Future Network – Do you like it?

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Key requirements towards 2020, as of today

- Support up to 1000 times more traffic
- Manage up to 10 times more users
- Enable Gbps peak speeds
- Reduce latency to milliseconds
- Improve energy efficiency
- Make networks self-aware, self-adaptable, and intelligent
- Deliver safe superior customer experience

We cannot predict all the use cases so flexibility is a key requirement
How to meet the requirements?

**Automation is a must**
- Network Operations
- Services
- Self-Organized Networks (SON)
  + Learning = Cognitive Networks

**’Newish’ Paradigms**
- Information Centric Networking - ICN
- Internet of Things - IoT
- Machine Learning
- Big Data

**Radio evolution**
- Multi-Access
- 1000x
- Low cost
- Low power consumption
- Low latency
- Spectrum sharing

**“Flat Network”**

**Architectures – Trends**
- Small Cells
- Software Defined Networking - SDN
- Virtualization / Clouds
- Optimized Content Delivery

Flexibility, Automation, Scalability, Quality, Security
Cognitive networks to personalize user experience and network

Utilize big data and machine intelligence technologies

- **Business optimization**
- **Experience optimization**
- **Experience insight**
- **Network optimization**
- **Performance metrics**
- **Experience metrics**
- **Business metrics**
- **Revenue**
- **Users**
- **Define business metrics and analyze business insights**
- **Drive experience optimization with business goals**
- **Use your network as a tool for reaching business potentials**

Network / Devices
Networks

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Information Centric Networking: Accessing right content irrespective of its location (IP address)

Today's IP centric architecture:
- **1. URL to IP location**
- **2. Content request**
- **3. Cache validation**
- **4. Content load**

Future Information centric architecture:
- **1. Request content by Name**
- **2. Load content chunk(s)**

Intelligent Content Routing & caching nodes:
- Resolution of names to route content request to the ‘best’ copy of data.
- Caching of content chunks identified by names.
**IoT Ecosystem**

- **Building Blocks**
  - Faster and cheaper productivity of IoT HW
  - Connectivity has improved
  - Cloud computing as the enabler

- **Verticals**
  - E.g. B2B applications (robotics, etc.)

- **Horizontals**
  - Who has "The SW Platform"?
  - Is there a single platform for all the verticals?
  - Support by the connectivity!