SoftNet 2014

Panel debate
CENTRIC/INNOV/SOTICS/ICCN
Wednesday, October15th, 2014
Nice, France

Panelists

- **Moderator**
- Lasse Berntzen, Buskerud and Vestfold University College, Norway
- **Panelists**
- Alessio Antonini, University of Turin, Italy
- Tom Fisher, Nottingham Trent University, UK
- Manolya Kavakli, Macquarie University, Australia
- Toshiaki Suzuki, Hitachi, Ltd., Japan
- Stephan Böhm, RheinMain University of Applied Sciences, Germany

Question

- What is your perception of centric?

- Is centric a paradigm, a design principle, a method?

- Do we have examples of centric?

Centricity

- User-, customer-, citizen- centricity
- **Mindset**
- A way (method) of developing products and services that includes the users in all stages of the lifecycle.
- By listening to the users, the risk for failure gets lower, and expensive mistakes can be avoided.

Lasse Berntzen

CENTRIC Metaphor

- Evaluation of the role of information systems in the current scenario (context we work in)

- Perspective about the future of information systems (the goal of our effort)

- Distribution of prerogatives between information systems and users (which contribution we want to bring to society)

Alessio Antonini

- Tom Fischer used a (copyrighted) figure from a paper by Sanders and Stappers (2008) Co-Creation and the new landscapes of design, *Co-Design,* 4, 1: 5-18 to discuss centricity.
- Horizontal axis: users as subject vs. user as partner
- Vertical axis: led by research vs. led by design
- User centered design typically sees user as subject and led by research
- Participatory design research sees user as a partner, and may be led by research or design

First Wave

How would you call the next generation of HCI? Human-centric? User-centric? Personal or Social? Mobile? Ubiquitous (Pervasive & Ambient)? Augmented? Emotion-inspired? Abstracting user, People-centric?

1980s
* Rigid guidelines
* Focus on user and the user dimensions
* Anthropometry
* Human factors
* Work related to the desktop
* Machine centered notion
* Usability testing and experimental psychology
* Tasks based actions

Second Wave

1990s
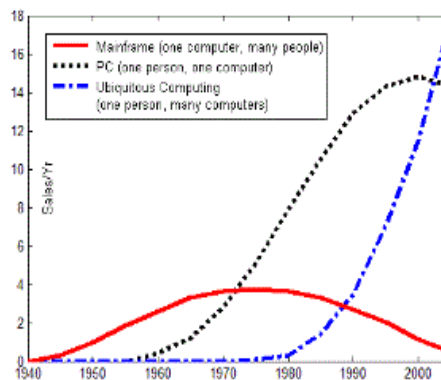* Context Based
* Expansion of HCI research to workspaces
* Context where interactions happened
* Focus on the word 'Humans' from 'Users'
* Emphasis on trying to design for workspace and people around it
* Focus on newer Methods and Rational Thinking
* Participatory Design becomes famous
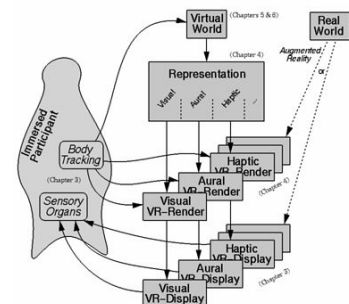
Third Wave

the deletion of a desktop

2000s
* Expanding the reach of HCI to homes and larger environments
* Users are now called actors and participants
* Cultural differences takes prominence
* Solidified Design Processes being followed
* Non Rational Thinking adopted
* Thinking out of the box supported at large
* Research on non tangible factors like Emotions
* Design inputs from multiple mediators
* Wider range of application of technology

https://www.youtube.com/watch?v=bBjvqnKQsTI&list=PLDF1BBECCE066EE5E

Manolya Kavakli-Torne

- Toshiaki Suzuki, Hitachi, Ltd., Japan showed a copyrighted figure to explain the concept of network centricity.

Discussion: Mobile Trends with Relevance for UCD

(1) More and more, **smartphones are becoming a hub** with components and data separated from the phone's hardware

(2) As the variety and complexity of smart environments increase, so too does the importance of **seamless multi-platform concepts**.

(3) **Adaptive Media Richness und Augmentation** will allow for improved efficiency in Mobile communication.

(4) **Context awareness of person, place and object data** will increase the relevance of services for the user.

