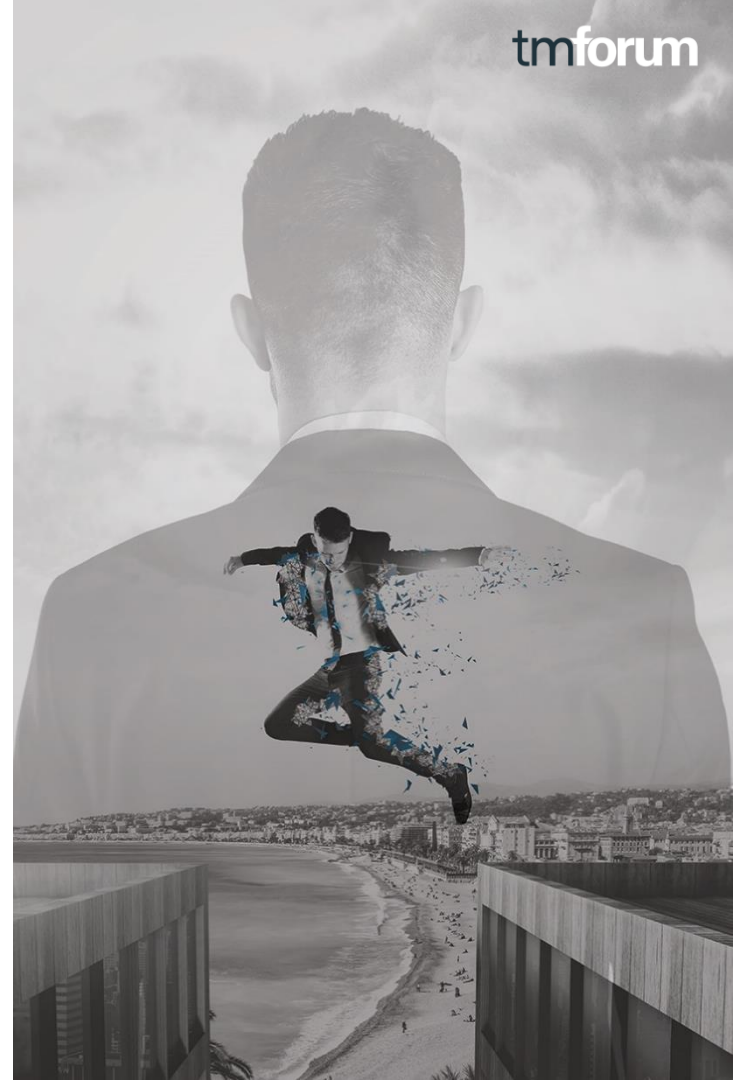




CEM/OSS for Hybrid Networks Predictive Analytics & Dynamic Offer Creation

16/05/2018



Catalyst Project description

The **vision** is about Re-invent all OSS/BSS functions based on Telecom Data Analytics,

- **as a Communication Service Provider**, I need to re-invent all OSS/BSS functions based on Telecom Data Analytics to provide, new Performance Management features, New service Quality Management Features, provides a service usage trends on NFV infrastructure, new commercial offers based on RT-customer usage and newly discovered network capabilities
- **So that I can provide** service simulation, automatic network changes with Telco operators policies control and monetize my infrastructure to meet customer demands by being agile and innovative with commercial product offers.
- **To do this I need to create a “Closed loop action”** with CEM triggers/ NFV KPI's based on gathered data from hybrid networks (physical & Virtual Infrastructures) to detect/predict: significant Customer usage events , NFV KPI's events (to determine new network capacity)
- RT-Analytics based on CEM and network capacity to be transmitted to determine relevant/ pragmatic new offers to my Catalog to publish product offers to the BSS/OSS so that they are immediately available. Provide product managers to the user with automated subscription to the suggested offer.
- **I know that I am successful when** I provide a clear representation of an end-user service into my VNF and NFVi and I can easily bring innovative new products to market based on these services, and they are automatically subscribed, fulfilled and used by end user
- Specific accelerators have been developed to support **3 value generation based use cases**
 - **Dynamic Catalogue** - Real-time, dynamic upselling for 4G heavy users
 - **CEM Monitoring** - Real-time QoE and dynamic orchestration for streaming data services
 - **Performance Management** - Real-time Service Assurance for Hybrid Physical & Virtual Networks

