TINGENES INTERNET

BRUKSOMRÅDER & VERDIKJEDE

Ida Elisabeth Sørlie
Young Professional, Industry & Society

ERICSSON

THE NETWORKED SOCIETY

M2M

CONNECTED DEVICES

IN 2021

28 BILLION

Source: Ericsson Mobility Report, June 2016

13 BILLION
MOBILE PHONES, PC'S, LAPTOPS, TABLETS

15 BILLION
IoT DEVICES

$1.9T
**Predicted Value-Add IoT
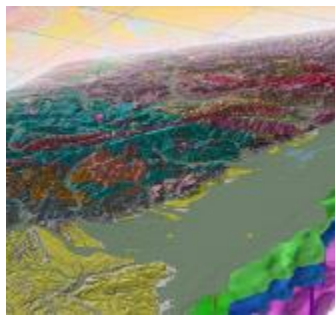Across Sectors By 2020**

TYPICAL IOT USE CASES TODAY

MASSIVE MONITORING

ASSET MANAGEMENT AND TRACKING

REMOTE OPERATIONS AND ROBOTS

INFRASTRUCTURE MONITOR AND CONTROL

IOT VALUE DRIVERS & CUSTOMER NEEDS

New Growth & Revenue Streams

Customer Experience & Intimacy
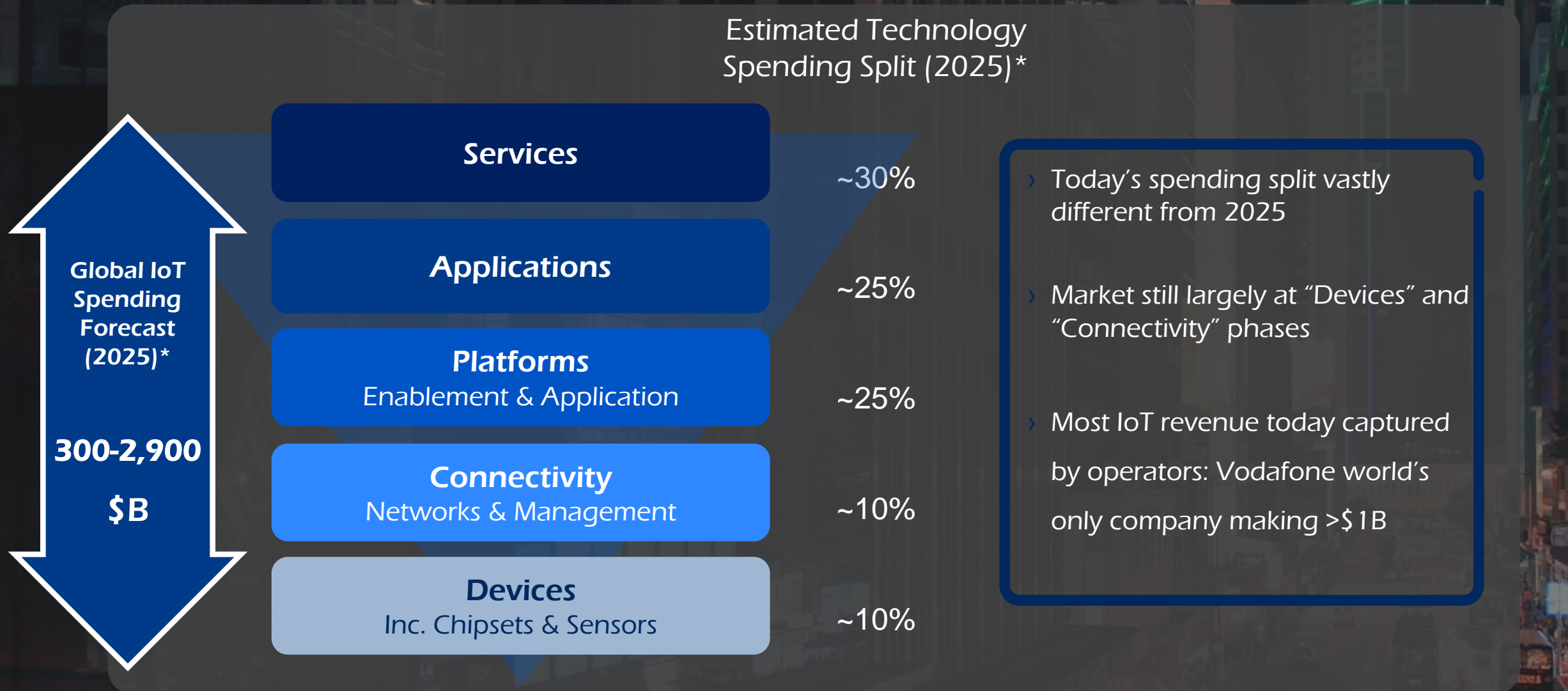
Relevance & Competitiveness

