



Innovations in Clouds,  
Internet and Networks

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MARCH 1 - 3, 2016

# Real-time Communication Platforms and Services

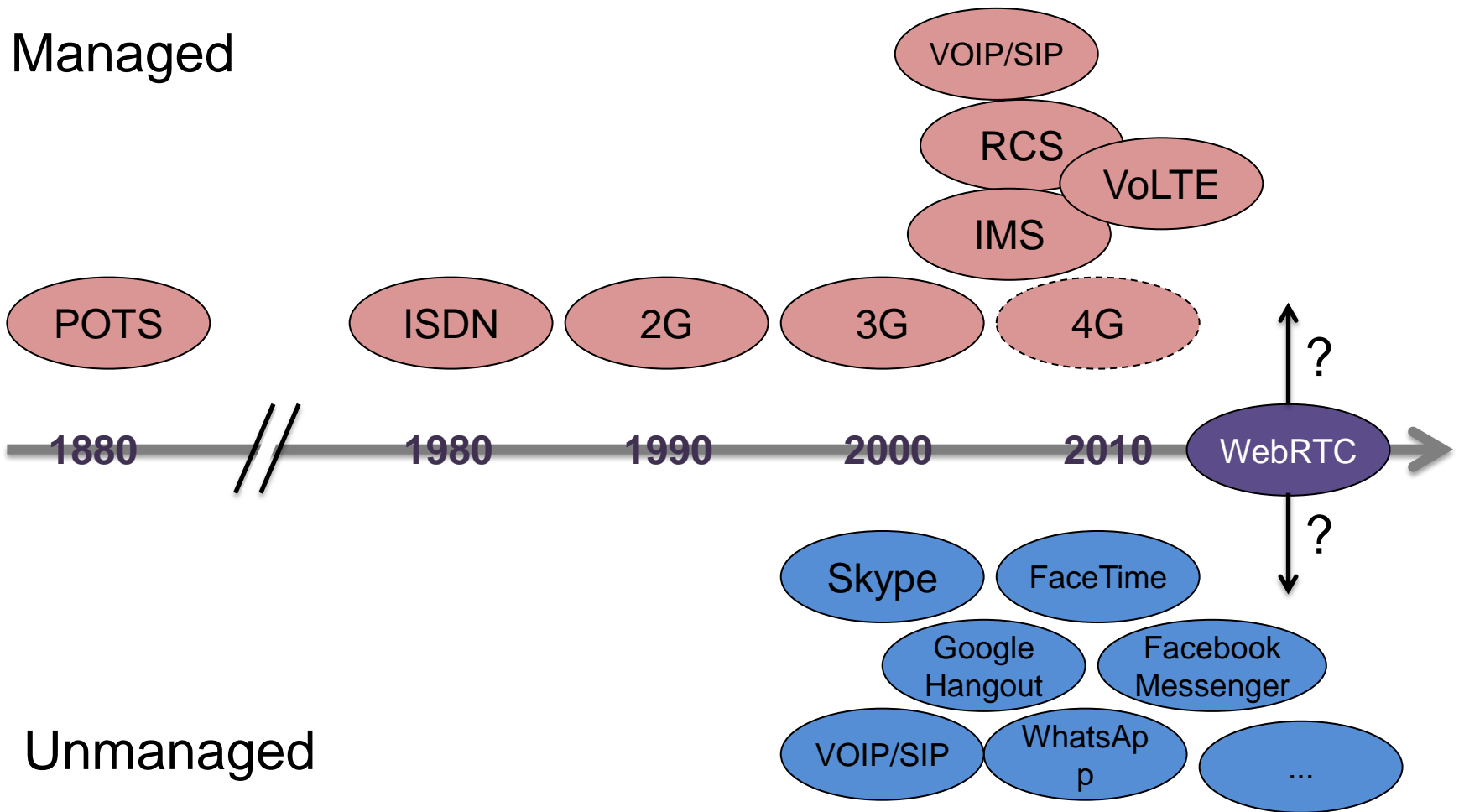
Axel Küpper

Telekom  
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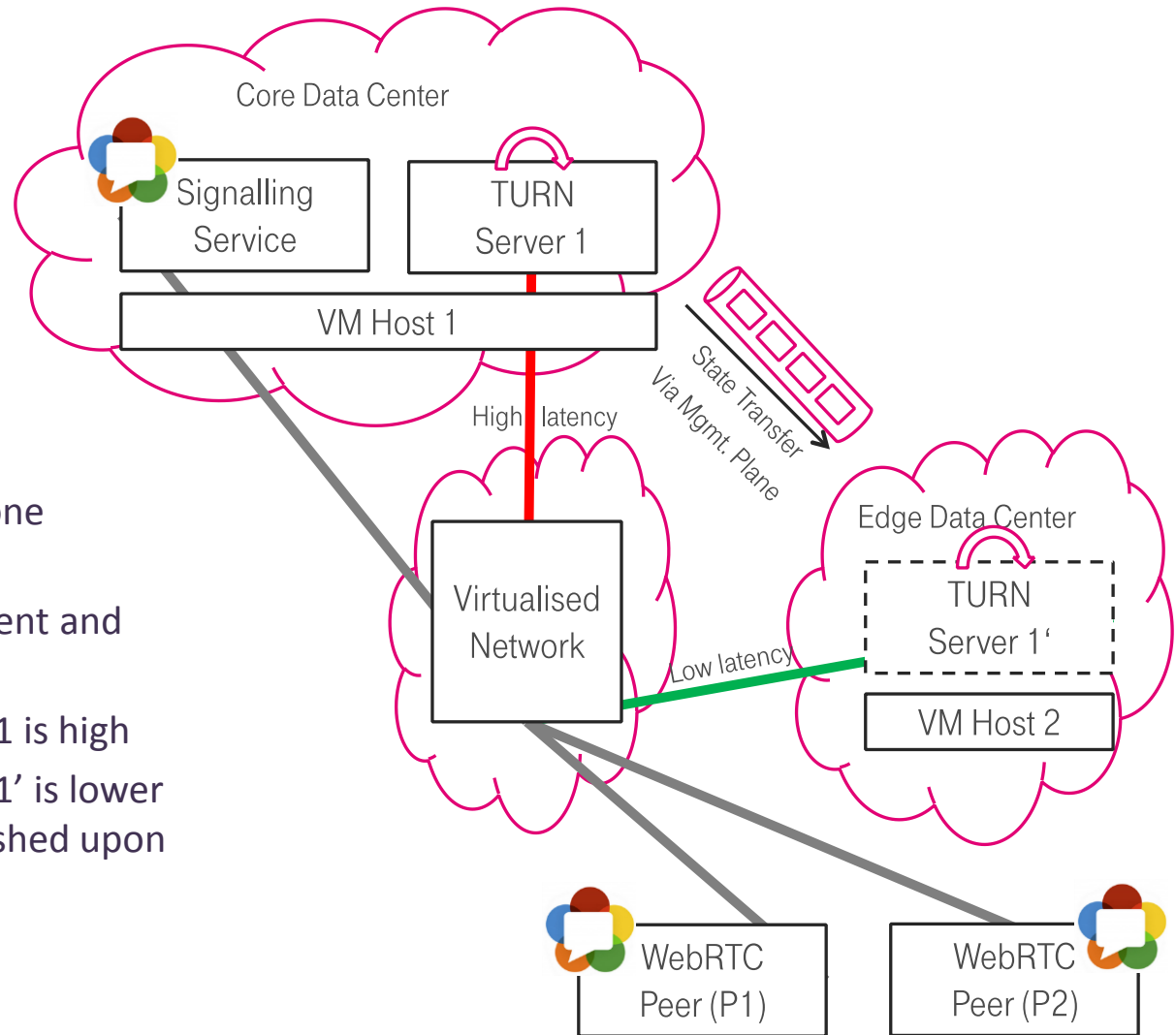


