CLOUD TV

How operators make use of a global technology trend

October 08, 2015

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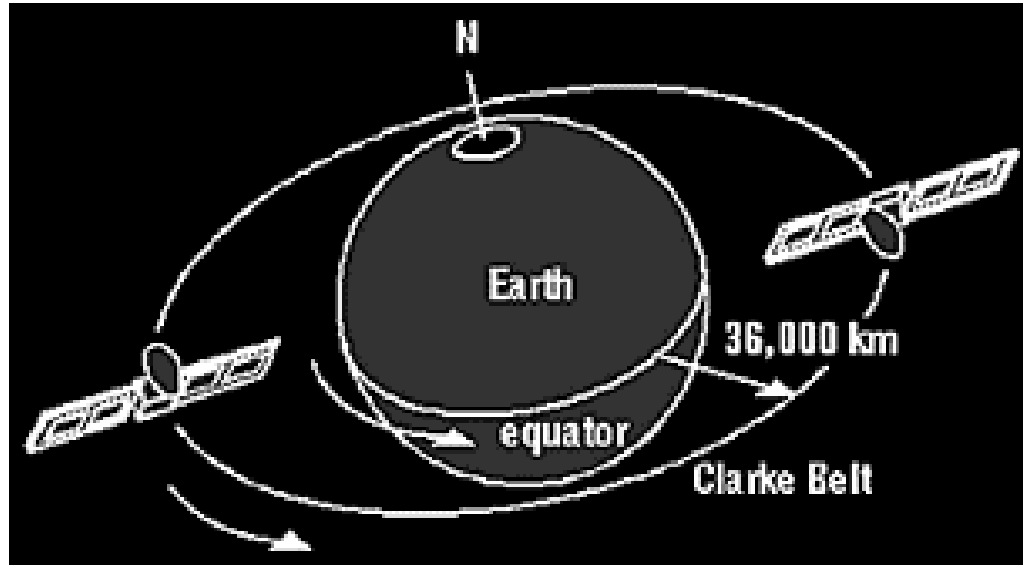
Agenda

1   **SATELLITE IS <u>THE</u> BENCHMARK**

2   CLOUD TV: EVIL OR GOOD?

3   DT'S COMMITTMENT TO CLOUD TV

ABOVE ALL CLOUDS …

36.000 KM ABOVE THE EQUATOR …

- Cloudless environment: uninterrupted availability
- Highly redundant technology, better than telco grade
- Scales well for large broadcast deployments
- Quality independent from number of customers
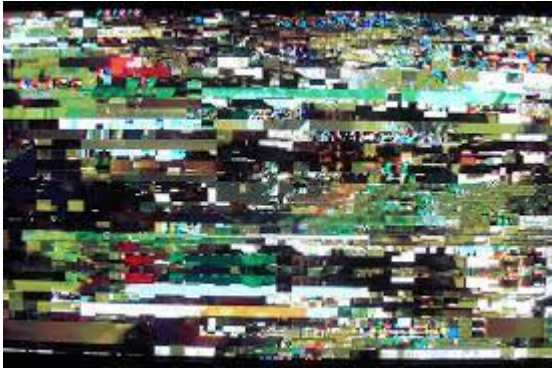
CLOUD IS THE ENEMY OF SATELLITE

DT RUNS HUGE TELEPORTS IN GREECE

- **Excellent climatical conditions**
- **Fully redundant, more than 400km distance**
- **Scalable: 500.000 m^2**
- **Full redundancy, 24/7 support**
- **No ice, no snow, no heating required**

