Computech

The Digital Transformation Imperative
Perspectives from an Entrepreneur

Jean Arnell
Managing Partner
Computech

Computech

Computech is specialized in Strategy Consulting, Technology Services and Outsourcing based on the latest Industry technologies.

Our service offering is modeled after the typical IT decision cycle: Plan & Design, Develop & Implement and Support.

STRATEGY CONSULTING
Computech brings deep functional, technical, architectural expertise to assess the current state and formulate a tailored technology roadmap to deliver on business objectives.

BUSINESS APPLICATIONS

Citizen Relationship Management

Data and Analytics

Social Services and Outreach

Tax and Financial Management

IT INFRASTRUCTURE

Cyber security

Datacenter Transformation

Unified Communication and Collaboration

OUTSOURCING

Datacenter Services

Desktop Support

IT Infrastructure Management

Computech

Technology partners

Computech brings the best in strategy and technology to unlock more value from your IT investments and maximize business results.

Microsoft · DELL EMC · FORTINET · Hewlett Packard Enterprise · Mitel Powering connections · Schneider Electric

We bring together industry leaders on Digital Transformation solutions.

Microsoft Certified Partner for 20 straight years.

Our complementary talents and long-standing relationships with industry leaders create synergies that drive the exceptional results we realize together.

Customer references
Public and private sector

Since our inception in 2000, Computech has been enabling Businesses and Governments in the Caribbean to align their business objectives with their technology investments by designing and developing scalable and secure information systems based on the latest industry technologies.

Computech
Technology Center

Strategy Briefing
Strategy briefings are one-day technology briefings which start by examining customers' current IT environment and business objectives. Then it moves into expert presentations, demos and scenarios customized to meet customers' needs.

Architecture & Design session
Architecture design session focuses on business objectives, aligns them with specific products/technologies and provides architectural guidance.

Training
Our training sessions provide end users and IT professionals with the knowledge and skills needed to develop and administer their target environments.

