Network Transformation (Data/Telecom) and Open Hardware/Whitebox
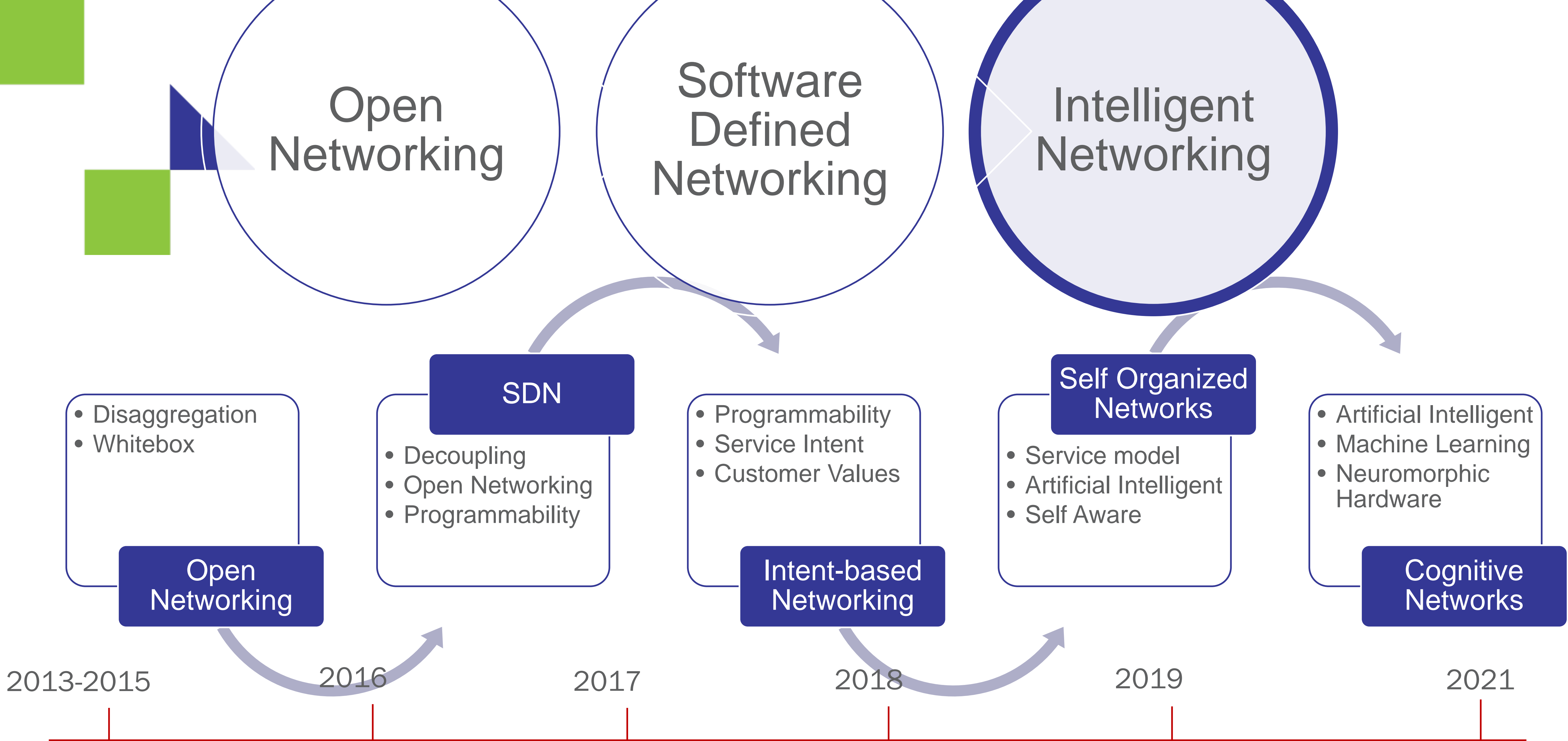
Dhiman Deb Chowdhury, MBA, PhD