QUALITY OF TV WILL REMAIN ESSENTIAL FOR SUCCESS

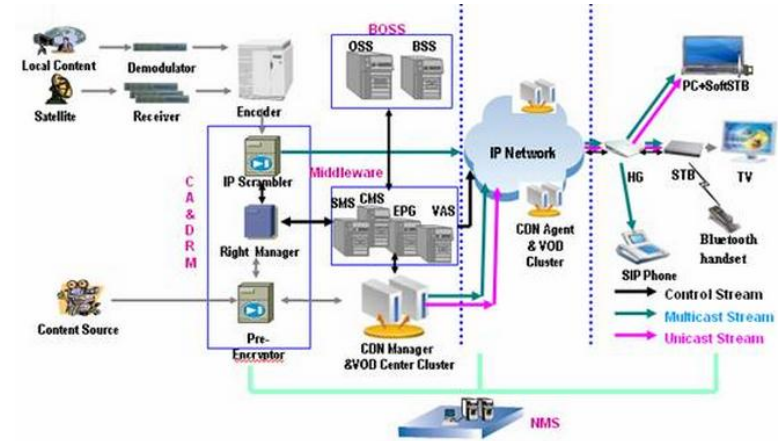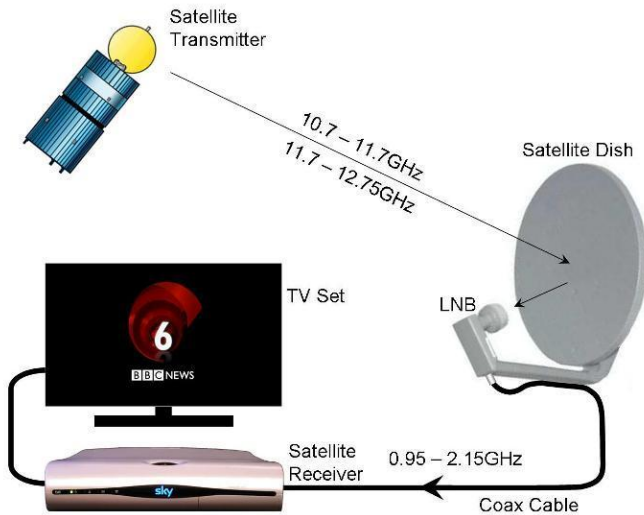

TV QUALITY IS NOT SUBJECT TO NEGOTIATION

- **Increased quality of content: HD, 4k, 16k ...**
- **Increased customer spending on screens**
  - Size matters: living room size is the limit
  - 4K promise is raising expectations
- **Increased cost of exclusive sports rights**

TV = ZERO TOLERANCE SERVICE

- **Consumers expect 100% availability, when watching TV**
- **Internet quality is not sufficient for living room screen @ prime time**
- **Hotline cost grows exponentially with quality issues**
- **TV service provider even blamed for empty batteries in remote, bad soccer results ...**

CHALLENGES OF GROUND BASED TRANSMISSION

SATELLITE NETWORK IS MAINLY PASSIVE ...

- **36.000 km uninterrupted transmission**
- **Number of active elements is very limited**
- **Bandwidth efficiency increasing permanently**

IPTV IS RATHER CHALLENGING ...

- **Number of active elements**
- **Number of combinations can reach ten thousands (backbone, DSLAM, Home Gateway, STB etc ...)**
- **End-to-end quality hard to control**

Agenda

IS CLOUD A GOOD IDEA?

FOR TRADITIONAL TRANSMISSION PEOPLE, CLOUD IS A THREAT

- How to ensure proper end to end QUALITY?
- How to ensure that content is SECURE?
- How to ensure control over my COST?
- How to ensure control over my BUSINESS?

