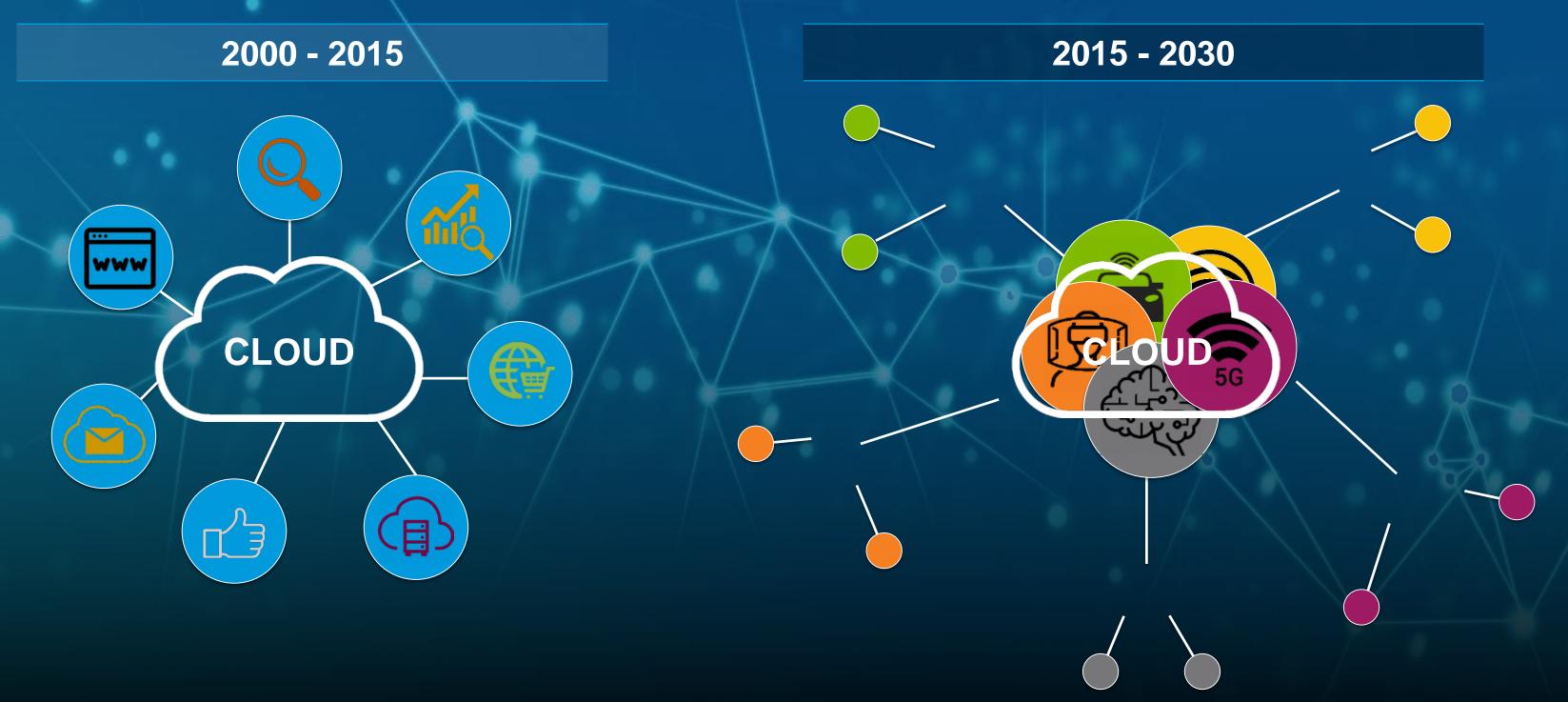**Disruption at the Edge: OCP based CORD on-Demand**
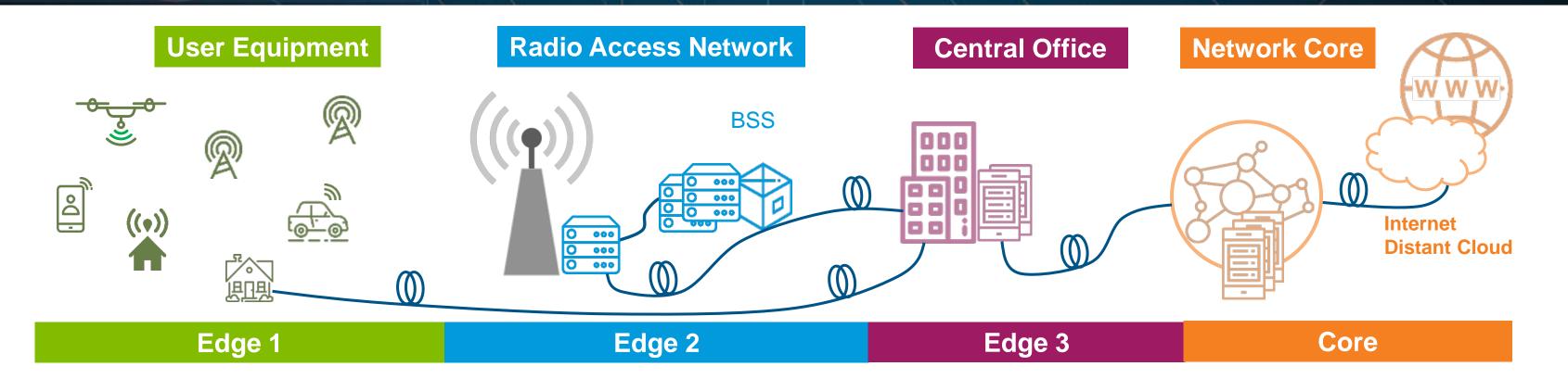