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Email: dhiman.Chowdhury@deltaww.com
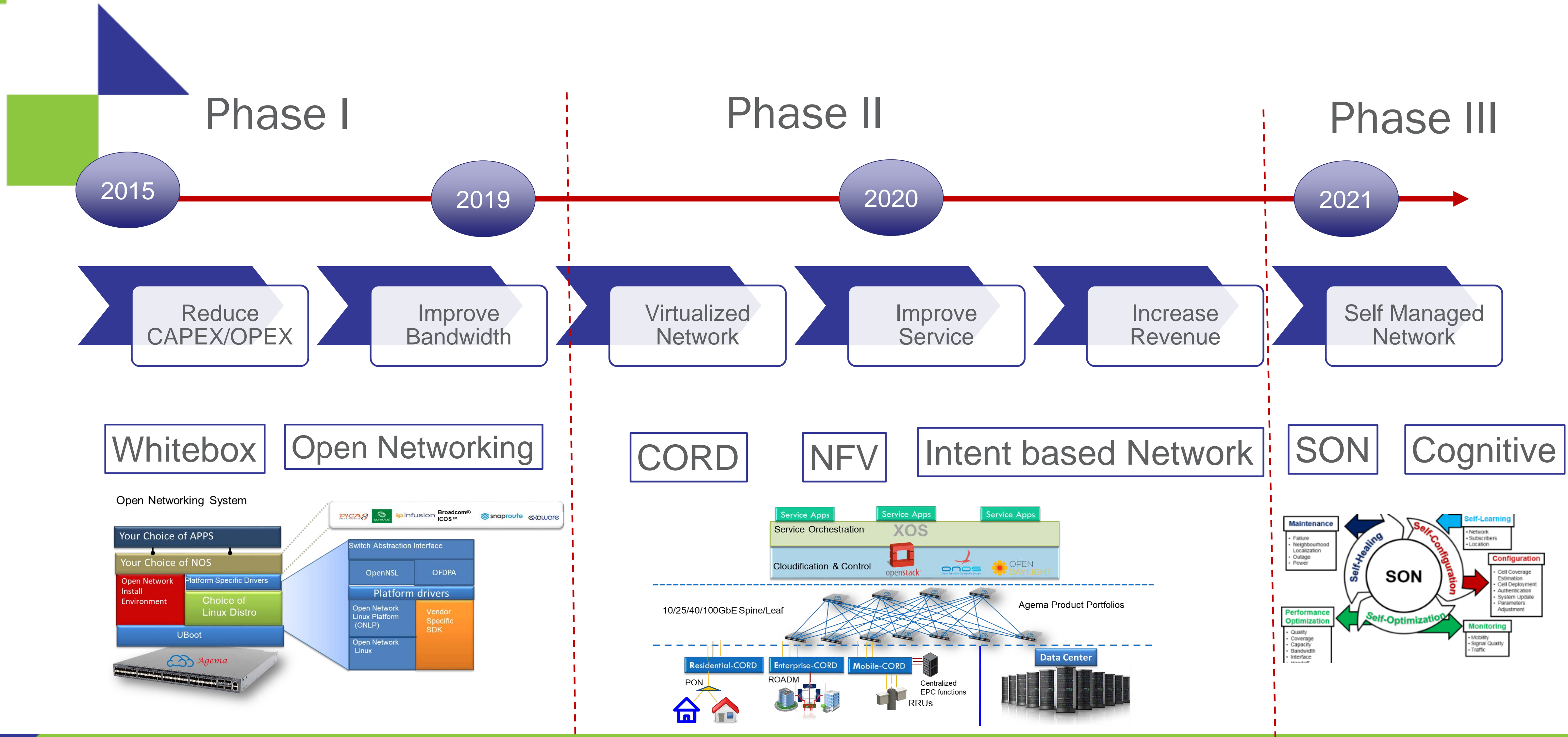