March 2, 2016

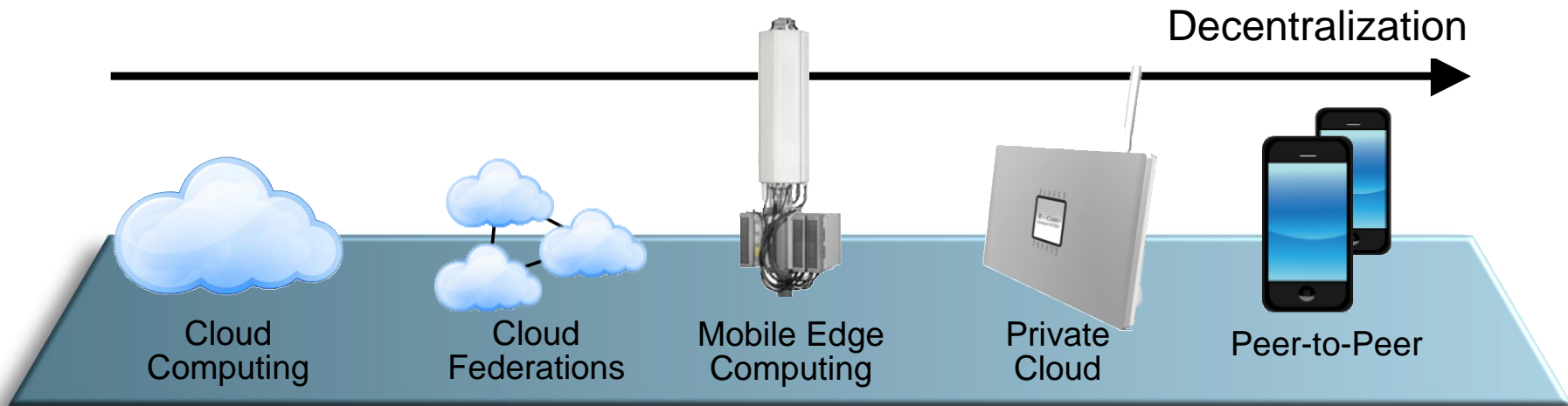
Real-time Communication  
Platforms and Services



- 2 Communication Peers
- Turn & Signalling Services in one domain
- VM Host for service Deployment and Orchestration
- Packet Delay to TURN Server 1 is high
- Packet Delay to TURN Server 1' is lower delay; but will only be established upon request

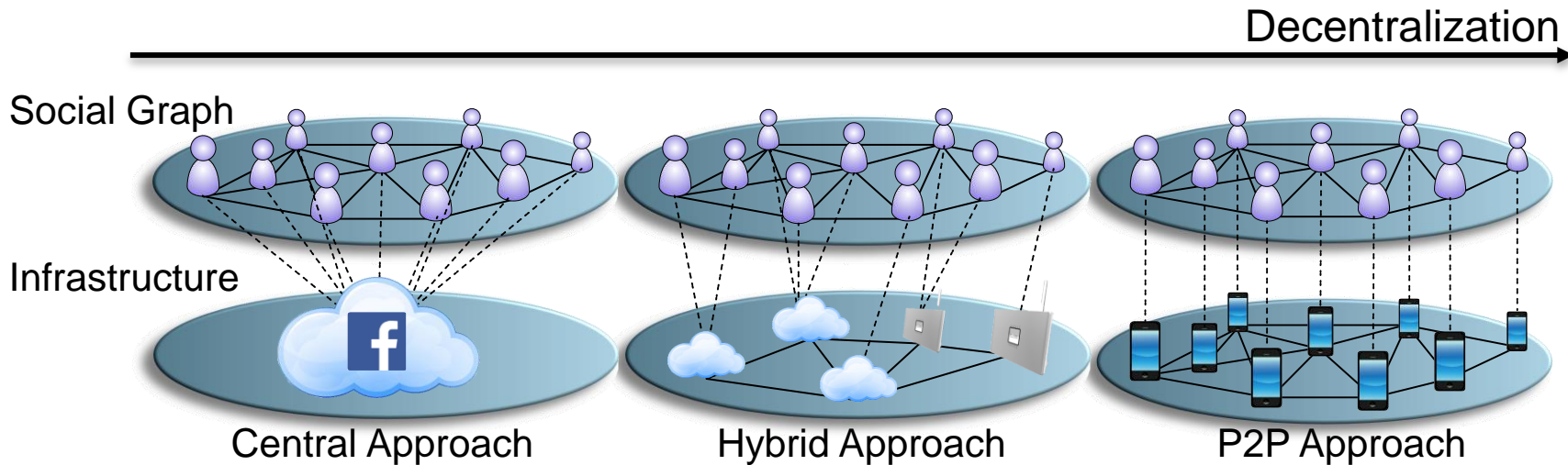


# Central versus Decentralized Infrastructures



## Advantages of Decentralization

- Low Latency Computing
- Load Balancing
- Fault Tolerance
- Data Sovereignty and Power of Data Disposal
- New Business Models