*How to **advance existing user-centered design, prototyping and testing approaches** to cope with new screen-independent user interfaces, increased complexity of smart environments and adaptive as well as context-sensitive features.*

Stephan Böhm

Concluding remark by moderator

- Centric is about putting something first. User centric is about putting the user first, network centric is about focusing on the network and its capabilities. The panel showed a wide range of approaches to understand the concept of centric.

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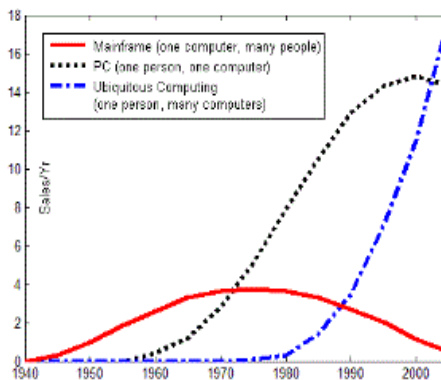* Tasks based actions

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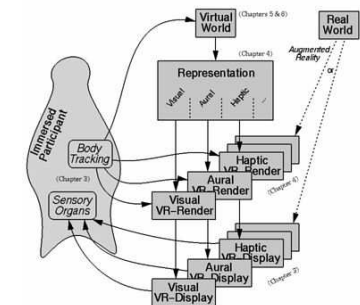* Participatory Design becomes famous

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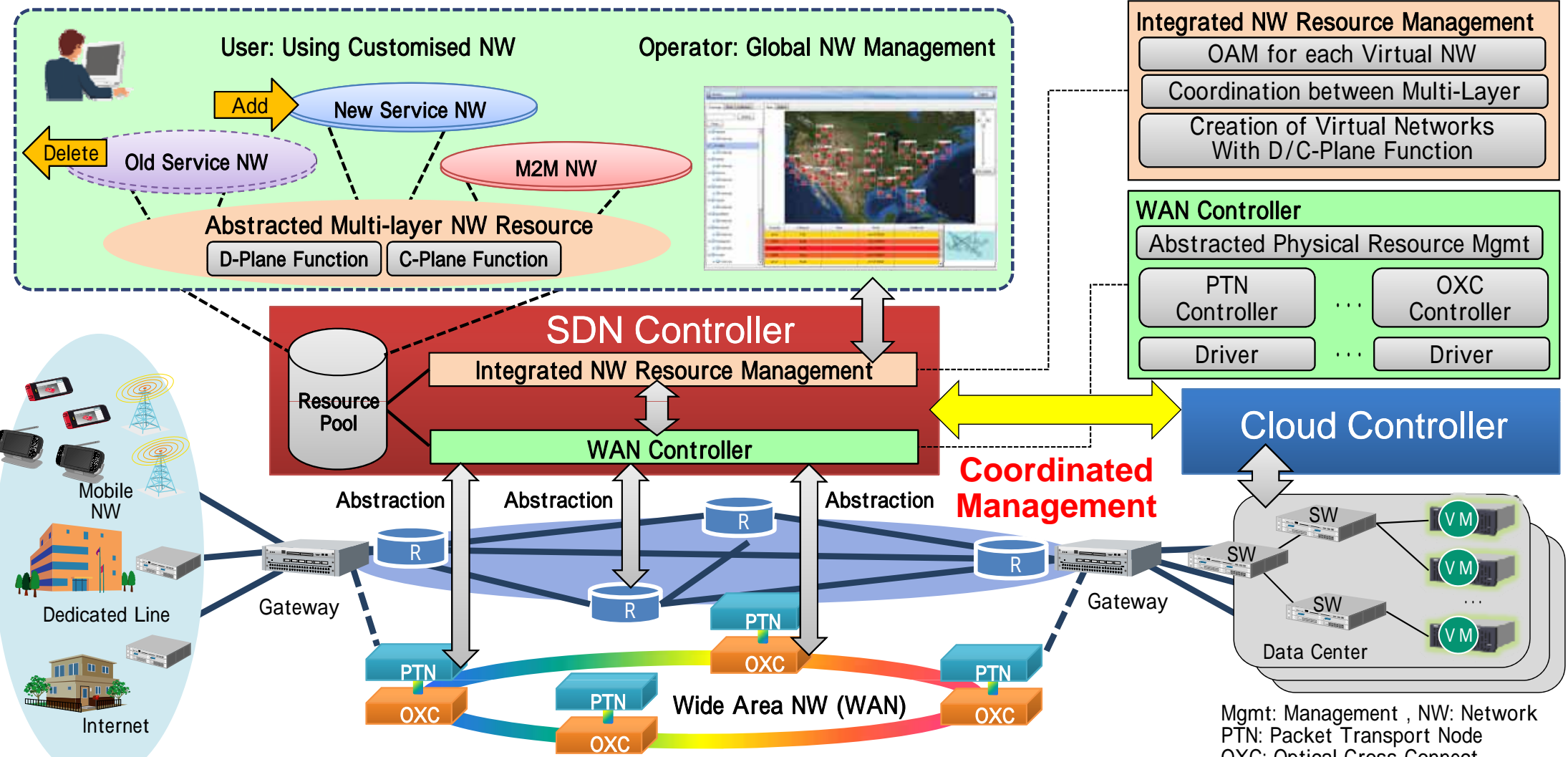# User- centric ICT service with Network and Computation