Functional Architecture



CEM monitoring to detect potential new offers

Offers cloned from observed CEM analytics



Customer Experience Management

Performance Mgt

- NFV KPI's
- NFVI KPI's

CEM monitoring

- 4G heavy Usage
- Video QoE

CEM trigger
Video QoE triggers

CEM Analytics
For new offer

Customer Value Management

Auto CSR

Product Order

Dynamic Catalog

Product Canvas

Order Management

Service Activation

TELCO ANALYTICS

NFV KPI's

Policy MGT

4G traffic Data

Broadband
Traffic Data
NFV KPI's

Physical
Infrastructure

Physical
Probes

Virtual
Infrastructure

VNF/LB/PEM

VM

NFVI

ETSI MANO

Orchestrator

VNF-M

VIM

HYBRID NETWORKS: NFP & NFV



Use Cases description



UC1: Dynamic Catalogue

Realtime, Dynamic Upselling from Mobile to FTTH



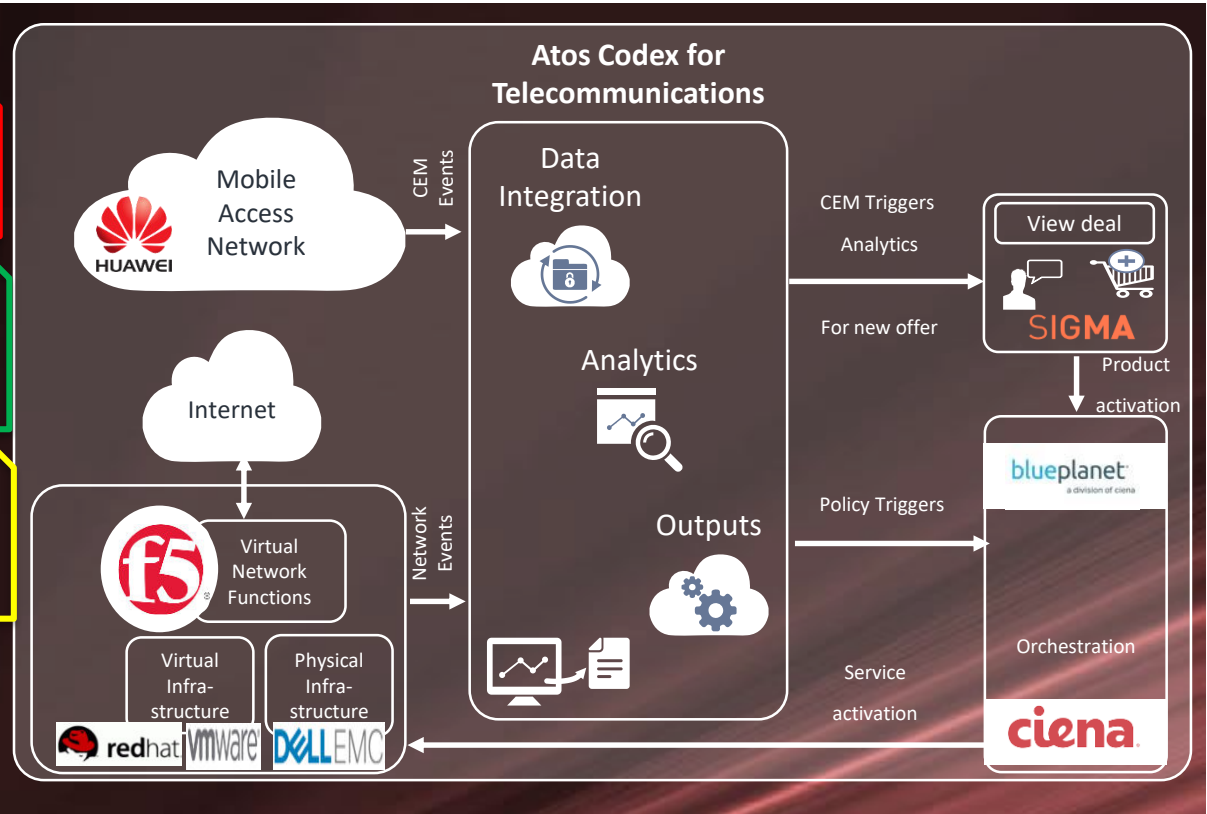
UC2: CEM Monitoring

Realtime QoE and dynamic orchestration for streaming data services



UC3: Performance Mgmt.

Realtime Service Assurance for Hybrid Physical & Virtual Networks





Why?

Broadband services are an essential element for telecoms customers today and transformation to FTTH is a key objective for most Telco's. However this is usually a technology driven migration, resulting in a suboptimal uptake rate for FTTH services

What?

Take-up rate for upsell offers can be significantly improved by targeting customers individually based on a real-time understanding of understanding the data consumption patterns along with demographic and location data.

How?

By performing micro-segmentation of individual subscribers in real-time based on analysis of the network traffic patterns it is possible to send a recommendation to the Dynamic Catalogue which will create the right Broadband upsell offer on the fly to increase take-up rates, increase ARPU and customer satisfaction



Upsell



Super Fast Fibre Home (AKA SFFH)

- Fiber To The Home (FTTH) technology