Operational Efficiency

Sustainability & Regulations

Innovation & Collaboration

IOT VALUE CHAIN QUANTIFIED

Estimated Technology
Spending Split (2025)*

Global IoT Spending Forecast (2025)*

300-2,900 $B

Layer	Split
Services	~30%
Applications	~25%
Platforms Enablement & Application	~25%
Connectivity Networks & Management	~10%
Devices Inc. Chipsets & Sensors	~10%

› Today's spending split vastly different from 2025

› Market still largely at "Devices" and "Connectivity" phases

› Most IoT revenue today captured by operators: Vodafone world's only company making >$1B

* Source: Various inc McKinsey, AT Kearny, Heavy Reading, IDC, Machina, etc
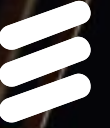
ERICSSON IOT FOR VERTICALS

Utilities

- › Deregulation & competition
- › Introduction of renewables
- › Aging infrastructure
- › Theft prevention

Transport

AUTO   SHIPPING   ITS

- › Fuel efficiency & sustainability
- › Passenger safety & crew welfare
- › Capacity management
- › Autonomy & electrification

Public Safety

- › Cross-agency collaboration
- › Changing threat landscape
- › Actionable intelligence
- › Public sector overhaul

ERICSSON INDUSTRY SOLUTIONS

Utilities

- Smart Metering
- Grid Control
- Smart Grid Communications
- Customer & Revenue Management
- Asset & Critical Infrastructure Management

Public Safety

- Disaster & Emergency Management
- First Responder Networks
- Strategic Government Networks
- Border & Area Security

Transport

AUTO
- Connected Vehicle Cloud
- Connectivity Management
- Automotive Business Creation

SHIPPING
- Maritime Cloud
- Crew Welfare Communication
- Cargo Data Management
- Bunker (Fuel) Efficiency

ITS
- Traffic Management
- Transport Transactions
- ICT Infrastructure for Road & Rail

VOYAGE OPTIMIZATION SOLUTION

Result: Customer Saved $15 Million Annually

CONNECTED VESSEL

Operational Efficiency

MAERSK

REDUCED FUEL CONSUMPTION

[Maersk Line, Denmark]