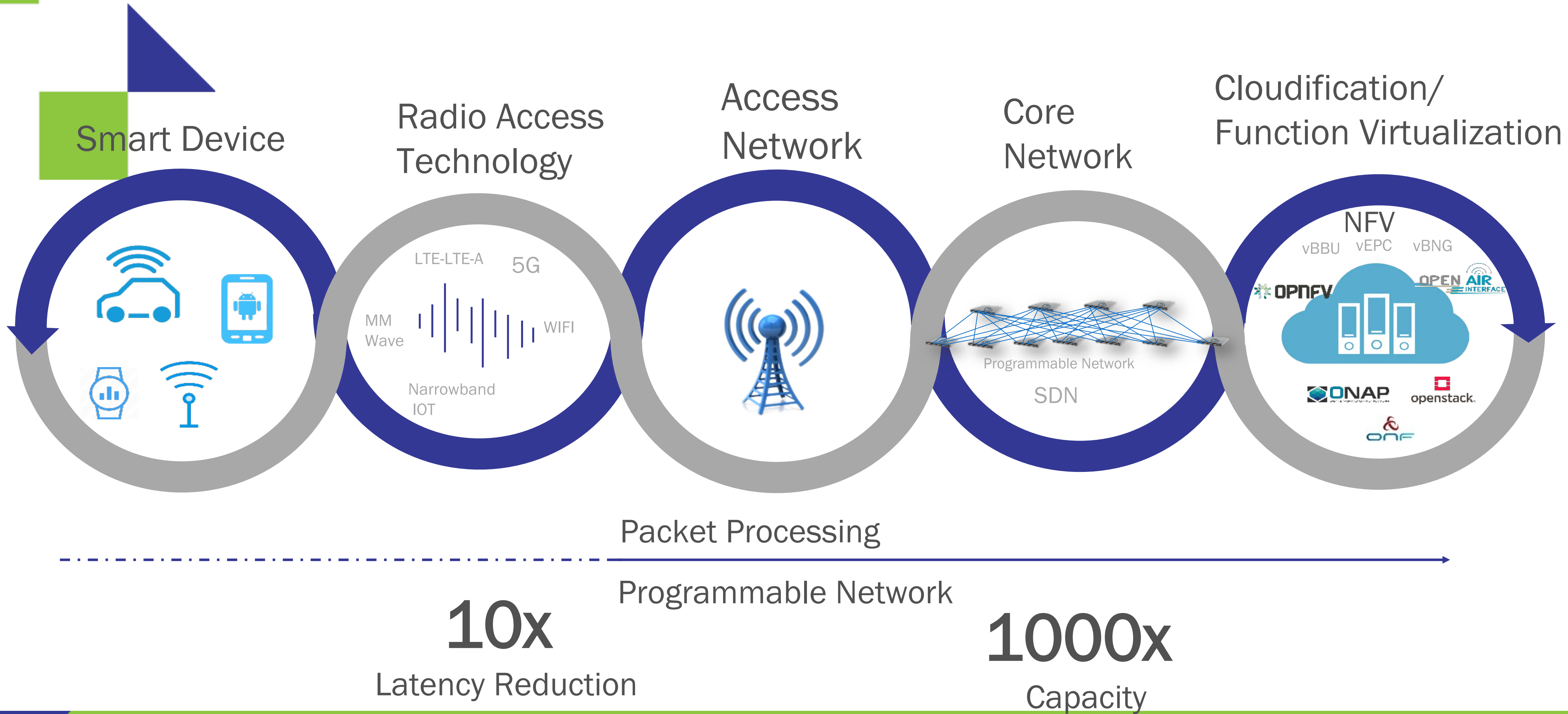
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Open Networking

