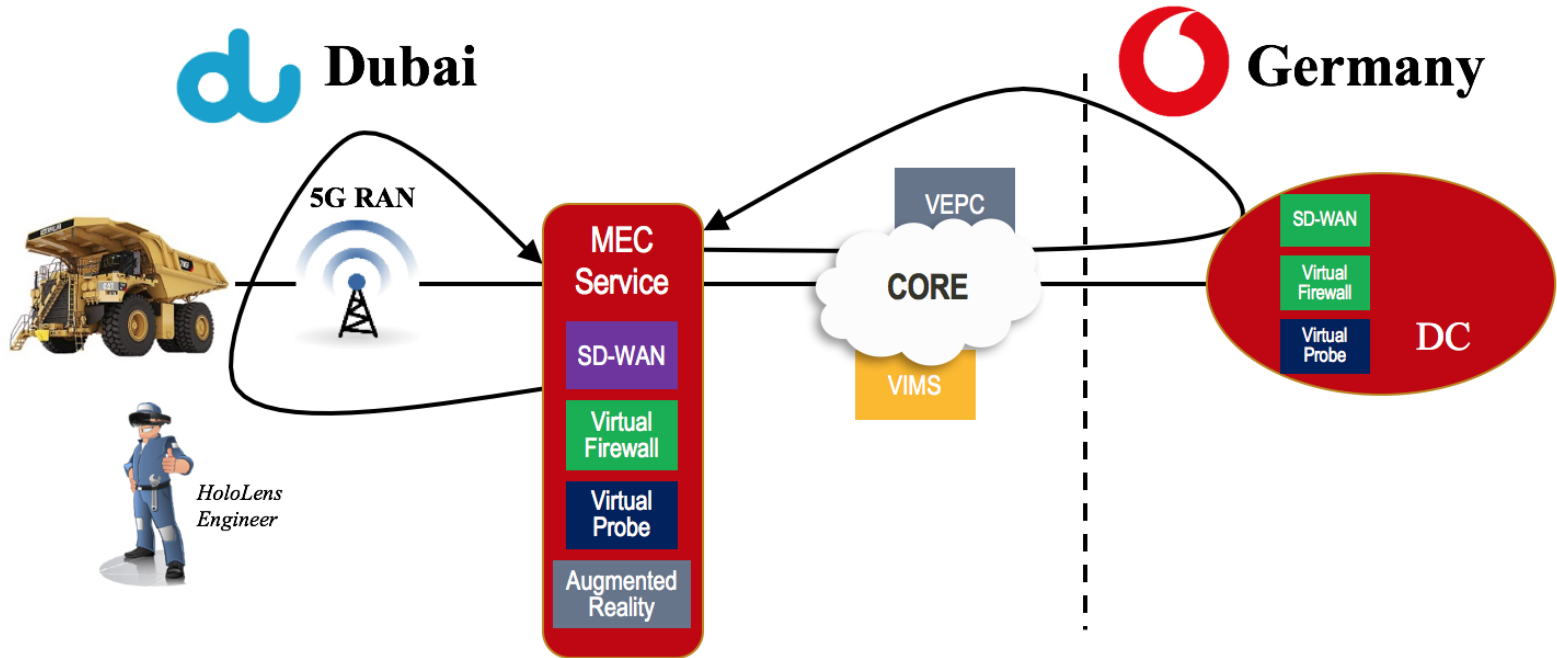
Demonstrate how DSPs can model, expose, monitor, assure and monetize next generation **5G** services between multiple operators, using **TOSCA** and **Open APIs** in order to create great enterprise customer experience, while also contributing towards technology standards such as **ONAP** and **ODA**.