THE CHALLENGE

› Reduction in fuel consumption

› Stabilized speed

› Change management of fleet management

Change management

THE SOLUTION

› Accurate data on vessel position, course and speed in real time

› Visualized on dash boards for enhanced decision support

› Delivered as a Service

Real time data

THE RESULT

› Reduced fuel costs

› Improved accuracy

› Advice and decision support from remote central voyage center

15 M$ annual savings

DIVERSE IOT USE CASE NEEDS

MASSIVE IOT

SMART BUILDING

LOGISTICS, TRACKING AND FLEET MANAGEMENT

SMART METER

SMART AGRICULTURE

CAPILLARY NETWORKS

CRITICAL IOT

AUTONOMOUS CAR

TRAFFIC SAFETY & CONTROL

INDUSTRIAL APPLICATION & CONTROL

REMOTE MANUFACTURING, TRAINING, SURGERY

LOW COST, LOW ENERGY
SMALL DATA VOLUMES
MASSIVE NUMBERS

ULTRA RELIABLE
VERY LOW LATENCY
VERY HIGH AVAILABILITY

5G
USE CASES

BROADBAND EXPERIENCE
EVERYWHERE, ANYTIME

SMART VEHICLES,
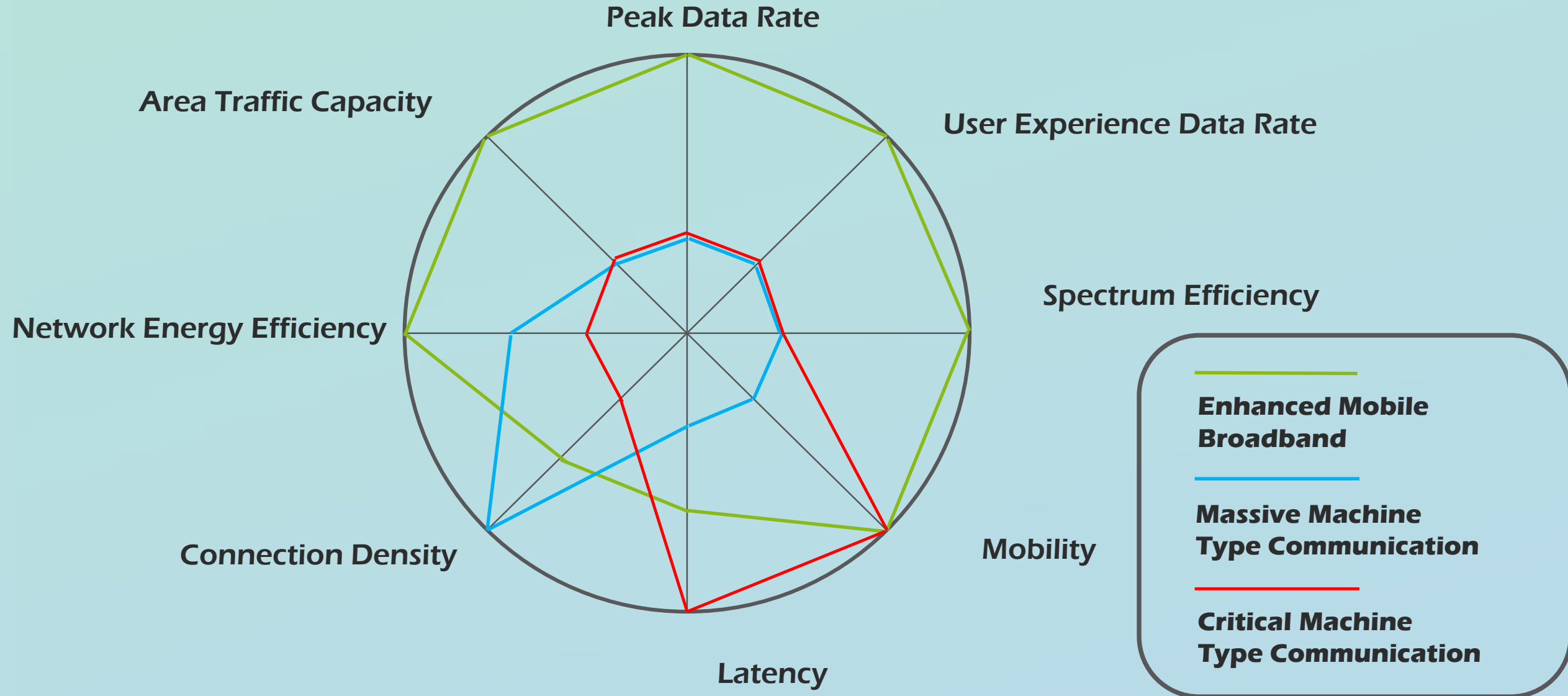TRANSPORT & INFRASTRUCTURE

MEDIA
EVERYWHERE

CRITICAL CONTROL
OF REMOTE DEVICES

INTERACTION
HUMAN-IOT

RANGE OF IOT REQUIREMENTS

Peak Data Rate

User Experience Data Rate

Area Traffic Capacity

Spectrum Efficiency

Network Energy Efficiency

Mobility

Connection Density

Latency

Enhanced Mobile Broadband

Massive Machine Type Communication

Critical Machine Type Communication

Remote Control over Mobile Network

EXCAVATION SITE | BARCELONA, SPAIN

5G EXCAVATOR
MWC 2015

Source: METIS

TECHNOLOGY FOR GOOD: SUSTAINABILITY
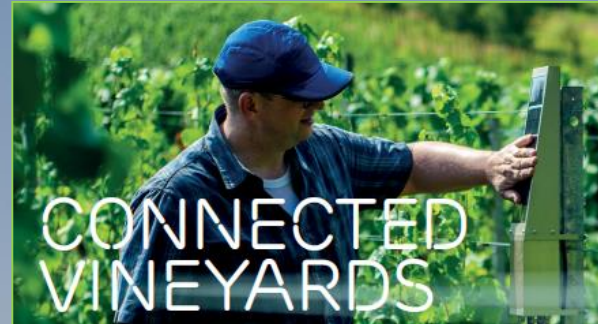
CONNECTED MANGROVES

CONNECTED VINEYARDS

CHATTAHOOCHEE RIVERKEEPER®
Keeping Watch Over Our Waters
CONNECTED WATER

GMM MICROWEATHER

ZERO SITES

JOHN DEERE

CONNECTED VEHICLE CLOUD

Sensus Connect launch (US/CHN)

Connected Safety (RFI)

...