Flex Cloud and Communication Segment
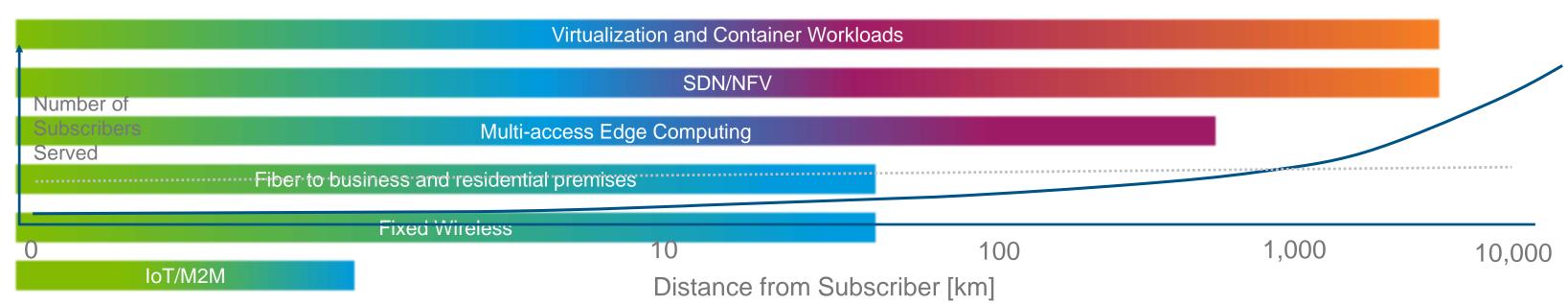
dharmesh.jani@flex.com, VP Product Solutions