## Decentralized OSNs Challenges

### Distributed, Intra-organizational Social Features

- |                               |                       |
|-------------------------------|-----------------------|
| Profile page                  | Commenting on content |
| Adding/following friends      | Tagging               |
| Friend recommendations        | Image galleries       |
| (Multiuser) Instant Messaging | Event organization    |
| Posting status updates        | Groups                |
| Sharing content               | Poking                |
| Liking content                | ...                   |

# How can Telcos compete with OTT?

- Standardization
- Support of Open Source Communities
- Foundation of Start-Ups
- Acquisition of Start-Ups



14 bn €



- Formation of buying syndicates



2.8 bn €



- **Global Identity and Reachability Framework for Interoperable P2P Communication Services**

*Ibrahim Tariq Javed, Rebecca Copeland, Noel Crespi (Institut Mines-Télécom, France); Felix Beierle, Sebastian Göndör, Axel Küpper (TU Berlin, Germany); Ahmed Bouabdallah (Institut Mines-Telecom, France); Marc Emmelmann and Andreea Corici (Fraunhofer FOKUS Institute, Germany); Kevin Corre and Jean-Michel Crom (Orange Labs, France); Frank Oberle and Ingo Friese (Deutsche Telekom Laboratories, Germany); Ana Caldeira and Gil Dias (Universidade de Lisboa, Portugal); Ricardo Jorge Fernandes Chaves and Nuno Santos (INESC-ID & IST Portugal, Portugal)*

- **TURN Servers Impacts Over WebRTC QoE in 4G Network**

*Antonin Marechal and Ewa Janczukowicz (Orange Labs, France)*

- **WebRTC and IMS: Parallel Universes on a Collision Course?**

*Stephane Tuffin (Orange Labs, France)*

- **A Question of Quality - VoIP, WebRTC or VoLTE?**

*Rebecca Copeland (Institut Mines-Télécom & Core Viewpoint Limited, United Kingdom); Michael Copeland (Core Viewpoint Ltd, United Kingdom)*

- Anticipating Households' Demand for Peak Bandwidth: a Revision of a Model From the Broadband Stakeholder Group**  
*Brahim Allan (British Telecommunications PLC, United Kingdom); Douglas Williams (BT Innovate and Design, United Kingdom)*
- FlashPoll: A Context-aware Polling Ecosystem for Mobile Participation**  
*Bersant Deva and Sandro Rodriguez Garzon (Technische Universität Berlin & Telekom Innovation Laboratories, Germany); Axel Küpper (TU Berlin, Germany)*
- A Text-to-Picture m-Learning System in a Private Wireless Mesh Network**  
*AbdelGhani Karkar and Amal Dandashi (Qatar University, Qatar)*
- Characterization of Priority Control Based on Media Access Control Method SP-MAC Over WLAN**  
*Ryoma Ando, Ryo Hamamoto, Hiroyasu Obata, Chisa Takano and Kenji Ishida (Hiroshima City University, Japan)*
- SDP-based Signaling and OTT Services: History and Perspective on an Evolving Trend**  
*Jean-Charles Grégoire (University of Quebec, INRS, Canada)*



- **When Coactivity Enhances Video Communication Experience**

*Mathilde Cosquer and Claude Daloz (Orange, France)*

- **Design and Implementation of a High Performant PaaS Platform for Creating Novel Real-Time Communication Paradigms**

*Alice Cheambe, Maiorano Pasquale and Flavio Murgia (Fraunhofer Institut FOKUS, Germany); Boni Garcia and Micael Gallego Carrillo (Universidad Rey Juan Carlos, Spain); Giuseppe Carella and Lorenzo Tomasini (TU Berlin, Germany); Alin Calinciuc and Cristian Spoiala (University Stefan cel Mare Suceava, Romania)*

- **The ABC of Future Global Reachability**

*Francois Toutain, Emmanuel Le Huérou and Eric Beaufiles (Orange Labs, France)*



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# Thank you!

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