15th October 2014

Hitachi, Ltd.

Toshiaki Suzuki

User- centric ICT Service based on Coordinated Management

- To create a user-centric ICT service, network virtualisation scheme is useful.
- Coordination between SDN controller and cloud controller is important.
- Power-saving and distributed cloud services could be examples of ICT services.
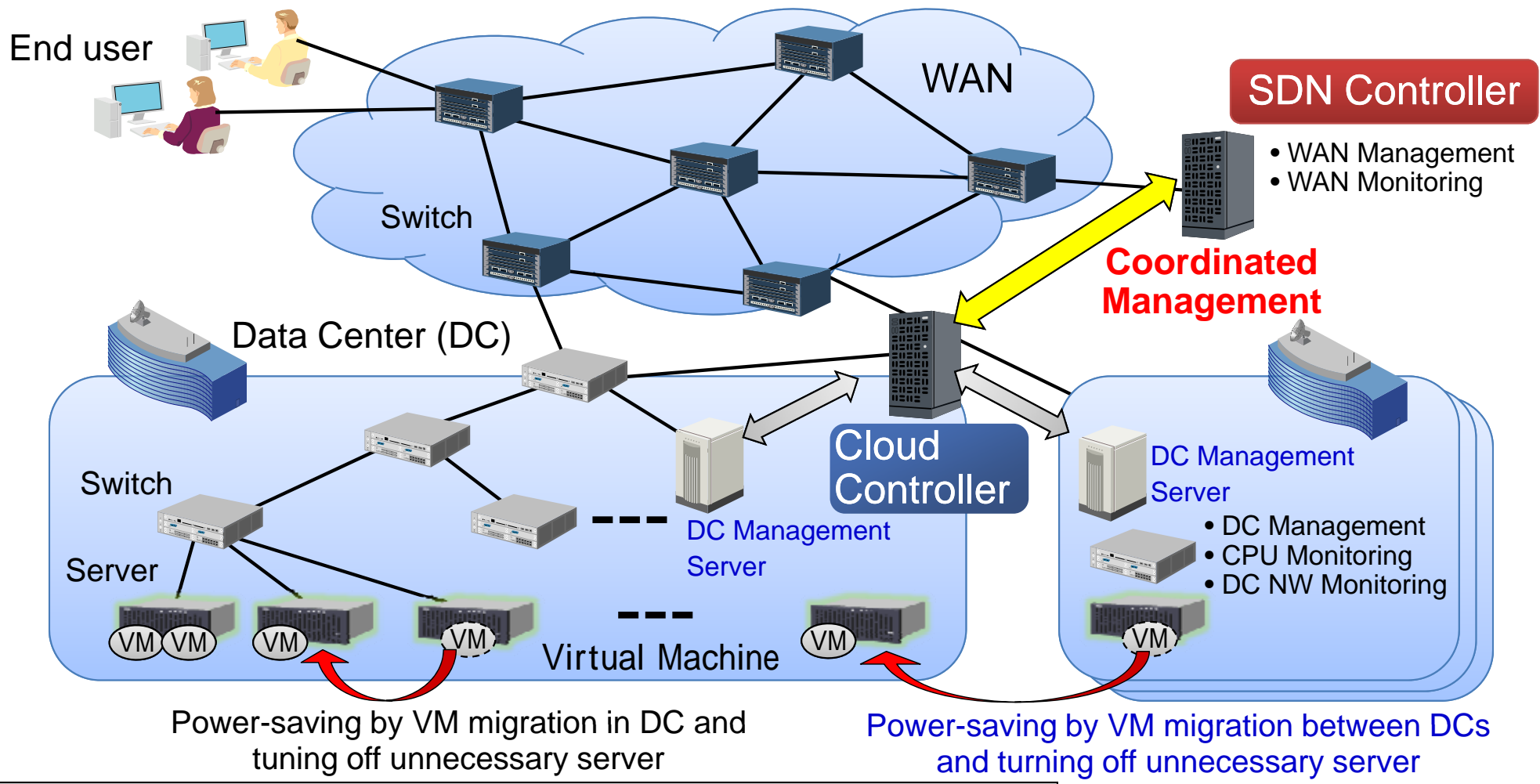