CLOUD IS A WINNING PROPOSITION

INTERNET DYNAMICS AND SPEED ENTER THE TV ARENA

- Dynamic provisioning of computing RESOURCES!
- Ability to allocate cost AS YOU GROW!
- Making business independent from BORDERS!
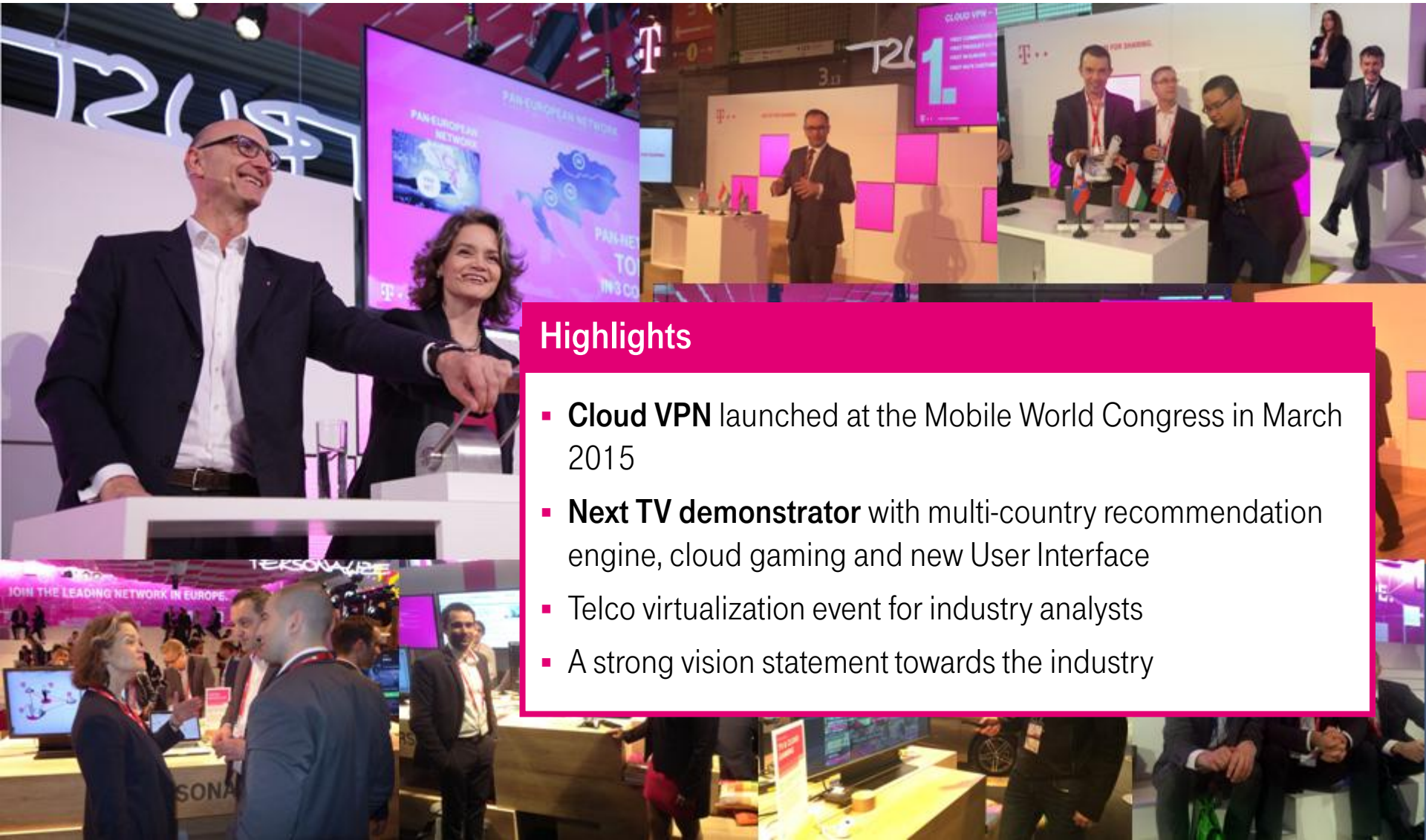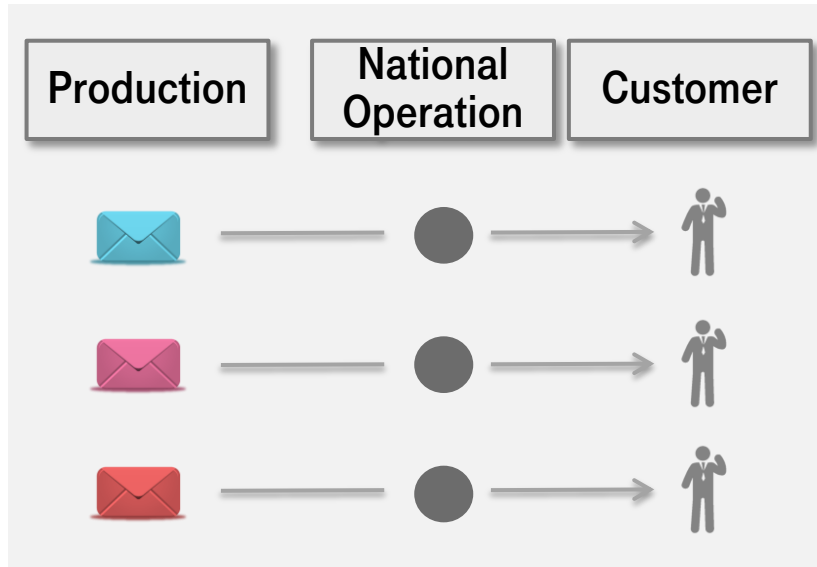- AGILITY, AGILITY, AGILITY!