Datacenter
Our datacenter services offering are a set of Hosted Private Cloud solutions - Infrastructure as a Service and Software as a Service based on Microsoft Hyper V and vmware vCenter.
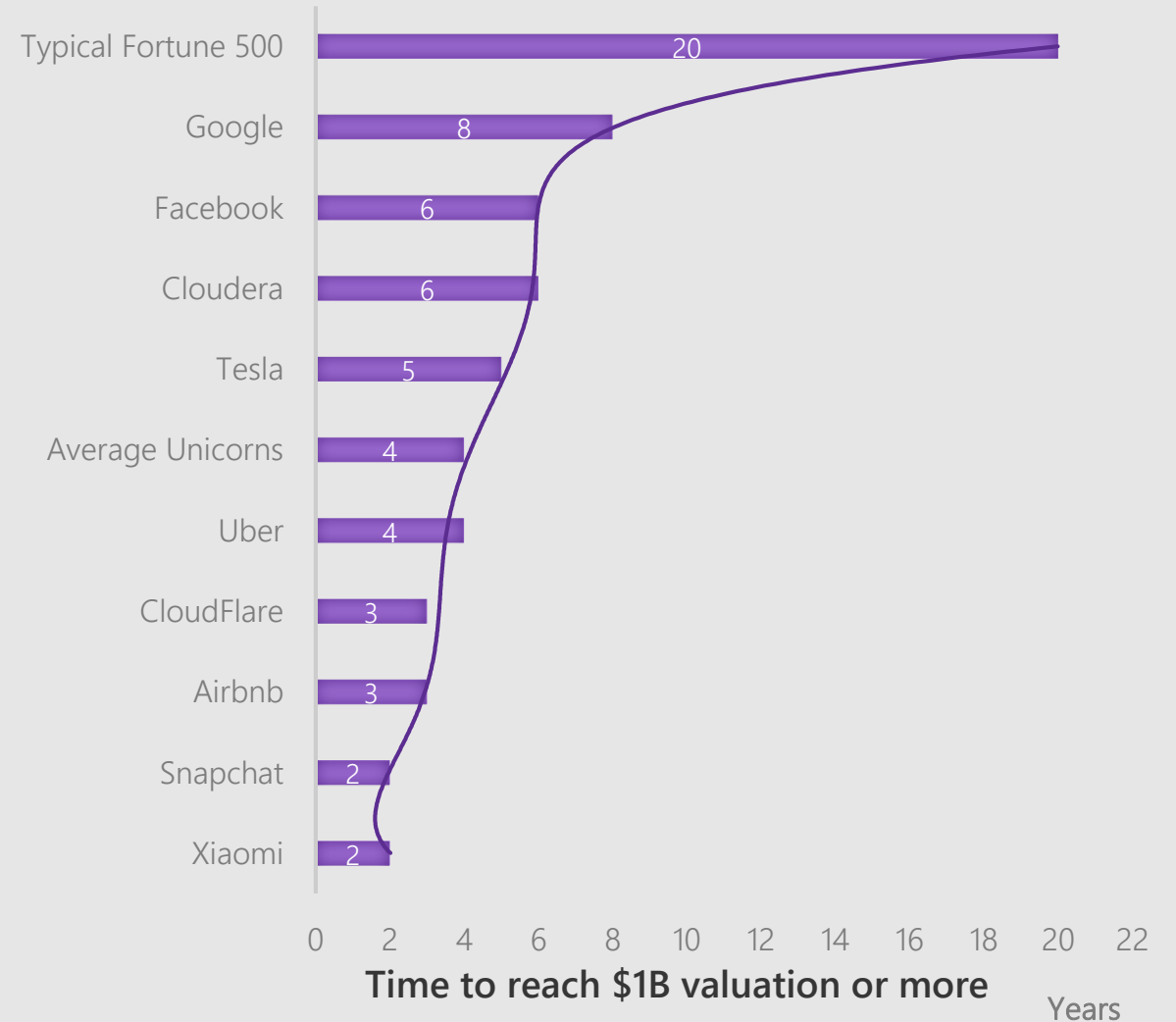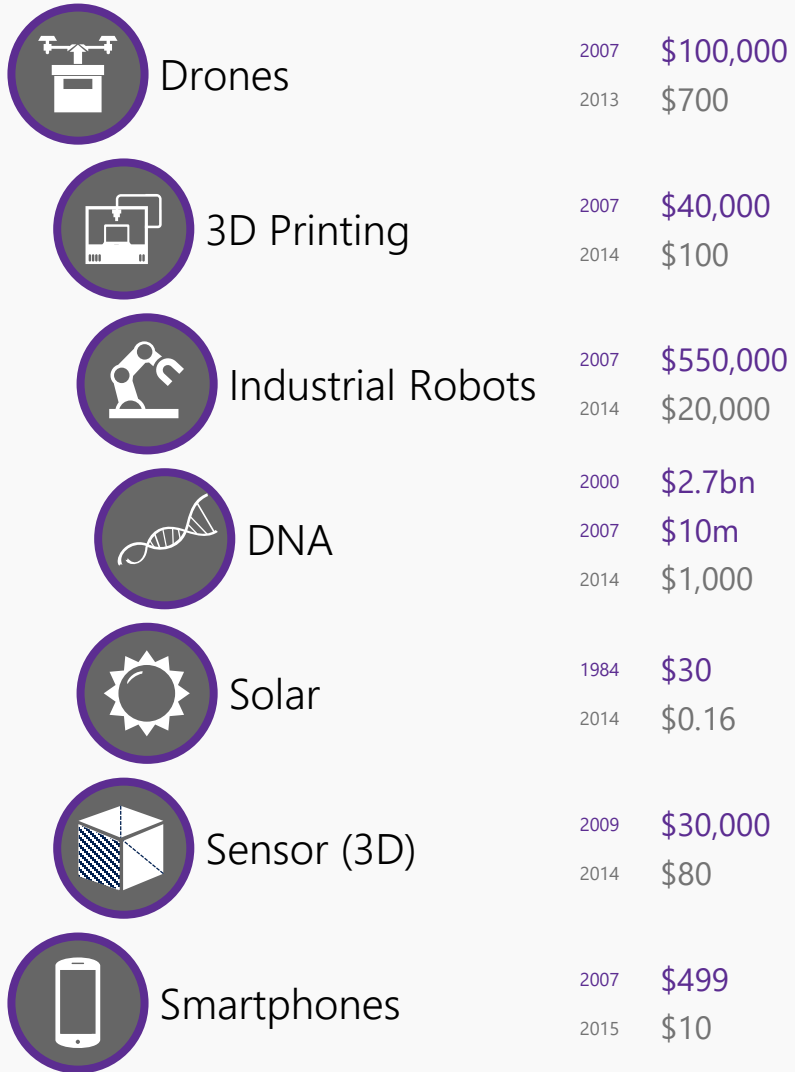
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Video: Intelligent agriculture