User: Using Customised NW   **Operator: Global NW Management**

Add → New Service NW
Delete ← Old Service NW
M2M NW
Abstracted Multi-layer NW Resource
D-Plane Function   C-Plane Function

SDN Controller
Integrated NW Resource Management
Resource Pool
WAN Controller

Abstraction   Abstraction   Abstraction

Mobile NW
Dedicated Line
Internet
Gateway

Integrated NW Resource Management
OAM for each Virtual NW
Coordination between Multi-Layer
Creation of Virtual Networks With D/C-Plane Function

WAN Controller
Abstracted Physical Resource Mgmt
PTN Controller   OXC Controller
Driver   Driver

Coordinated Management

Cloud Controller
SW
SW
SW
Data Center
Gateway

PTN   OXC
PTN   OXC
PTN   OXC
PTN   OXC
Wide Area NW (WAN)

Mgmt: Management , NW: Network
PTN: Packet Transport Node
OXC: Optical Cross-Connect

1

Distributed Large Scale Power- saving Cloud Service by Coordination between WAN and DC Management for Users

- Power is saved by appropriate VMs' reallocation between DCs.
- Excessive VM migration may cause network congestion.
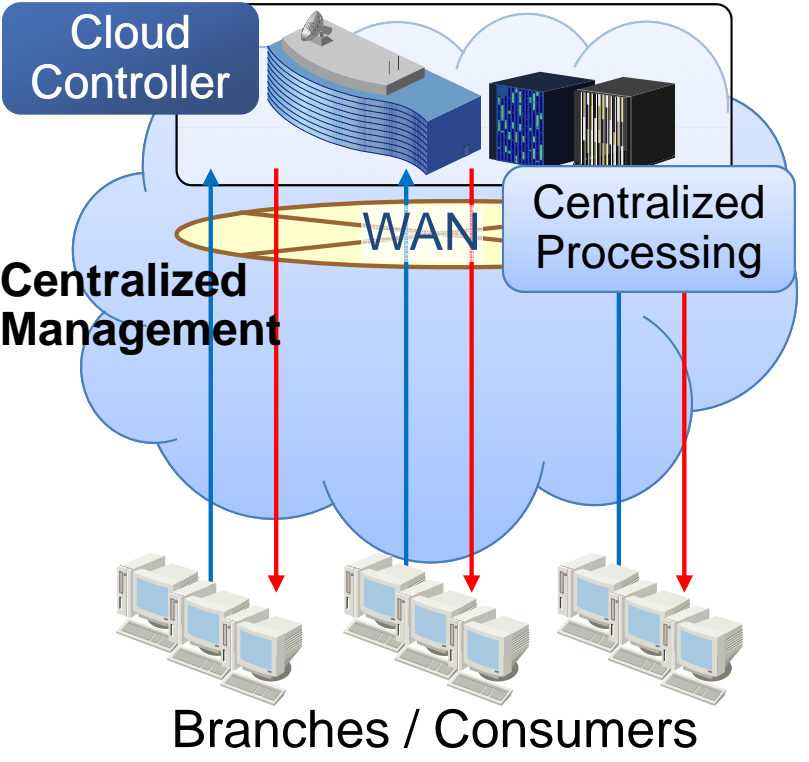- Coordination between an SDN controller and a cloud controller is important.