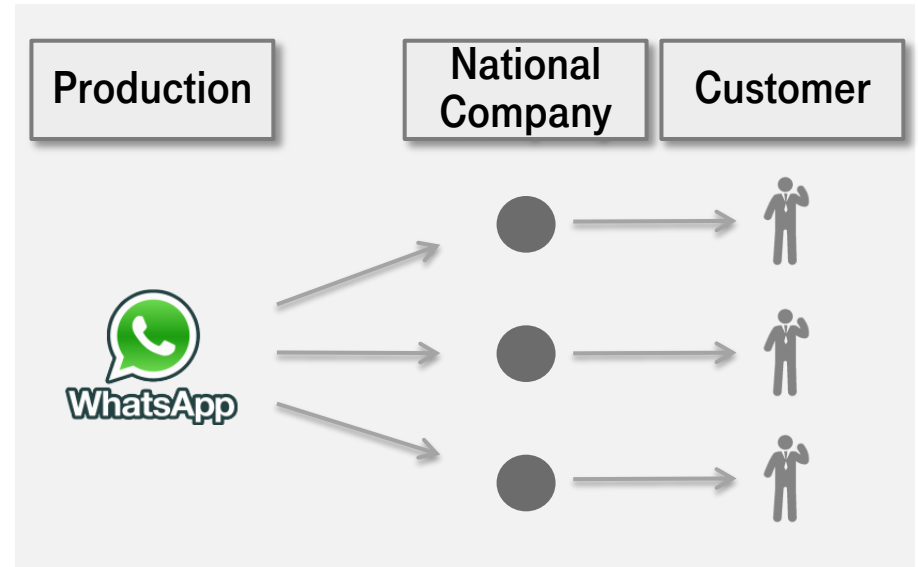# Agenda

CLOUD TV IS ON OUR AGENDA

Highlights

- **Cloud VPN** launched at the Mobile World Congress in March 2015

- **Next TV demonstrator** with multi-country recommendation engine, cloud gaming and new User Interface

- Telco virtualization event for industry analysts

- A strong vision statement towards the industry

LEARN FROM OTT PLAYERS!