Compute redistributes due to new workloads demands

Multiple edges, multiple technologies

Open source presence in edge computing

source: THE LINUX FOUNDATION

CORD: Next gen COs for the Service Providers

CORD: Central Office Rearchitected as Data Centers

Economies of a Datacenter

Infrastructure built with a few commodity building blocks using open source software and white boxes

Agility for Service Provider

SDDC platforms enable rapid creation of new services

flex

Flex reference CORD stack

End to End Automation

Application Software

CORD: 5G Mobile, Residential & Enterprise

vOLT   vSG

Orchestration Software

Scheduler, Resource Manager, Container

XOS   ONAP
OPEN NETWORK AUTOMATION PLATFORM

Platform Level Software

Host OS, Hypervisor, OVS

openstack   ONOS
Open Network Operating System
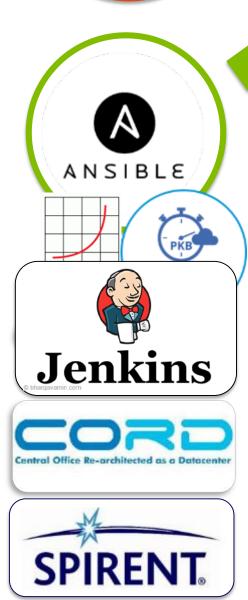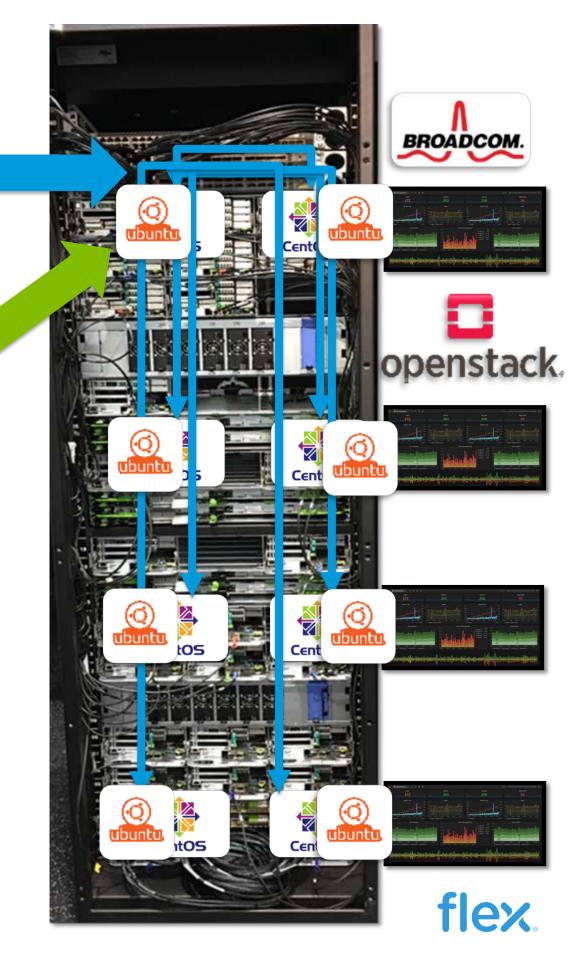
OCP Hardware

Network, Compute, Storage

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CORD automation framework

1. **Switch image deployment & config**

2. **PXE & provision server test images**

3. **Switch & Server HW Inventory, Firmware Update, and Benchmarking**

   A. System Inventory (Ansible)

4. **Network Interconnect Validation**
   B. Firmware Update (Vendor HW utils)
   C. Benchmarks
5. **Server Image Deployment & Config**
      A. CPU (Spec)
      B. Memory (Stream)
      C. Disk (fio)
6. **Cloud Infrastructure Deployment**
      D. System (Unixbench)
      E. Network (iPerf)
7. **CORD Deployment**

8. **CORD Benchmarking**

CORD stack pods

Network Topology

Full Rack POD

Up to 3000 Subscribers

Half Rack POD

Up to 1500 Subscribers

Initial POD

Up to 400 Subscribers

Compute: 4 Srv **Network:** 4 Sw	**Compute:** 15 Srv **Network:** 4 Sw	**Compute:** 30 Srv **Network:** 4 Sw

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Flex Lab-as-a-Service

Community lab to build ecosystem & provide solution trials, validation and certification.

Physical

» Lab space consisting of 2000+ sq.ft. area in Silicon Valley

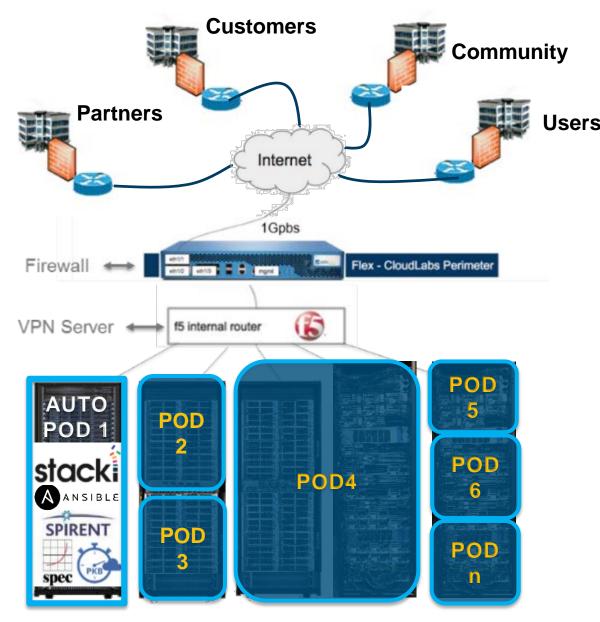» Power and cooling capacity for up to 30 racks

Network

» 1G dedicated network with remote access

» Supports up to 60 secured project PODS

https://flexcloudlabs.com

CloudLabs support

» Partner and vendor staging

» Automation and test tool integration

Our motivation

Promote Open Hardware Platforms

» The On-demand labs are intended to help companies evaluate open source options for hardware and software stacks across North America.