Software Defined Networking

Intelligent Networking

SDN

- Disaggregation
- Whitebox

Open Networking

- Decoupling
- Open Networking
- Programmability

- Programmability
- Service Intent
- Customer Values

Intent-based Networking

Self Organized Networks

- Service model
- Artificial Intelligent
- Self Aware

- Artificial Intelligent
- Machine Learning
- Neuromorphic Hardware

Cognitive Networks

2013-2015   2016   2017   2018   2019   2021

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Telecom Network Transformation

Phase I | Phase II | Phase III

2015 — 2019 — 2020 — 2021

Phase I
- Reduce CAPEX/OPEX
- Improve Bandwidth

Phase II
- Virtualized Network
- Improve Service
- Increase Revenue

Phase III
- Self Managed Network

Whitebox | Open Networking

CORD | NFV | Intent based Network

SON | Cognitive

Open Networking System

10/25/40/100GbE Spine/Leaf

Agema Product Portfolios

End to End Transformation: Mobile Networks

Smart Device

Radio Access Technology

LTE-LTE-A   5G

MM Wave   WIFI

Narrowband IOT

Access Network

Core Network

Programmable Network

SDN

Cloudification/ Function Virtualization

NFV

vBBU   vEPC   vBNG

OPNFV   OPEN AIR INTERFACE

ONAP   openstack

ONF

Packet Processing

Programmable Network
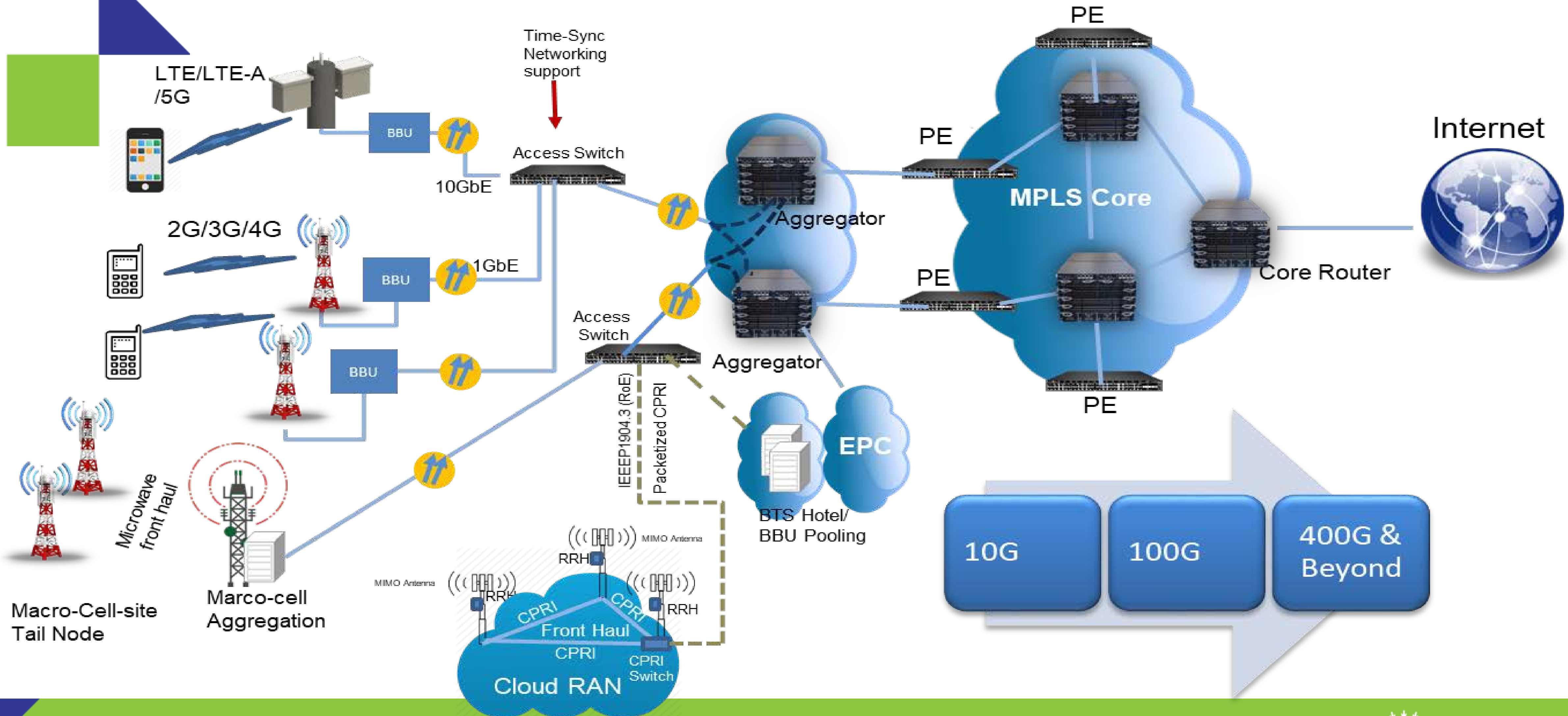
10x

Latency Reduction

1000x

Capacity

End to End Transformation: Fixed-line Networks

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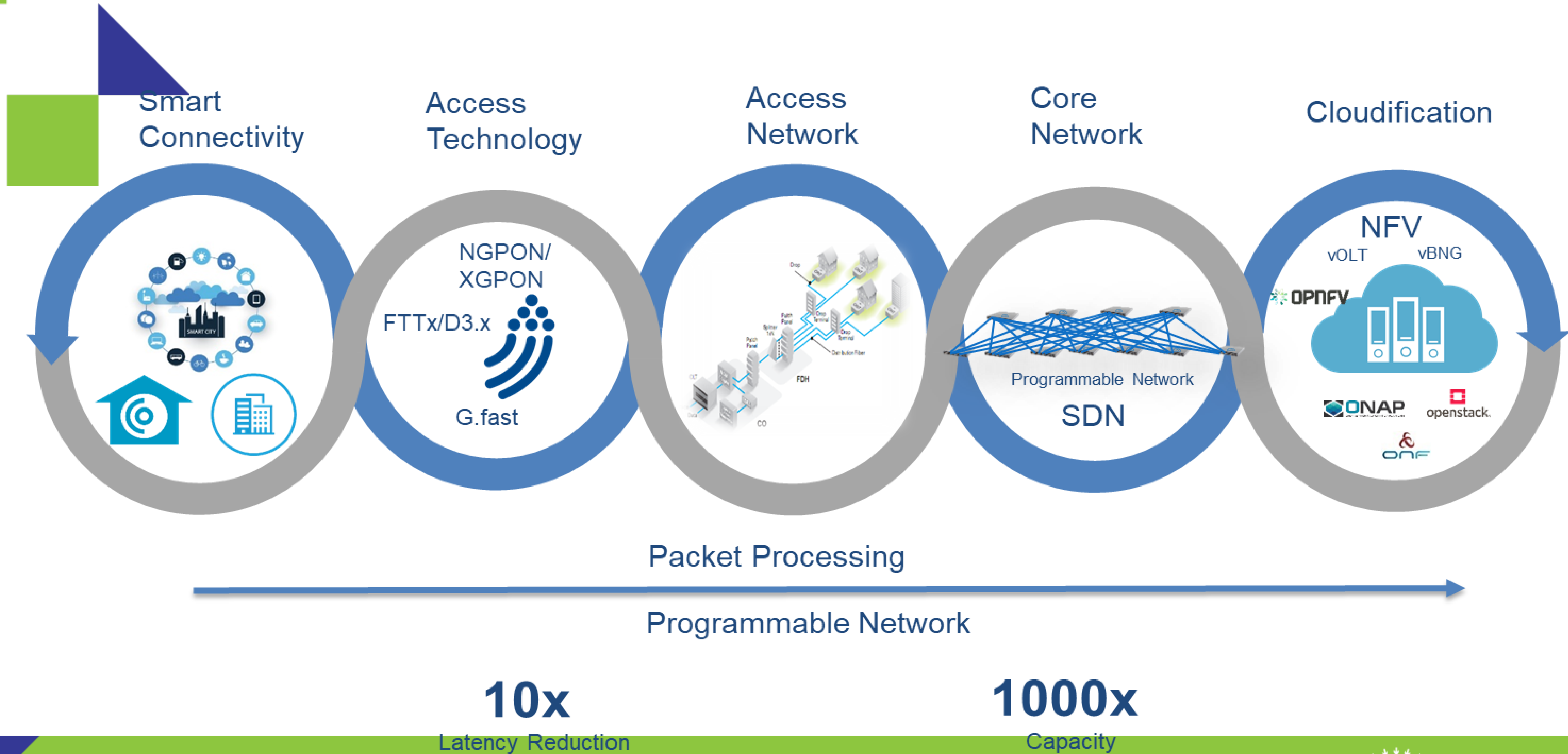
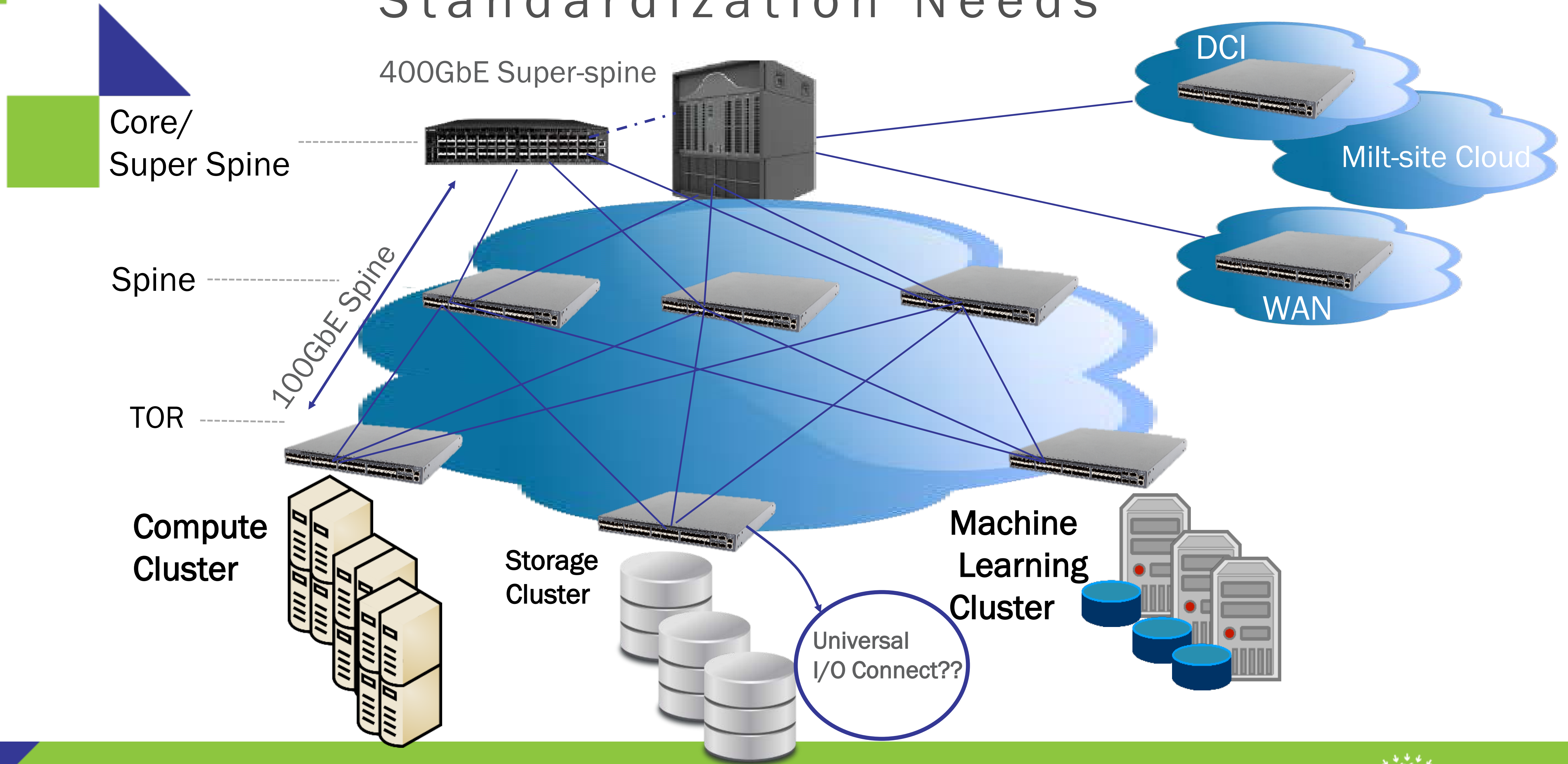# Operator Network Transformation and Whitebox Standardization