Production	National Operation	Customer

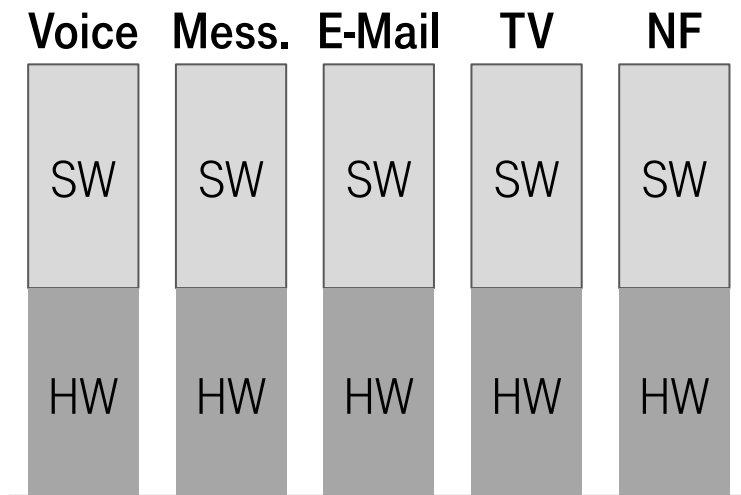| Production	National Company	Customer

- Invest, build up and operation country by country
- Lack of investment capabilities to keep and advance services one by one
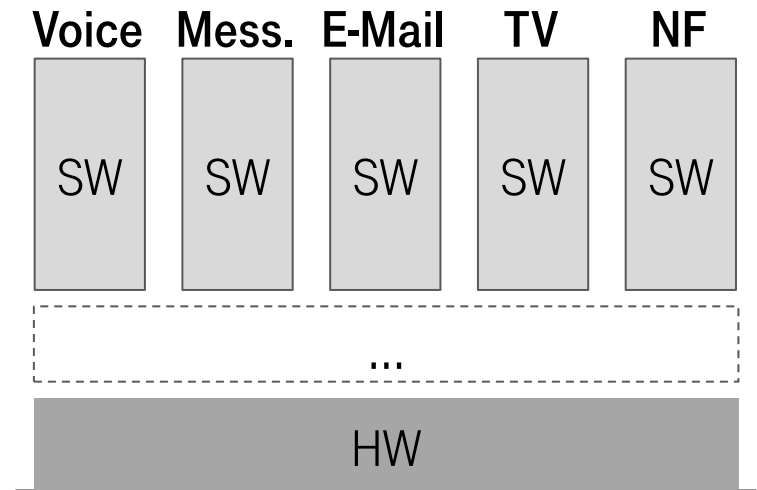- Especially challenging for smaller countries to keep services & quality "up to date"

- Joint production facilities and structure for the whole continent
- Updates of service features immediately available for all customer
- Provide best service to all customer no matter where they live

VIRTUALIZE!

Today: Monolithic platforms

Voice	Mess.	E-Mail	TV	NF
SW	SW	SW	SW	SW
HW	HW	HW	HW	HW

Future: Virtualized platforms

Voice	Mess.	E-Mail	TV	NF
SW	SW	SW	SW	SW

…

HW

Advantages

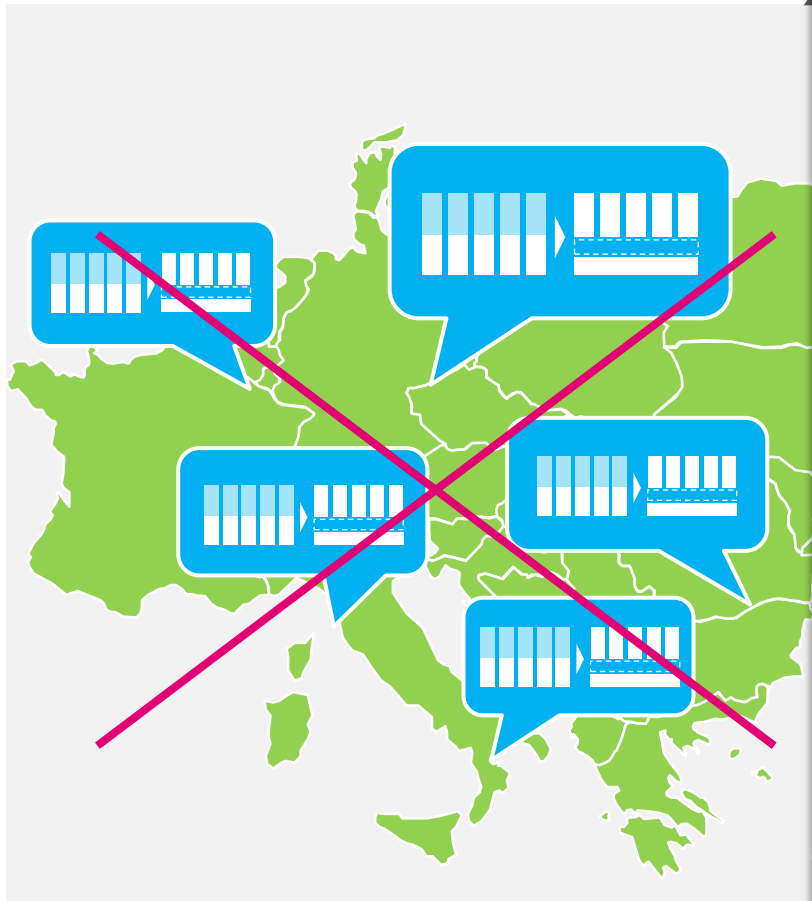✓ Flexible performance to serve demand peaks