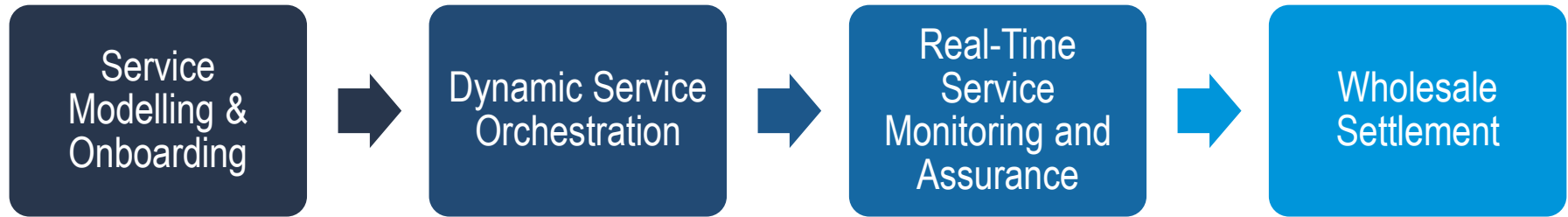


Location agnostic Industrial maintenance using Augmented Reality through a HoloLens device.

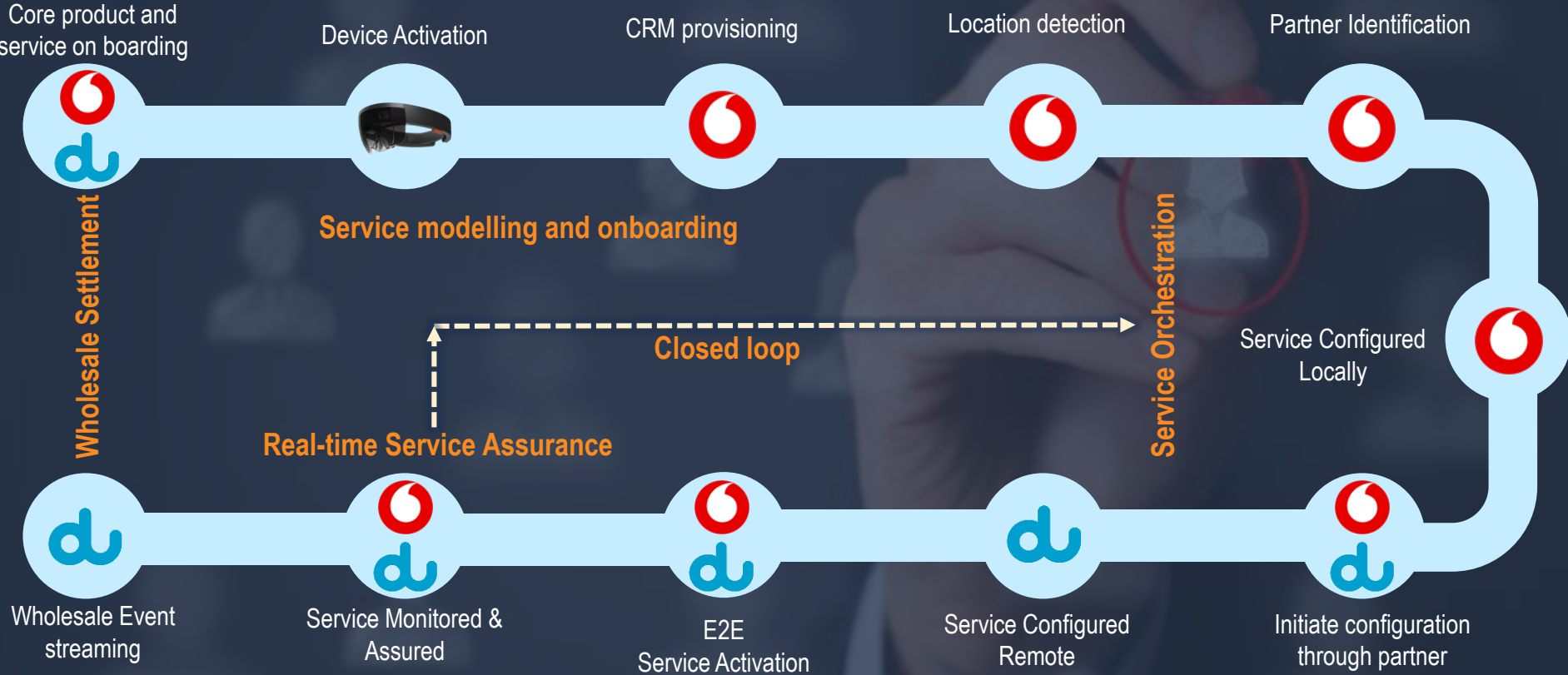
High level network diagram



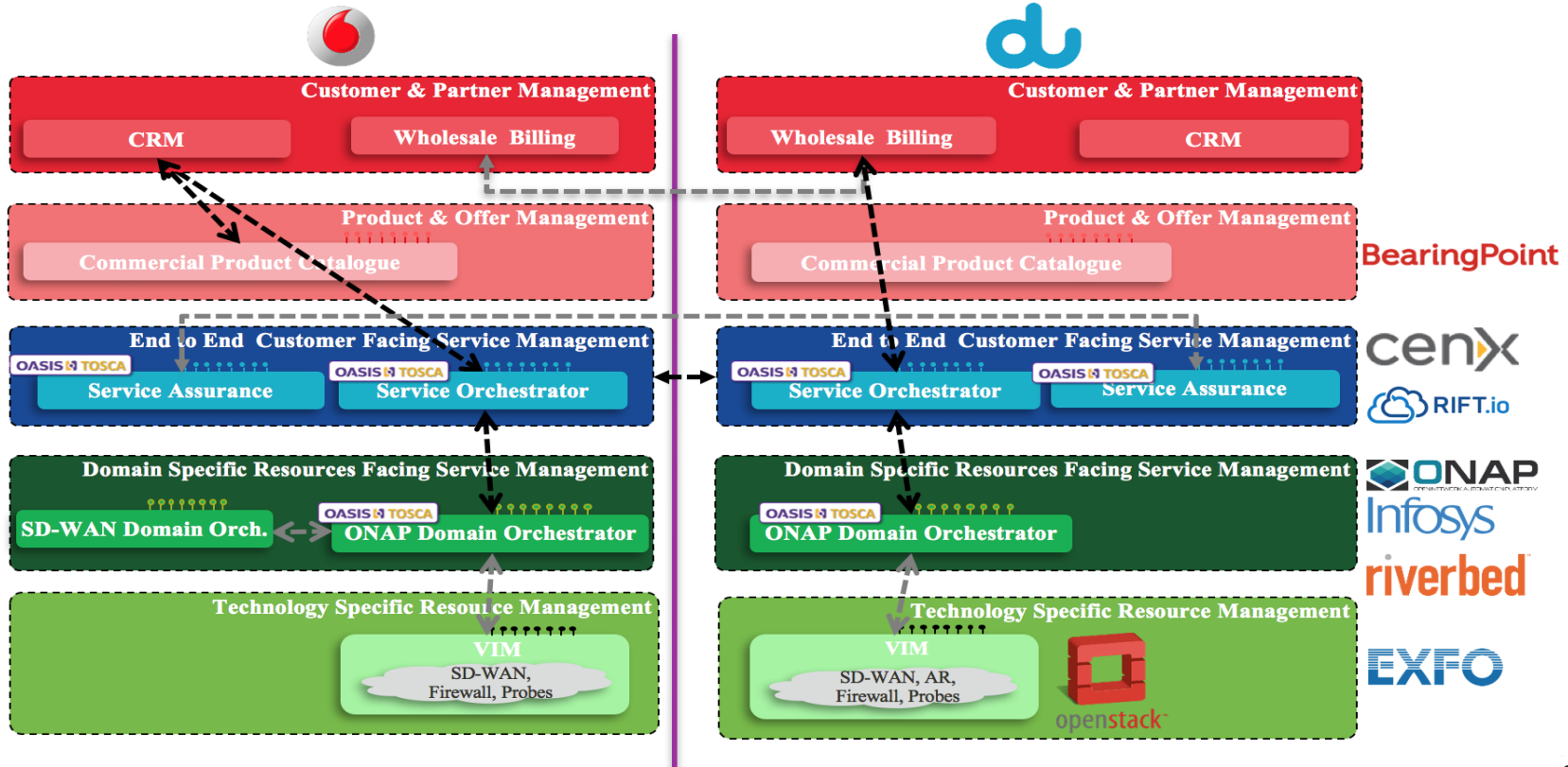
Rapid deployment of vendor agnostic hybrid/cloud services



