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

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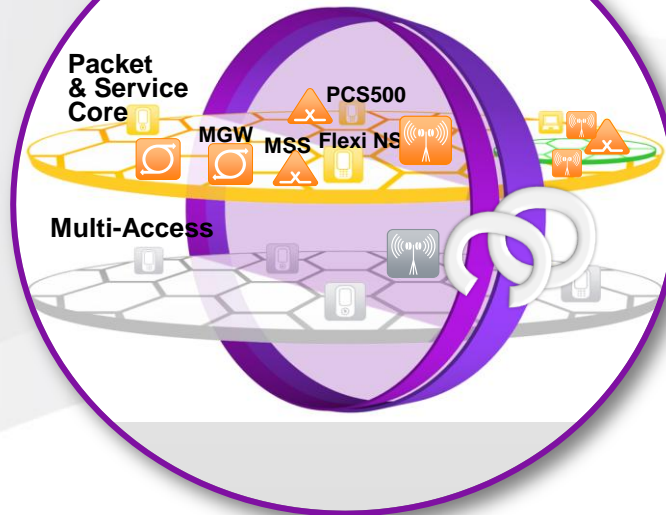
How to meet the requirements?

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

"Flat Network"

Packet & Service Core

PCS500

MGW

MSS Flexi NS

Multi-Access

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

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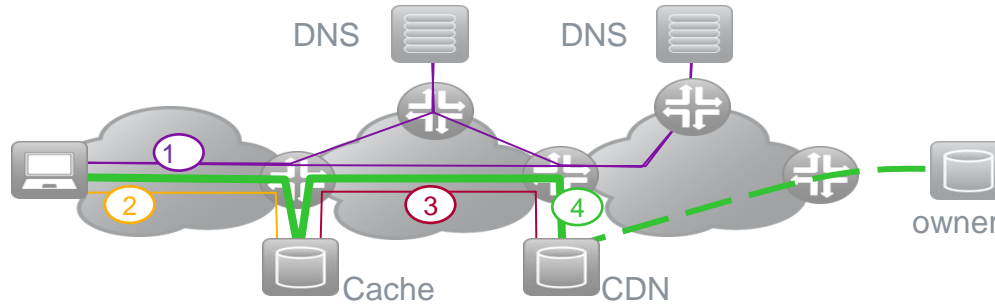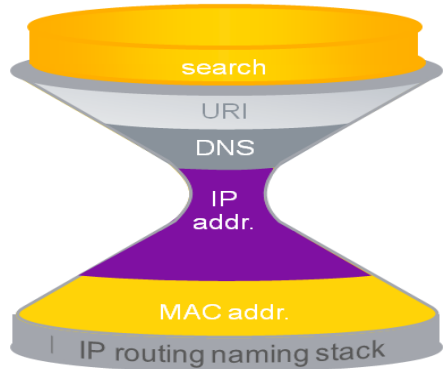- Multi-Access
- 1000x
- Low cost
- Low power consumption
- Low latency
- Spectrum sharing

Flexibility, Automation, Scalability, Quality, Security

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Cognitive networks to personalize user experience and network

Utilize big data and machine intelligence technologies

Business optimization

Experience optimization

Business insight

Network optimization

Experience insight

Configuration management

Performance metrics

Experience metrics

Business metrics

Network / Devices

Networks

Users

Revenue

Use your network as a tool for reaching business potentials

Drive experience optimization with business goals

Define business metrics and analyze business insights

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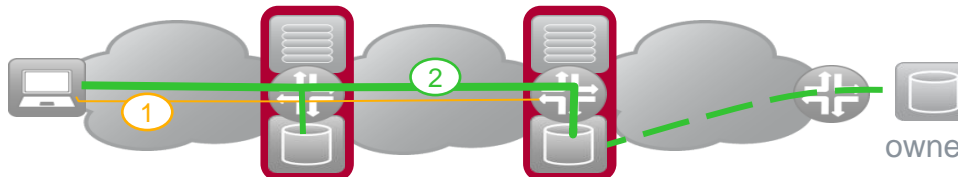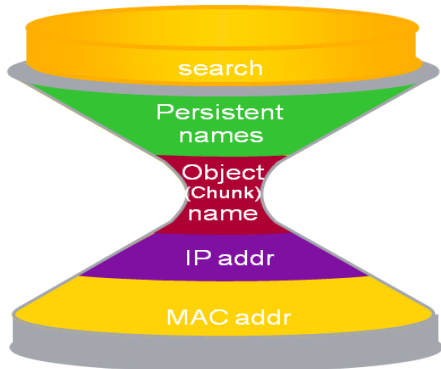
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Thank You!