THE WORLD
HAS CHANGED

Astonishing Pace of Change

Drones
2007	$100,000
2013	$700

3D Printing
2007	$40,000
2014	$100

Industrial Robots
2007	$550,000
2014	$20,000

DNA
2000	$2.7bn
2007	$10m
2014	$1,000

Solar
1984	$30
2014	$0.16

Sensor (3D)
2009	$30,000
2014	$80

Smartphones
2007	$499
2015	$10

The cost of key technologies has fallen rapidly

Time to reach $1B valuation or more

Company	Years
Typical Fortune 500	20
Google	8
Facebook	6
Cloudera	6
Tesla	5
Average Unicorns	4
Uber	4
CloudFlare	3
Airbnb	3
Snapchat	2
Xiaomi	2

0 2 4 6 8 10 12 14 16 18 20 22

Years

Source: World Economic Forum

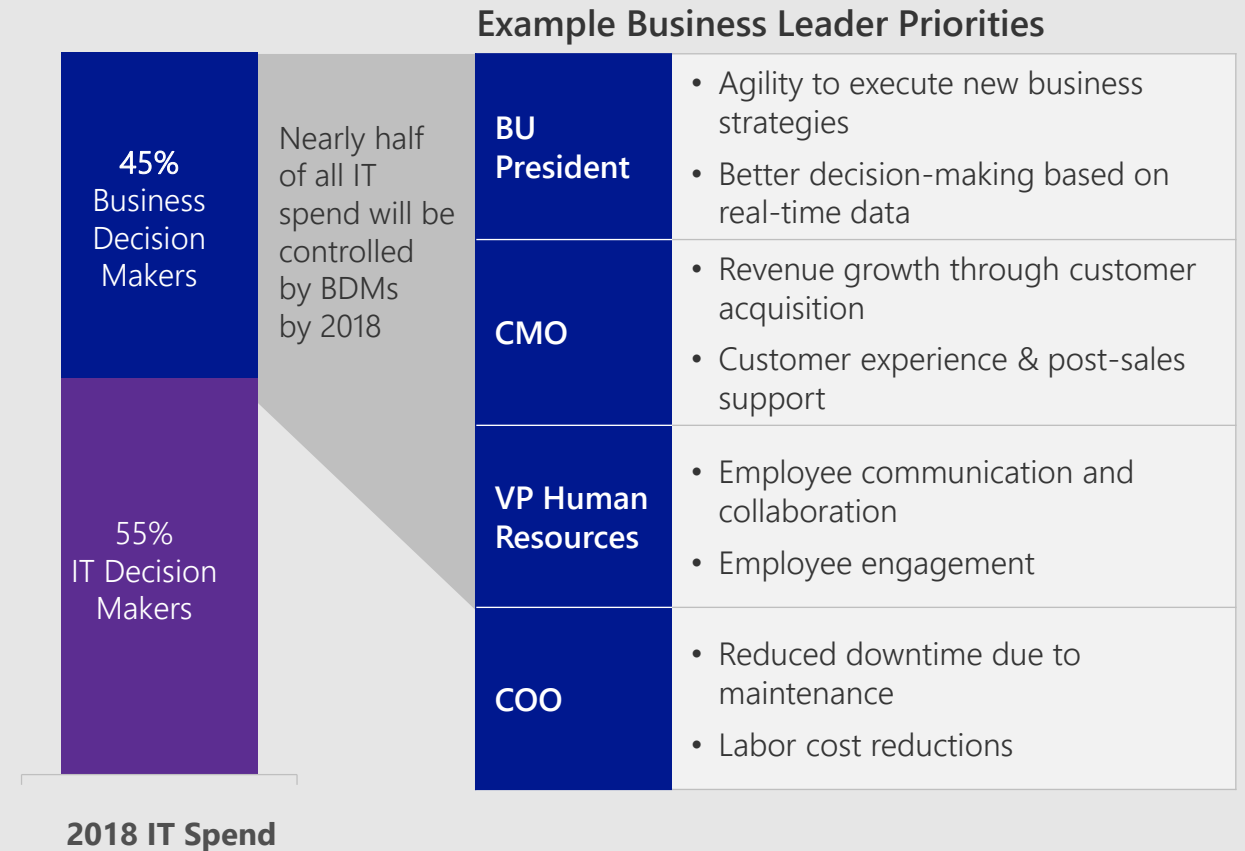# 86% of CEOs consider Digital their #1 priority