Operator Networks: Whitebox Standardization Needs
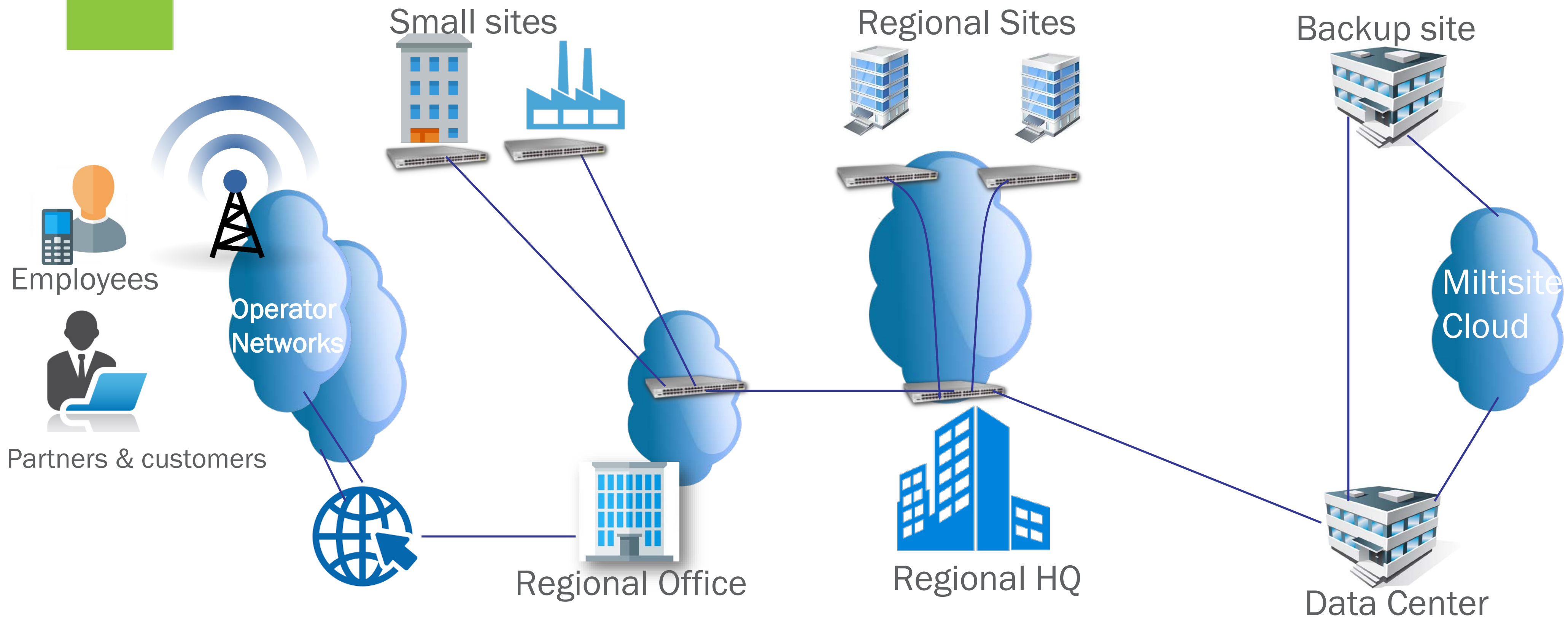
Xhaul Requirements

