Technology Breakout Session: 5G

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Japan Innovation Day 23rd May 2019 DHL Customer Solutions and Innovation

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•	Welcoming address	Andrew Hudson	Vice President CSI Technology AP
•	Vodafone video introduction to 5G		
•	Cisco Japan Presentation	Kazuki Tsutsumi	Senior Systems Engineer Cisco Japan
•	DHL Supply Chain White Paper	Swati Wig Deepali Gulati	Vice President, Partner, DHL Consulting AP Vice President DHL Supply Chain AP

Interactive Discussion



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cisco

Leading 5G Network Innovation

May 23rd 2019 Kazuki Tsutsumi Senior Systems Engineer Enterprise Solution Architects

Personal Computers



Mobile devices and the Cloud

Cisco Always leading network innovation



Cisco always leading network innovation



5G is Coming 20205

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5 **Enabled** Transformatio

Evolution of Mobile Networks





In 2020s, Growing Mobile Network Zetta byte of traffic every year 56% of all mobile data traffic generated in Asia Pacific 22GB/month data from 5G connections Approx. x 4 compared to 4G

Source: Cisco VNI Global Mobile Data Traffic Forecast, 2017–2022

Approaching the Mobile Zettabyte Era By 2022, annual global mobile data will reach the zettabyte milestone

By 2022, global mobile data traffic will reach an annual run rate of 930 exabytes per year

930 exabytes is equal to:

Nearly 113X more than mobile traffic generated in 2012 (8.2 exabytes)

All movies ever made crossing global mobile networks every 5 minutes

What is a zettabyte?

One trillion gigabytes Approximately 10²¹ (1,000,000,000,000,000,000,000 bytes)



Source: Cisco VNI Global Mobile Data Traffic Forecast, 2017-2022



New possibilities offered by 5G





56 Drives Enterprise Digital Transformation



Further growth of Wi-Fi hotspots

Existing	Growth	Future
 Pay-as-you-go Free access promoting other services (Retail free Wi-Fi) Managed services (venues and outdoor) Cellular offload (user promoted) Added value for broadband subscription Advertising & sponsorship 	 Cellular offload (carrier driven) Community Wi-Fi/ homespots Carrier-grade VoWiFi TV everywhere Large events Big data analytics Public transportation Wi-Fi 	 Wi-Fi Capacity trading Transaction platform Internet of things Context awareness HetNet Wi-Fi + mobile Connected car (in-car Wi-Fi)
Total Public Wireless LAN + Community Hotspots	2017 2022 124 M 549 M	Total Incremental Hotspots

Source: Maravedis, Cisco VNI Global IP Traffic Forecast, 2017–2022

Wi-Fi complements **5G**

59% of mobile traffic offloaded to Wi-Fi by 2022



Source: Cisco VNI Global Mobile Data Traffic Forecast, 2017–2022

What it takes to maximize value of 5G



Federated Policy Management with Multi Access



Federated Policy Management and Security

5G and the Beyond

Automate and simplify your network Federated policy management Security architecture renovations 

HOW IS 5G SHAKING UP THE LOGISTICS INDUSTRY?

Japan Innovation Event

Deepali Gulati, Vice President, Technology, DHL Supply Chain Swati Wig, Vice President, Head of DHL Consulting Asia Pacific

Agenda

1 Two terminologies – big potential

- 2 The 5G Supply Chain
- 3 The 5G technology for a smart Supply Chain



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The bi-polar potential of 5G in Supply Chain Management





How the bi-polar potential of 5G works Example: truck driver shortage + truck platooning





If you don't do this exercise, you might fail

If you don't plan your Supply Chain properly, your product deployment will fail



If you don't create a value for the user, then the product is irrelevant



Make your Supply Chain ready for the 5G deployment!

Translate 5G use cases into viable business cases!



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Building a smart Supply Chain for 5G roll-outs – Framework



Comments

- Changing customer demands, e.g. growing number of enterprise customers with even higher service requirements
- Different maturity levels by country, e.g. first movers are Australia, Japan, South Korea, the UK and the USA
- Changing products, i.e. small cells (Low-powered cellular radio access nodes with a range of 10 meters), macro cells (provider of radio coverage through a high power cell site), fibre (enabler for seamlessly stream bandwidth-intensive applications and support of wireless densification and broadband)



Segmented Supply Chain

The "One Size Fits All" Strategy



The Segmented Strategy





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Innovation and Digitalization DHL Trend Radar – relevance of 5G





Innovation and Digitalization Potential 5G use case in logistics (selection)



- Smart and connected cars
- Autonomous and coordinated driving • through vehicle-to-vehicle or vehicleto-infrastructure communication

Drones for yard surveillance and cycle

Connected drones and remote drone

Smart

Warehouse

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control through 5G

counting

Innovation and Digitalization Disrupting the way we operate our Supply Chains – relevance of 5G



Building a smart Supply Chain for 5G roll-outs – 9 things to consider





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The future





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Realizing the Potential of 5G in Supply Chain So what does all of this look like in the future?





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Questions and Answers



Thank you for your attendance