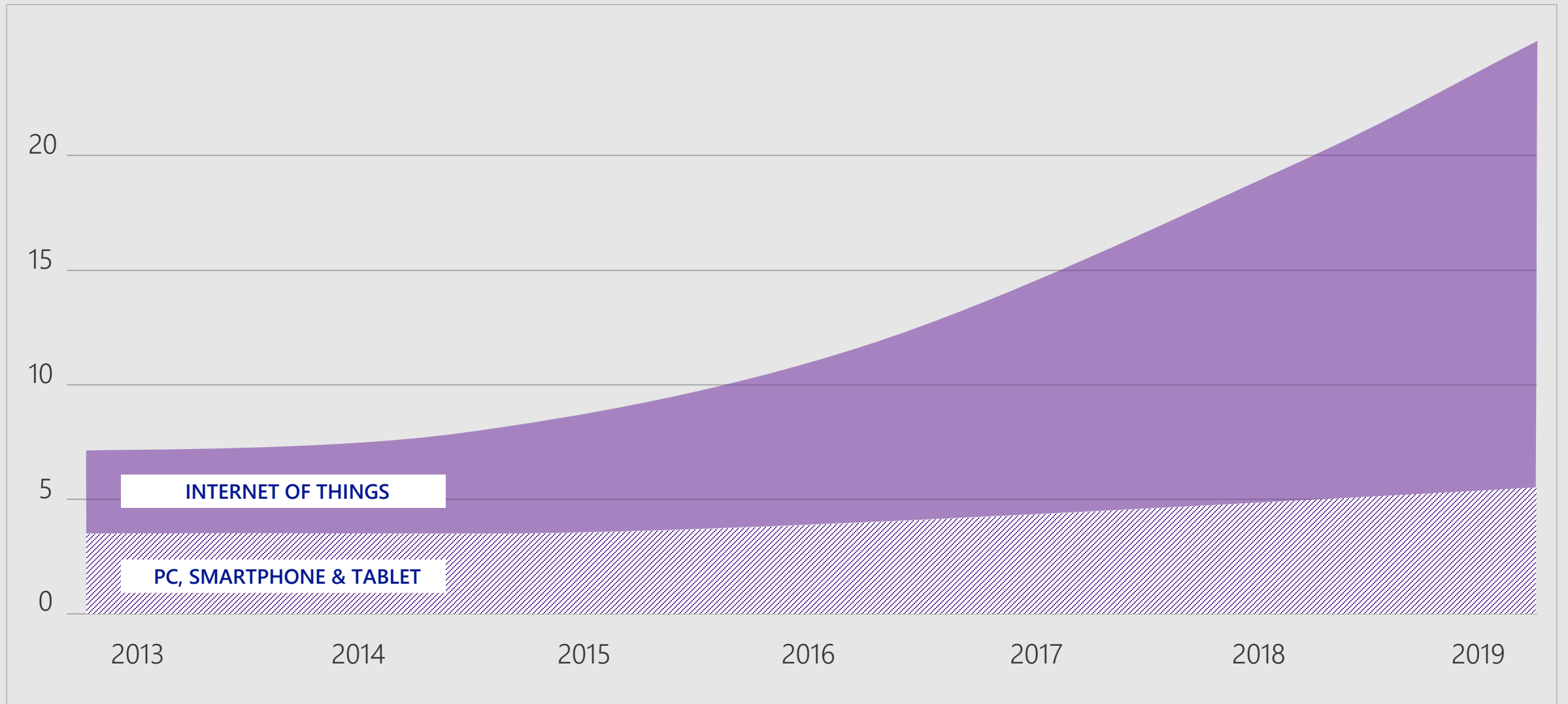## CEOs believe technology will transform their business more than any other global trend