Performance/Feature Requirements

Provisioning & Virtualization requirements

Mobile Edge Computing

MBH Aggregation

EPC

C-RAN
Front Haul
CPRI
CPRI Switch
RRH

IP Core

Core Networks

MPLS Core

Fixed Line Access

G.fast

PON

VDSL

GigE

RFoG

Latency & Physical Requirements

Physical Requirements
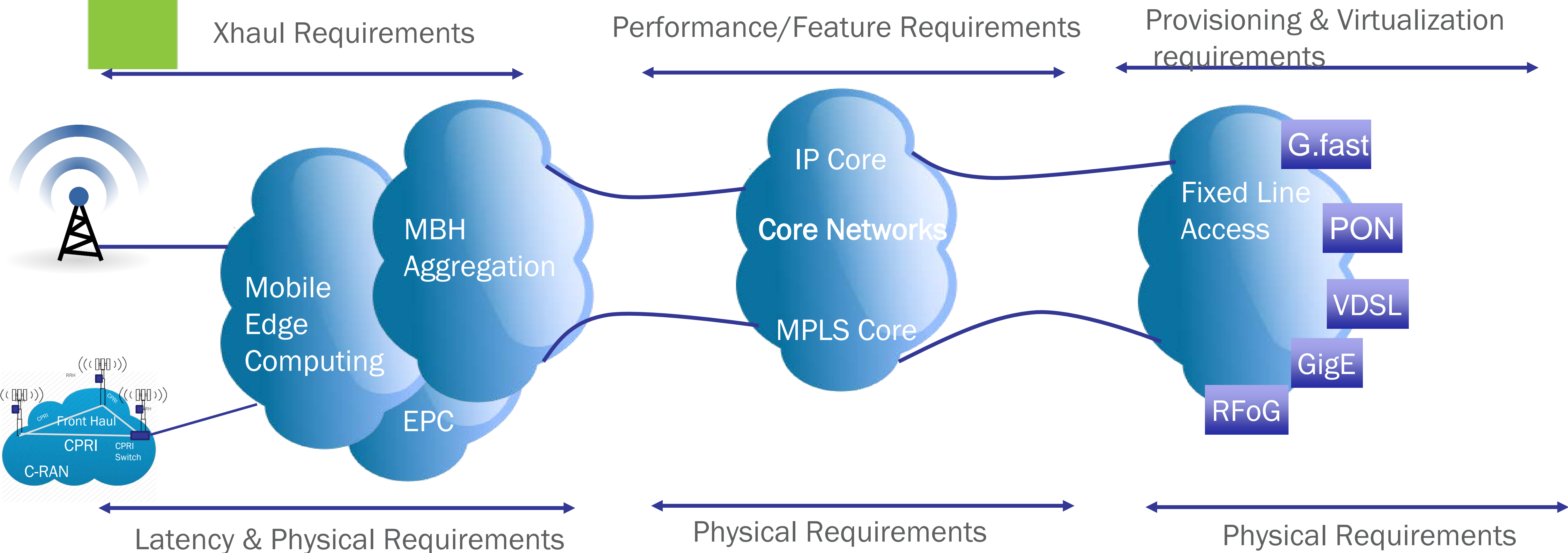
Physical Requirements

Whitebox and DC Networks: Standardization Needs

Core/Super Spine
Spine
TOR

400GbE Super-spine
100GbE Spine

DCI
Milt-site Cloud
WAN

Compute Cluster
Storage Cluster
Machine Learning Cluster

Universal I/O Connect??

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Thank You