- 5 speed options: 20Mbps/50Mbps/100Mbps/300Mbps/1Gbps
- Fixed VoIP Phone with unlimited national calls

Fast Home Broadband (AKA HBB)

- LTE modem + router + wifi AP technology
- 10Mbps LTE speed

Use case 2 - Realtime QoE and dynamic orchestration for streaming data services



Why?

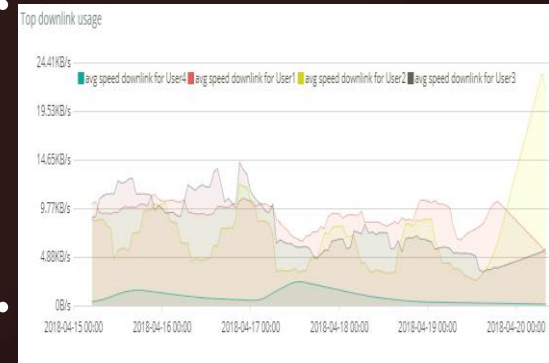
OTT service providers are taking an ever growing share of the customer wallet. In response Telecoms Operators are looking for ways to offer high value services which are mainly based on Data services. Streaming Video is a key example of such high value service. However such services are very sensitive to the underlying network quality. Thus making the management video QoE a key operational priority.

What?

Quality of experience (QoE) for Streaming Video, as well as other high values services like rich communication and Voice over IP can be dynamically managed at the level of the individual subscriber in order to provide the optimum quality of experience for the individual customer based on realtime context and historical consumption patterns.

How?

This solution can plug straight into the GiLan and provides real-time streaming Analytics of IP traffic for individual subscribers. This information can be used to drive real-time network resource orchestration (NFV – Mano) in order to provide optimized QoE for high value clients when and where they need it.



Use Case 3 - Realtime Service Assurance for Hybrid Physical & Virtual Networks



Why?

Deploying NFV creates challenges to properly monitor all the additional NFVI layers introduced in daily operations. Openstack VIM services generate a lot of data that is hard to leverage by CSPs with their current service assurance tools.

What?

Real time predictive analytics can be used to automate NFV orchestration (NFV-Mano) based on infrastructure anomaly detections

How?