Technological advances
Demographic shifts
Shift in global economic power
Resource scarcity & climate change
Urbanization

Trends that will transform business, next five years (%)

28
86
39
58
69

BDMs are becoming the real buyers of Digital

Example Business Leader Priorities

45% Business Decision Makers

Nearly half of all IT spend will be controlled by BDMs by 2018

55% IT Decision Makers

2018 IT Spend

Role	Priorities
BU President	• Agility to execute new business strategies • Better decision-making based on real-time data
CMO	• Revenue growth through customer acquisition • Customer experience & post-sales support
VP Human Resources	• Employee communication and collaboration • Employee engagement
COO	• Reduced downtime due to maintenance • Labor cost reductions
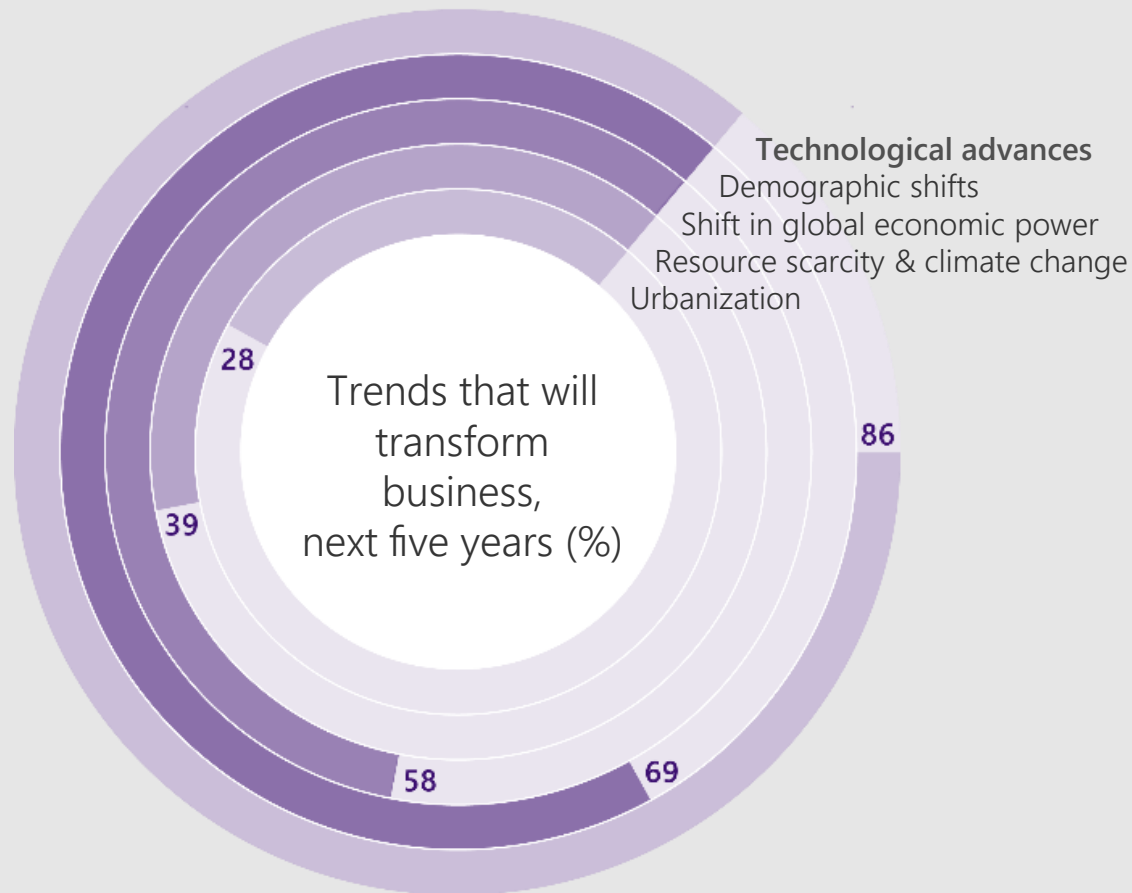
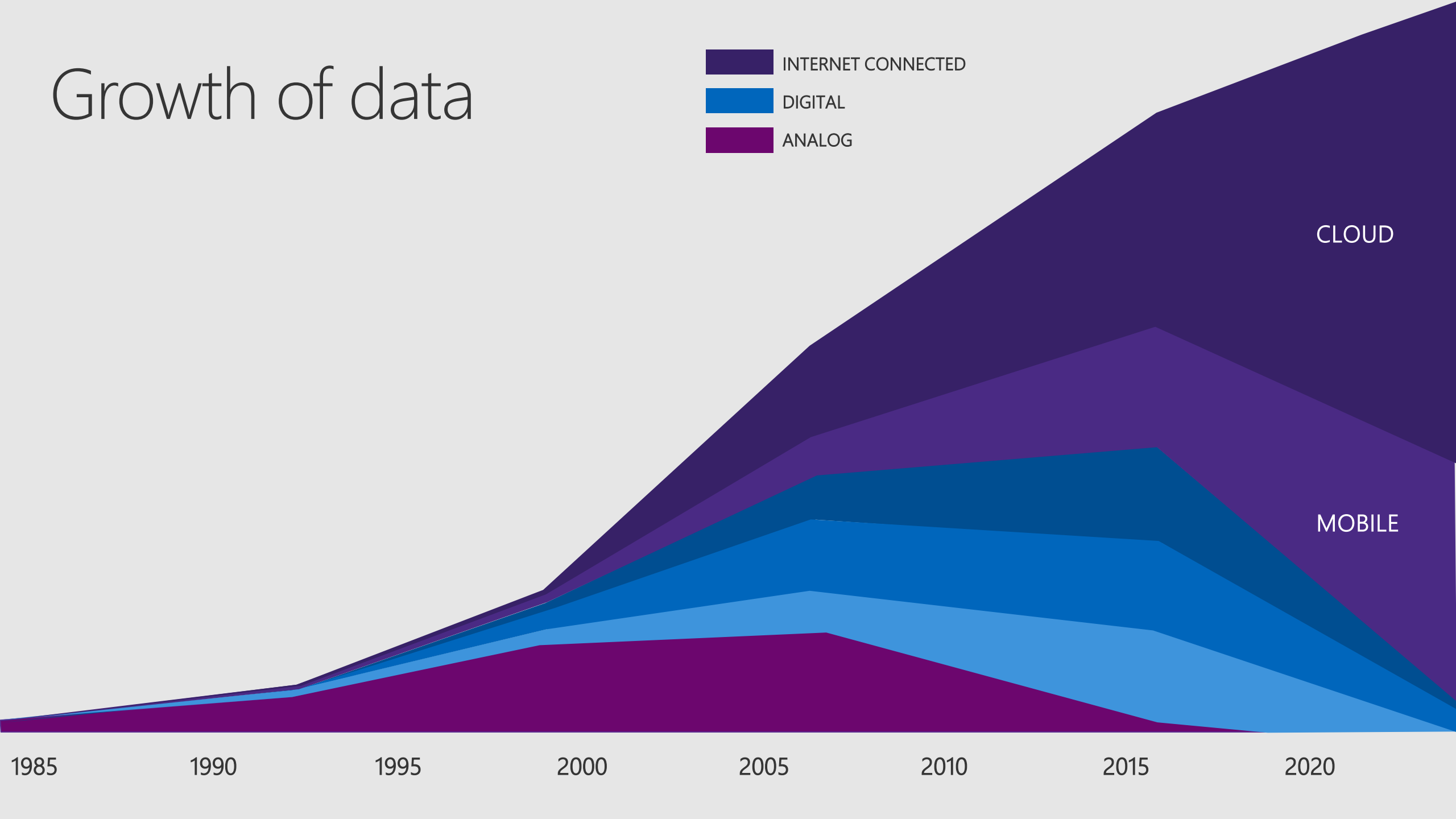# Growth of connected devices
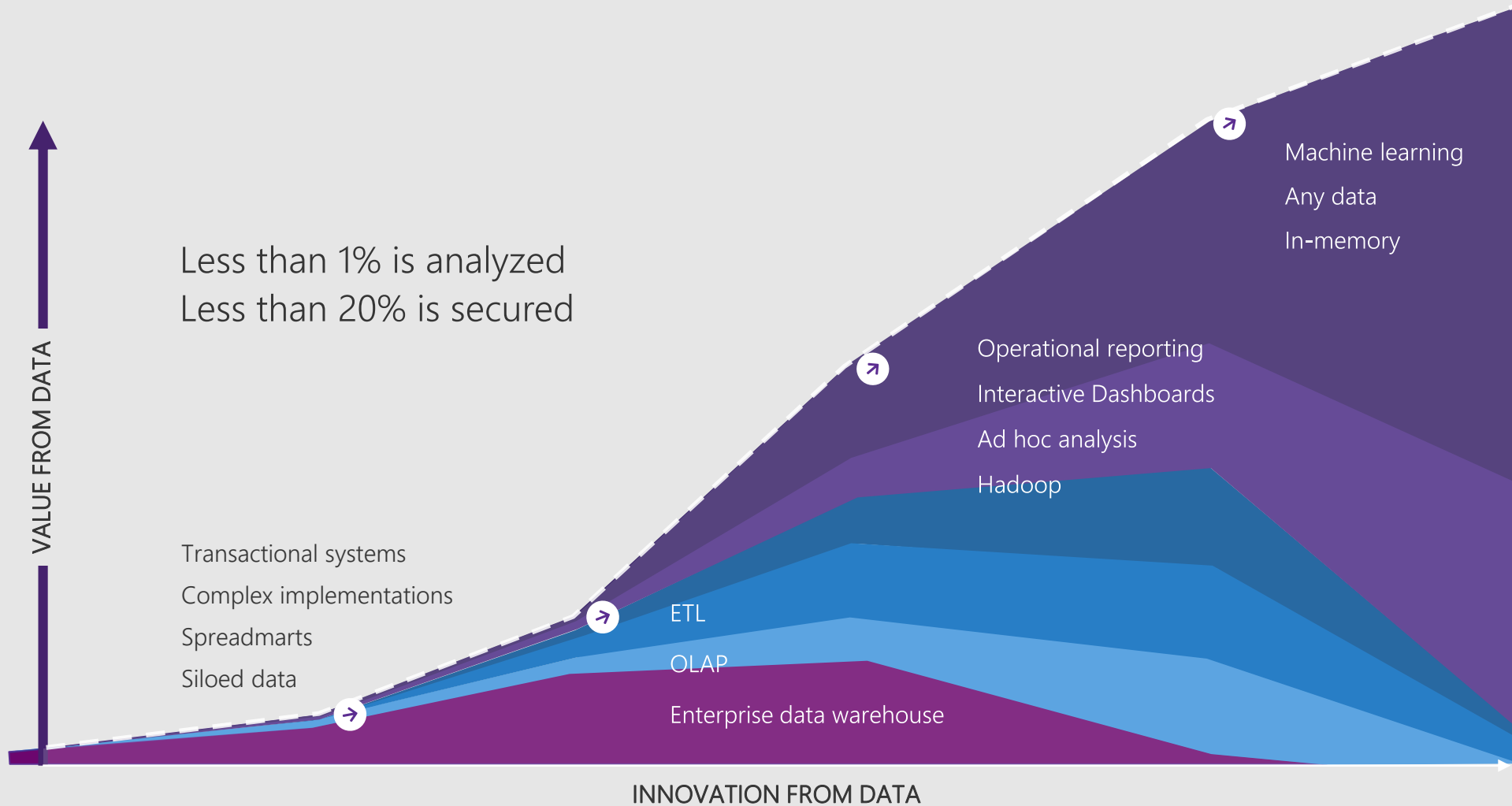