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

Today's IP centric architecture

search
URI
DNS
IP addr.
MAC addr.
IP routing naming stack

DNS
DNS

owner
Cache
CDN

1. URL to IP location
2. Content request
3. Cache validation
4. Content load

Future Information centric architecture

search
Persistent names
Object (Chunk) name
IP addr
MAC addr

owner
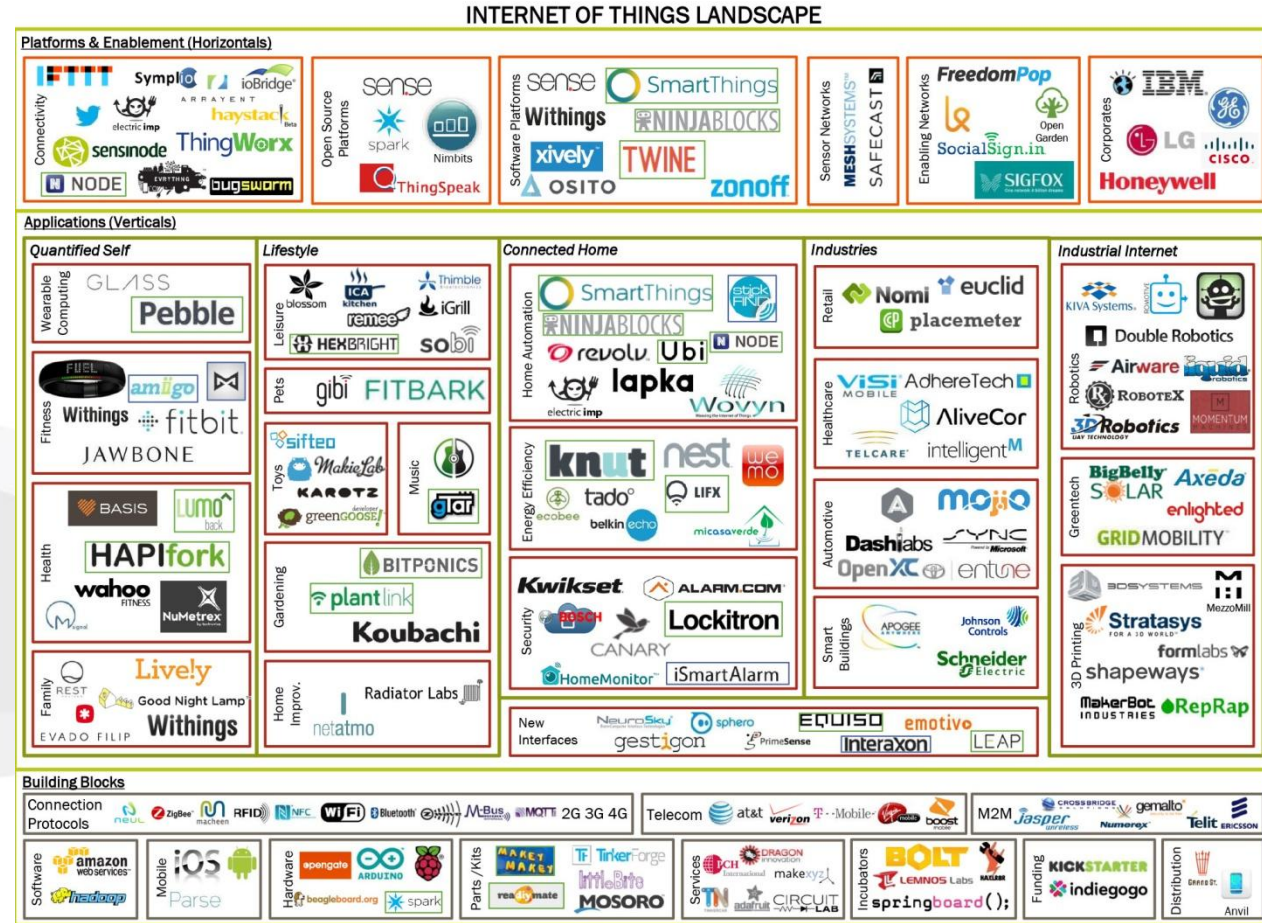
1. Request content by Name
2. Load content chunk(s)

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

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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!?

Ref. Matt Turck: Making Sense of The Internet Of Things, May 25th, 2013; techcrunch.com

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