Blade Runner: Closing the Loop for Enterprise services



Open Digital Architecture | Partners View



TOSCA in a page



Legend
 Coffee Shop paradigm
 Digital service provider



Starbucks headquarters



Sharing the product catalogues
with the shops

Sharing the recipes
with the shops

1. The TOSCA modelling language is used to onboard a new service into the Service Catalogue

3. An instance of a Service is created in the Service Inventory



2. The Orchestrator reads information from the Service Catalogue to activate a Service

STARBUCKS® COFFEE			
ESPRESSO			
Double Espresso 240ml	1.95	3.95	1.95
Caffe Latte 110-240ml	2.95	3.65	4.15
Cappuccino 90-110ml	2.95	3.65	4.15
Caffe Mocha 110-240ml	3.45	4.15	4.65
Vanilla Latte 110-240ml	3.95	3.95	4.45
Caramel Macchiato 110-240ml	3.75	4.45	4.75
White Chocolate Mocha 110-240ml	3.75	4.45	4.75
Caffe Americano 10-210ml	2.25	2.75	3.25
Espresso 1.75	1.95		
ICED COFFEE & TAZO® ICED TEA			
Iced Coffee 90-110ml	3.25	3.75	
Tazo® Iced Tea 2.25	2.65		
Tazo® Iced Tea Lemonade 2.25	2.65		
Tazo® Iced Classic Chai Tea Latte 4.25	4.95		
COFFEE & TAZO® TEA			
Freshly Brewed Coffee 5.00	1.85	2.10	2.45
Tazo® Classic Chai Tea Latte 3.45	3.95	4.25	
Brewed Tazo® Tea 1.75	2.10	2.35	
FRAPPUCINO®			
Coffee 240ml	4.45	5.35	
Caramel 4.45	4.45	5.35	
White Chocolate Mocha 4.45	4.45	5.35	
Java Chip 4.45	4.45	5.35	
Mocha 4.45	4.45	5.35	
OTHER FAVORITES			
Hot Chocolate 3.25			

Coffee Menu in a shop

Commercial Product Catalog



Baristas recipe book

Service Catalog

A recipe is used to produce a coffee



Jane's flat white

Service Inventory

Architecture and Standards alignment:

- **TOSCA** to define:
 - Service models in different layers, across different partners
 - Service assurance policies for closed loop assurance
- **Open APIs** for systems integration, supporting loos-coupling, even across partners
- **Open Digital Architecture (ODA)** to support multi-carrier orchestration on different levels
- **ONAP** to support domain orchestration

Imagine the Impact

Technical Benefits



Test and build on top of existing standards such as ONAP, ODA

Test TOSCA across different layers

Enhance TOSCA with Service Assurance policies management

Explore real multi vendor complex use cases

Test vendor agnostic Open APIs across multiple partners

Create Service models, portable to any orchestrator and any infrastructure (Edge, Public cloud)

Imagine the Impact



Business Benefits



Opening up a partner ecosystem and enabling new businesses through open industry standards

Faster time to market & no vendor lock-in through the use of standardized Catalogs (Build once – Deploy many approach)

Better customer experience and enhanced agility through real-time orchestration

Significantly reduce operational cost and increase Automation footprint

Real-time closed loop assurance and wholesale settlement for hybrid enterprise services

Don't just take our word for it...

8

Champions

6

Participants

6

TM Forum
Open APIs

1

[Whitepaper](#)
15 authors

1

[GitHub](#)
repository

4

ONAP Jira
Tickets

2

Major ONAP
Extensions

2

Major ONAP
issues analysed

2

TM Forum
Open API
Jira Tickets

8

ONAP Jira
Tickets
workaround

What Next



- ▶ End-to-end service orchestration on a hybrid network for large enterprises with multiple global locations



- ▶ Explore business cases and the technical impact for real-time policy management and charging for cloud services, including spot pricing



- ▶ Advanced close loop assurance across the different operators and advanced virtualization of services and network elements