End user

WAN

Switch

SDN Controller
- WAN Management
- WAN Monitoring

Coordinated Management

Data Center (DC)

Cloud Controller

DC Management Server

DC Management Server
- DC Management
- CPU Monitoring
- DC NW Monitoring

Switch

Server

VM VM VM VM Virtual Machine VM

VM

Power-saving by VM migration in DC and tuning off unnecessary server

Power-saving by VM migration between DCs and turning off unnecessary server
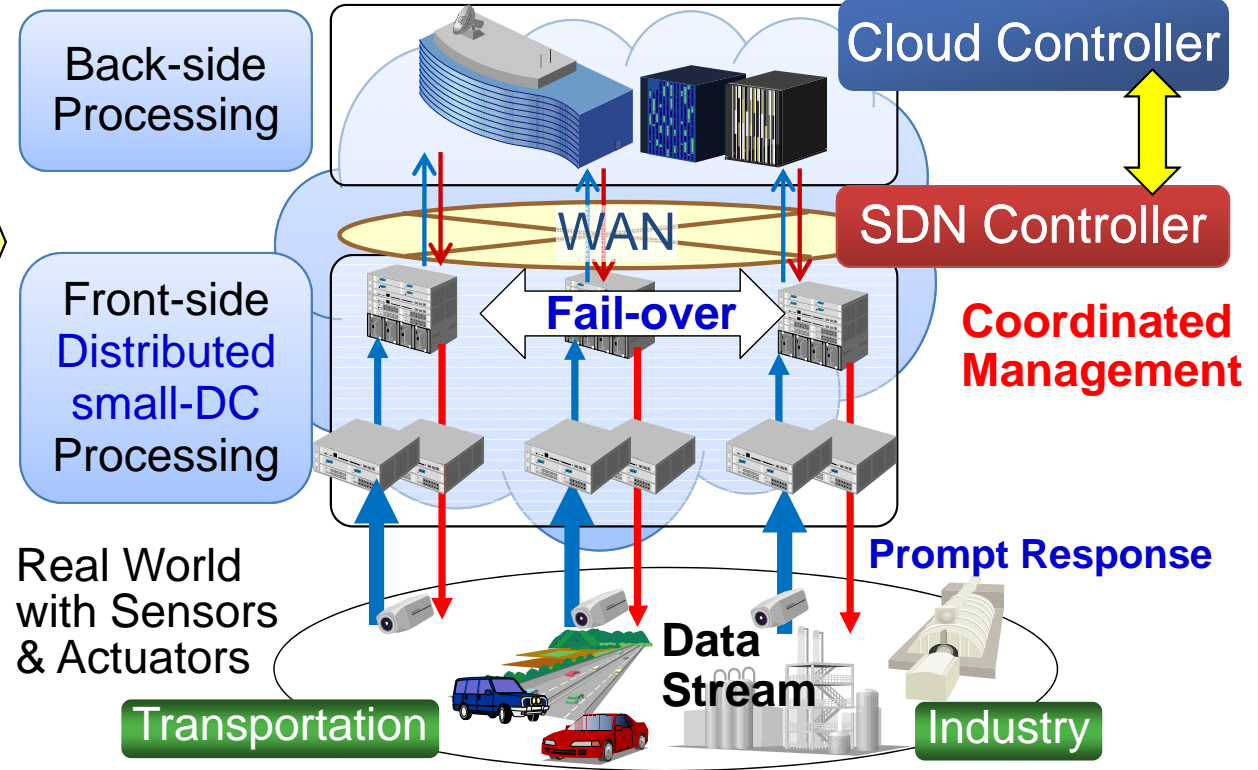
2

Prompt- response and Reliable Distributed Cloud Service by Coordination between WAN and Distributed DCs for Users

Divide processing capabilities of cloud into 2 parts:

- Back-side DC processing: High-level data analysis of stocked data (database management, data mining)
- Front-side Distributed small-DC processing: Handling data streams from the real world (reducing data entering WAN, generating fast response to the real world)

Today's Cloud

Cloud Controller

WAN

Centralized Processing

Centralized Management

Branches / Consumers

Cloud Interacting with Real World

Back-side Processing

Cloud Controller

WAN

SDN Controller

Fail-over

Coordinated Management

Front-side **Distributed small-DC** Processing

Real World with Sensors & Actuators

Prompt Response

Data Stream

Transportation

Industry

Real World/Clients

The part of this research was supported by MIC (Ministry of Internal Affairs and Communications) "Research and Development on Secure Cloud Networking" and "Research and Development on Management Platform Technologies for High Reliable Cloud Services".

Summary

- The NW virtualisation is promising to create a user-centric ICT service.

- To manage virtualized NWs, coordination between an SDN controller and a cloud controller is important.

- The coordinated management is able to provide a customised power- saving, prompt- response, and reliable ICT cloud service.

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