Realtime Streaming Analytics is used to combine resource performance metrics (both physical & virtual) together with QoS and QoE measurements for the services being delivered to provide a realtime Service assurance function for Hybrid Physical & virtual networks



Business scenario based on TmForum CEM life Cycle model

Illustration with UC 1 (BSS closed loop action)

BUYING/ CHOOSE

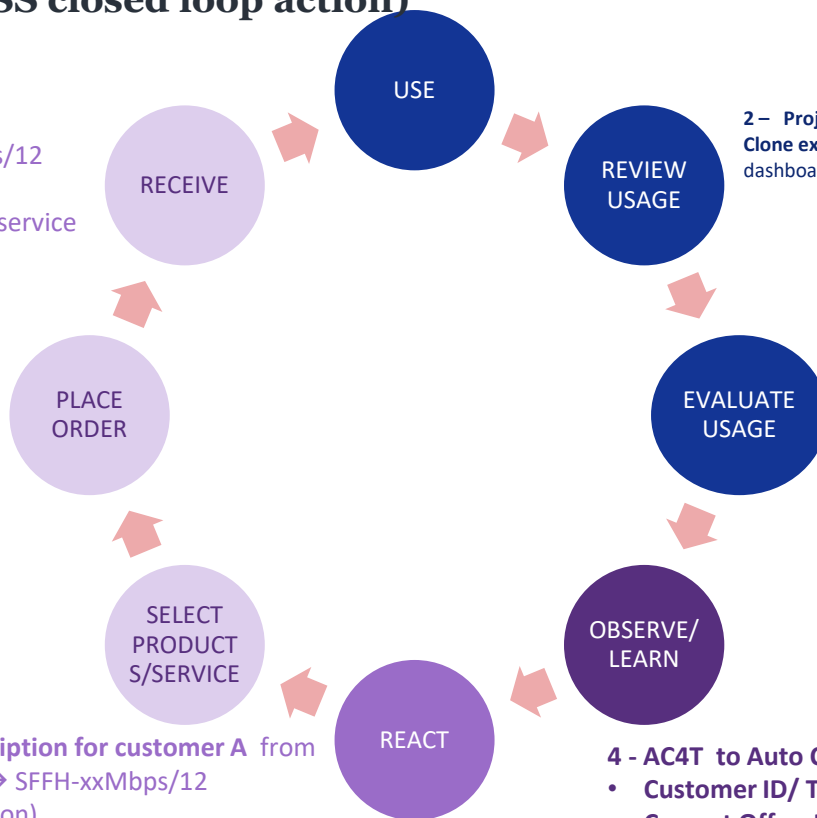
7 – VNF /NFVi activation

Customer A has now a SFFH-xxMbps/12 subscription & can starts using SFFH-xxMbps/12 service

6 – OM to NFV Orchestrator

New SFFH-xxMbps/12 Order/ NFV Service activation for Customer A

5 –Auto CSR create a new subscription for customer A from Analytics sent + Product Canvas → SFFH-xxMbps/12 (Customer A acceptance simulation)



2 – Project Manager to Dynamic Catalog (manually)

Clone existing offer to be created from AC4T - CEM Monitoring dashboard

USING/CONSUME

3 - AC4T - Identify Heavy 4G users at home location (volume & speed)

BUYING/ BE AWARE

4 - AC4T to Auto CSR : CEM analytics

- Customer ID/ Trigger type MobileDataHeavyUser
- Current Offer: HBB-XXX/12
- Fixed geofence coverage
- Max Speed/ Average volume// Usage Profile: category 1,2,3,...
- Top 3 services category



“Re-Inventing OSS/BSS functions with Analytics is key for Telco growth”

Telco's are overwhelmed by data, both in terms of their volume, variety and speed. This is exaggerated though many silos of data within and external to their organisation

Enables accelerated time to value, competitive advantage and ability to drive new use cases with Telecom Analytics at the core of Telco architectures

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Catalyst Project Nice 2018 Predictive Analytics & Dynamic offer migration



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