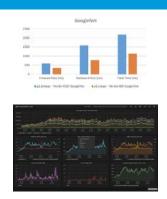## Collaborate across Opensource Consortiums

» LaaS helps by providing disaggregated hardware and software stacks. ONF is testing their software using the On-demand labs to grow the CORD and ONOS communities.

Integrate, Validate and Certify Tools and Software on Platform Solutions
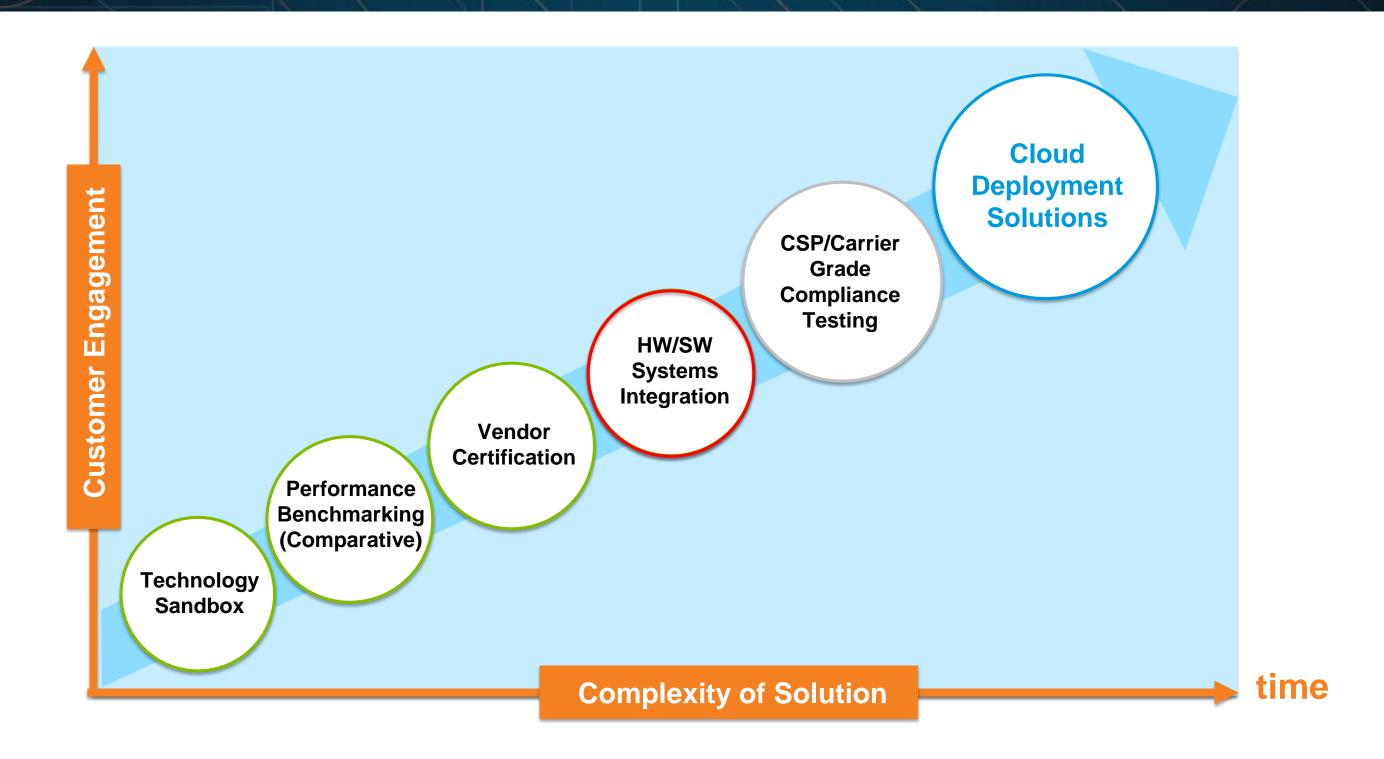
Integrate

Validate

» Flex works with the LaaS ecosystem to integrate OCP and software solutions like CORD. We see a growing interest from Telco to use LaaS for trials before migration to field deployments.

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Flex: A partner from day zero through deployment

Cloud Deployment Solutions

CSP/Carrier Grade Compliance Testing

HW/SW Systems Integration

Vendor Certification

Performance Benchmarking (Comparative)

Technology Sandbox

Customer Engagement

Complexity of Solution

time

flex

Flex participating in edge disruption with…

1. Building automation frameworks for faster rack integration

2. Hosting LaaS to bring open source communities together

3. Deploying reference solutions with partners at scale

flex

"If you want to go fast, go alone
If you want to go far, go together."

Nepali Proverb

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