Connected Car

Connected Biker (POC)

Autonomous Driving (AD)

Sensus Cloud
Powered by Ericsson

2013

2014

2015

2015

2016

2017-

EVOLUTION OF CAR & DRIVER NEEDS

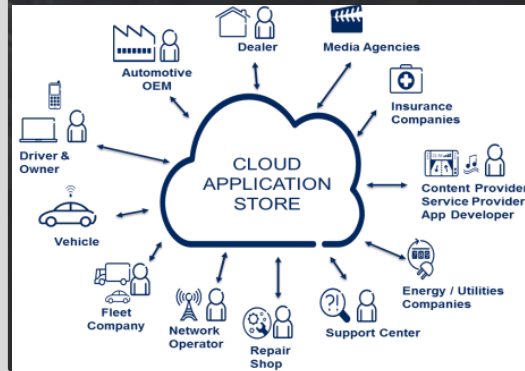
M2M

DEVICE DRIVEN

Telematics 1.0

ECOSYSTEM

CLOUD APPLICATION STORE

BUSINESS DRIVEN

Connected Car

NETWORKED SOCIETY

INNOVATION DRIVEN

'ROAM DELIVERY' SERVICE DEMONSTRATED BY VOLVO

Connected Marketplace

IOT IS A JOURNEY TO A DYNAMIC ECOSYSTEM

Collaboration

+ Partners, Channels, Customers

| Ecosystem of Things | Connect & Collect | Operational Optimization | Unlocking Enterprise or Public Value | Ecosystem Evolution |

Ops Data

Correlated Data

Internal Data

External 3rd Party Data

Data Integration Plane
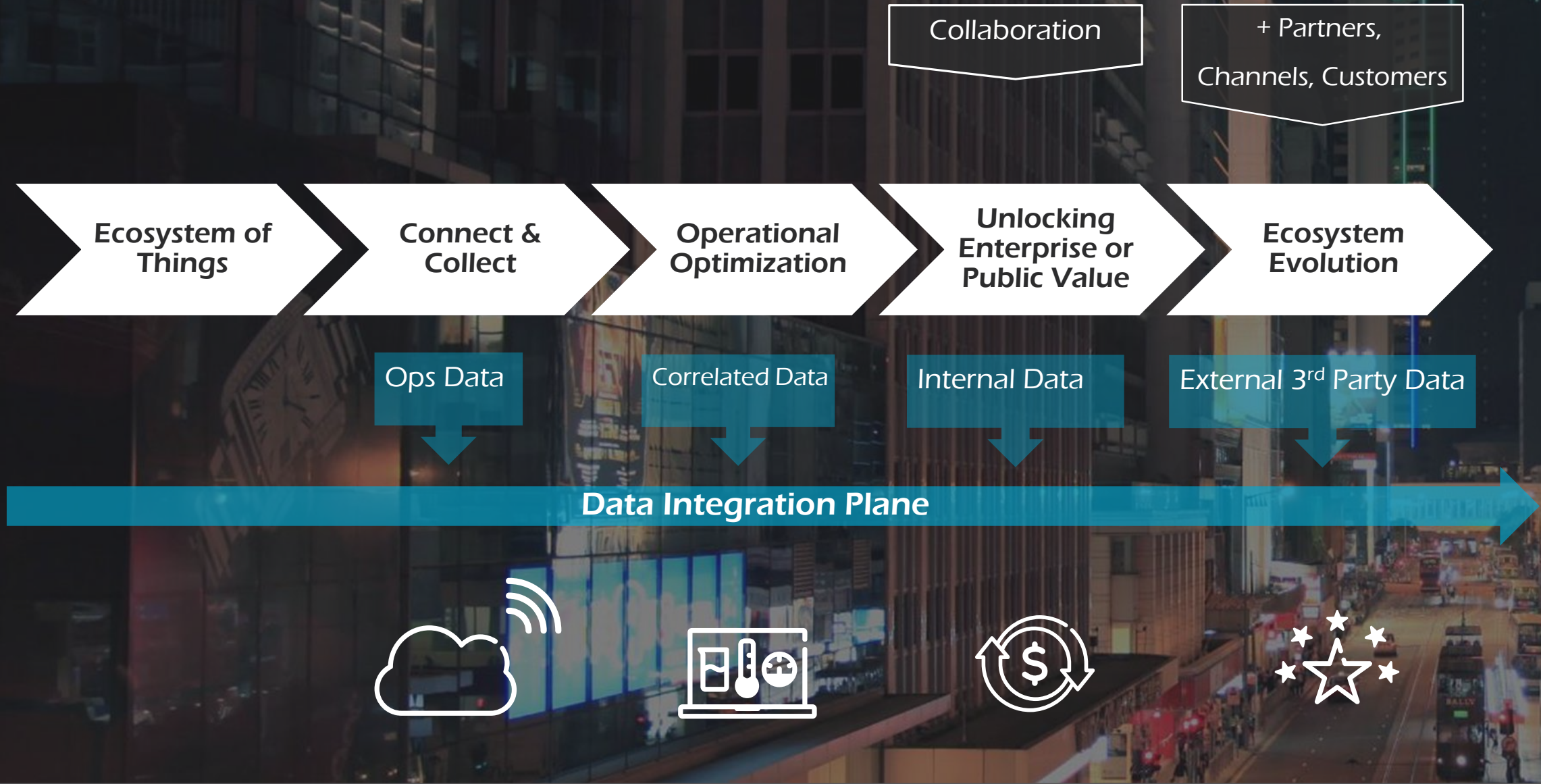
WHERE ARE WE HEADED?