✓ New software based products on a trial & error basis

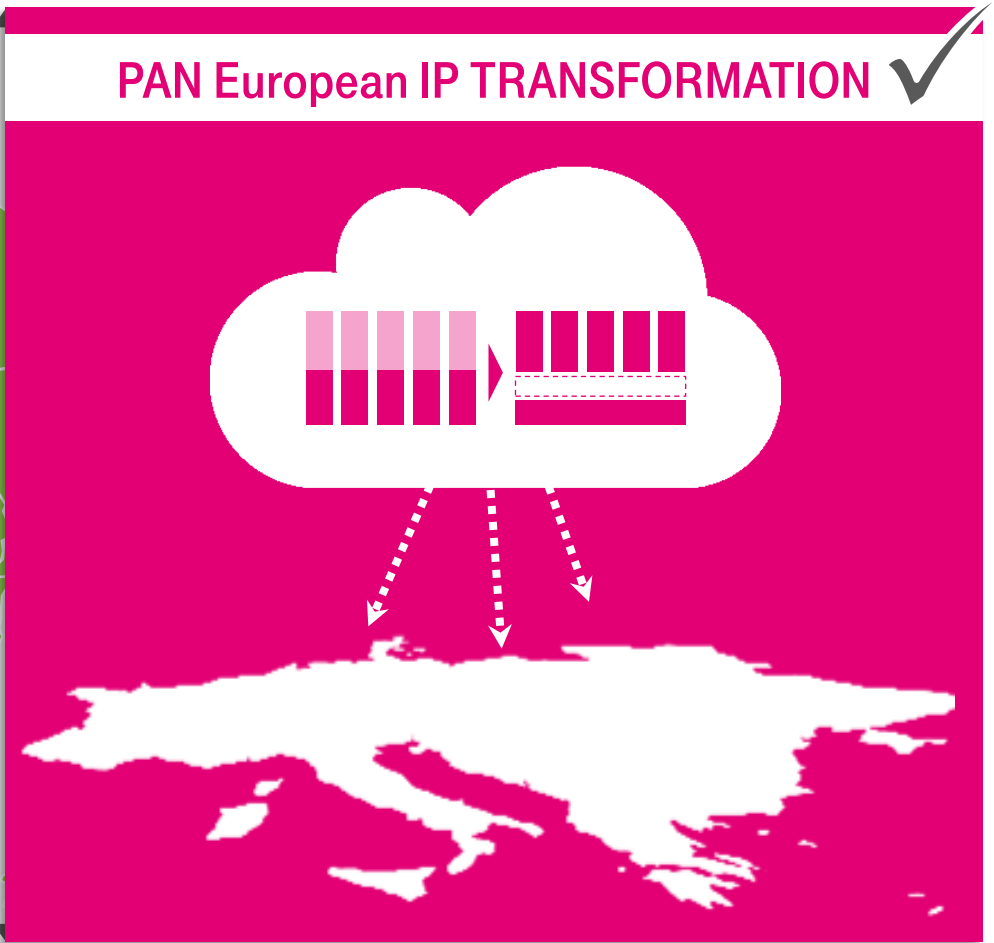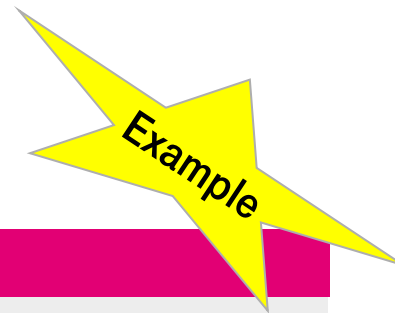✓ Enhance reliability, security, and protection

OVERCOME TERRITORIAL LIMITATIONS!

PAN European IP TRANSFORMATION

LIFE IS FOR SHARING.

ONE CATALOGUE, MULTIPLE PRODUCTS

Example

Central Production Catalogue

TV	BROADBAND	VOICE
OTT services	ADSL 16k	One standard line
Standard Def.	Vectoring 100 Mbps	HD voice
High Definition	Fiber 1 Gbit/s	Multiple lines

Countries

Country A

Country B

Country C

ZOOM ON TV: A NEW DECOUPLED ARCHITECTURE

Black Box
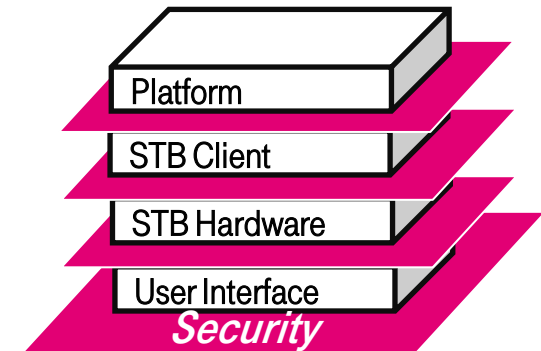
Platform
Client, STB
Security
User Interface

From SINGLE VENDOR BLACK BOX ...

- Bad historical experience: Cost by far too high
- Vendor lock-in: Microsoft, Ericsson, Accenture ...
- No choice (UI, STB, Apps): only 4 STBs, no freedom on UI
- Declining innovation: Latest Mediaroom update 3 years old
- Security defined by platform vendor

Vendor has end to end responsibility and drives his own roadmap

... to: OPEN ARCHITECTURE

- DT defined platform with open APIs and SDKs
- Sourcing: separate deals with vendors
- Cost decline through transparency
- Ability to keep pushing for more innovation
- Security decoupled from platform

Platform
STB Client
STB Hardware
User Interface
Security

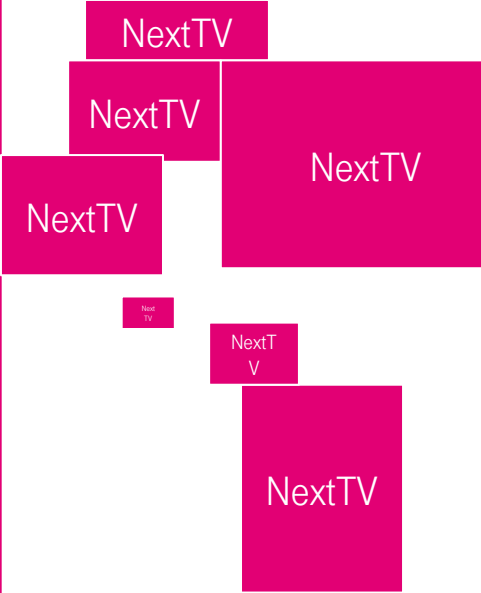**TV Service Center is taking up Responsibility for e2e Vendor Management**

VIRTUALIZED TV BECOMES CONCRETE
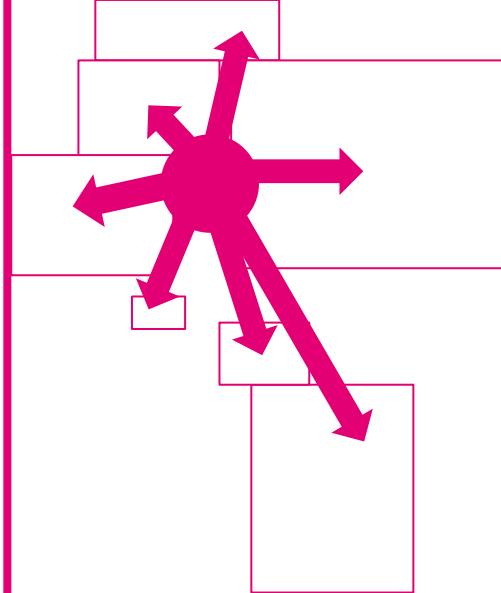
History: Before 2013

- „The Zoo"
- Different set of platforms, clients, DRMs and STBs in each NatCo

NextTV: 2014-2019

- One platform per NatCo
- One architecture
- Same STB hardware, same client framework

Pan-IP: after 2020

- One platform for all
- Centralized production and cloud operation, using Pan-European infrastructure

LIFE IS FOR SHARING.

Thank You!

October 08, 2015

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