**DOMAINS OF VALUE
CAPTURE IN
THE INDUSTRY**

PHASE 3

PHASE 2

PHASE 1

CONNECTIVITY	SOFTWARE	EXTENDING ECOSYSTEM
SENSORS	ANALYTICS	NEW PARTNERSHIPS
DEVICES	PLATFORMS	NEW BUSINESS MODELS
INFRASTRUCTURE	SECURITY	I.E.: OUTCOME-BASED

Source: McKinsey
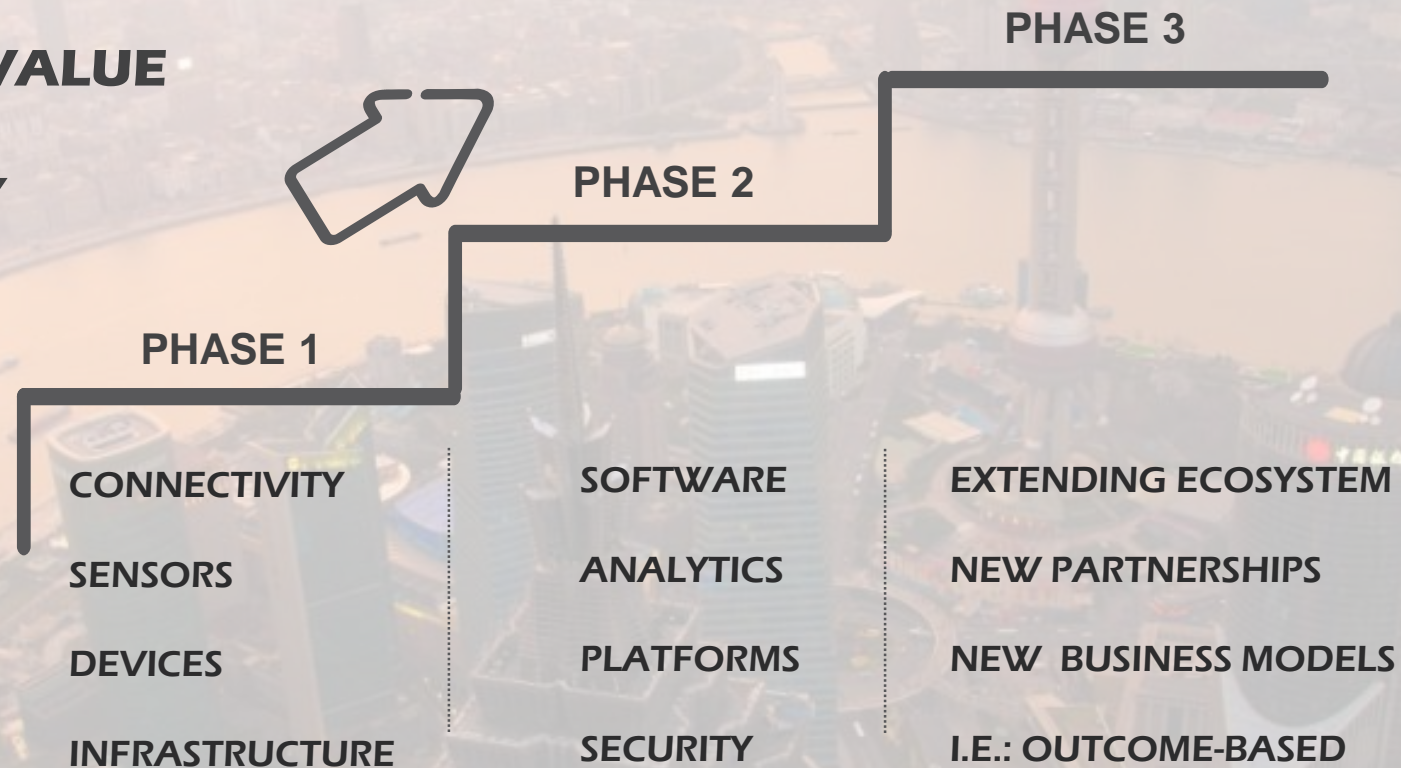
TRANSFORMING BUSINESS LOGICS

INDUSTRIAL AGE LOGICS

- Value Chains
- Products & Services
- Transactional Business Models
- Vertical Silos
- In-House Innovation
- Customer Solutions
- Transactional Partnerships
- Scale With Assets

NETWORKED SOCIETY LOGIC

- Ecosystem
- Value Proposition
- Output-Based Business Models
- Cross-industry Collaboration
- Collaborative Innovation
- Customer Value-(Co)creation
- Strategic Partnerships
- Scale With Scope & Speed

ILLUSTRATING THE NETWORKED SOCIETY

Lapka PEM
Personal environment monitor reveals an invisible world.

K-farmers
Mobile service brings transparency to food production.

Maersk Line
Connectivity optimizes the efficiency of cargo shipping fleet.

Remote Schooling Bhutan
Online project connects students across the country.

CuteCircuit
The intersection of fashion, wearable tech and communication.

Misfit Wearables
Device helps you to live an active life.

People of Delivery
Taking food delivery to the next level.

Adidas miCoach Smart Ball
A coach inside a football.

Zero Site
Smart collaboration improves street lighting and network coverage.

Boliden 'Aitik' Mine
Connectivity enables remote management from a single dispatch.

Volvo Connected Car
Cars deliver more than transportation.

RunKeeper
App functions as a personal running coach.

Wonder Workshop
Toy robots help children to learn programming.

Spotify
Music streaming service revolutionizes the industry.

Antenna Integrated Radio
Providing network coverage for the next billion subscribers.

The Bay Lights
The evolving landscape of art with connectivity.

Verbling
Web platform pairs native speakers with language learners.

Emojis in Real Life
Self-expression in the Networked Society.

MC10 + Reebok: CHECKLIGHT
Making contact sports safer with monitoring devices.

Norwegian Polar Institute
Device helps researchers track polar bears more accurately.

OCEARCH
Connectivity helps to protect endangered sharks through education

DIY.org
An online community encouraging kids to play and develop their skills.

Nepal Wireless Networking Project
Bringing the benefits of connectivity to the rural villages of Nepal.

DreamHack Open Bucharest
Connecting the global community of online gaming.

Saroo Reconnection
A family is reunited using interactive satellite imagery.

Remote Flight Services
Controlling several airports from a single location.

Coronary Intervention Center
Hospital uses video calling to improve quality of treatment.

Rainforest Connection
Using existing mobile infrastructure to monitor and protect rainforests.

Igarapé Institute
Safer police enforcement on the streets of Rio de Janeiro.

Firefighter app
Firefighting application helps to save lives.

Avicii X You
DJ asks fans to collaborate on a his next hit single.

iKure Techsoft
Technology brings remote healthcare to rural India.

EyeNetra
A smartphone add-on that can test eyesight.

Airbnb
Online platform opens new ways to live like a local.

Copenhagen Wheel
Transforming any bicycle into a smart hybrid.

MC10 BioStamp
Tiny device monitors the health of patients.

BovControl
App helps ranchers to monitor their herd.

M-Commerce in Uganda
Banks and telecoms collaborate to increase financial inclusion.

Instagram Foodie Ida Frosk
Networked Society helps to turn passion into profession.

Children's Memorial Hermann Hospital
Children's hospital provides virtual zoo visits for patients.

Athos
Wearable technology helps users reach their fitness goals.

TELE Greenland
Connecting the most remote communities of Greenland.

@tunameltsmyheart
Abandoned dog becomes an unlikely internet celebrity.

Findery
Community helps people share and discover the world around them.

SoundCloud
Platform transforms how sounds are shared.