Scale 1:1 Billion Units

Growth of data

INTERNET CONNECTED
DIGITAL
ANALOG

CLOUD

MOBILE

1985   1990   1995   2000   2005   2010   2015   2020

Technology disruptions

VALUE FROM DATA

Less than 1% is analyzed
Less than 20% is secured

Transactional systems
Complex implementations
Spreadmarts
Siloed data

ETL
OLAP
Enterprise data warehouse

Operational reporting
Interactive Dashboards
Ad hoc analysis
Hadoop

Machine learning
Any data
In-memory

INNOVATION FROM DATA

New workloads, new business models
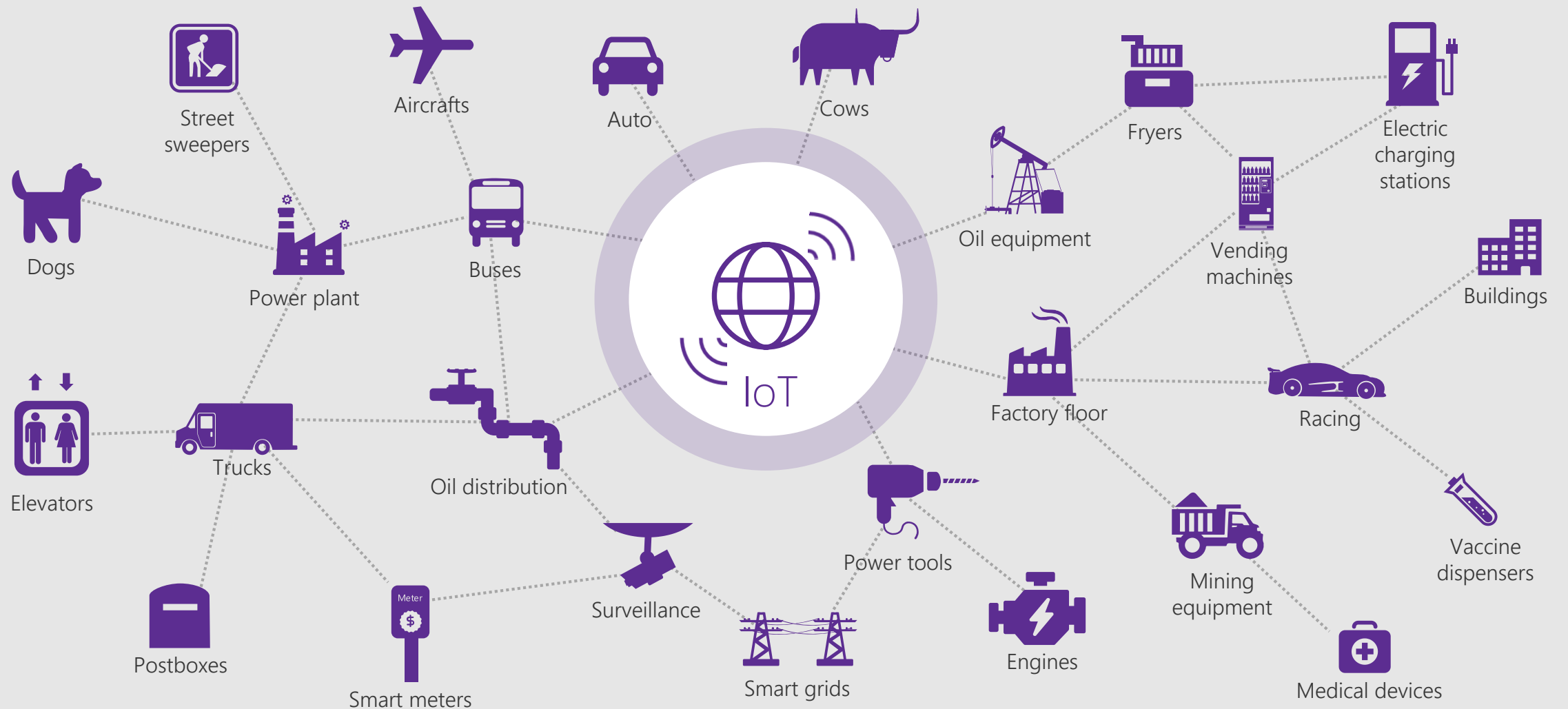
Intelligent agriculture = Precision agriculture
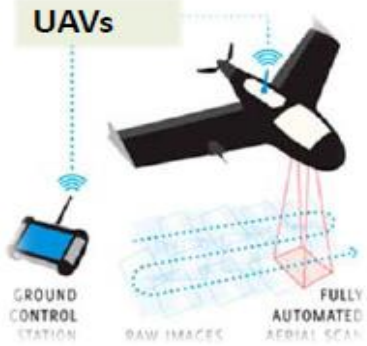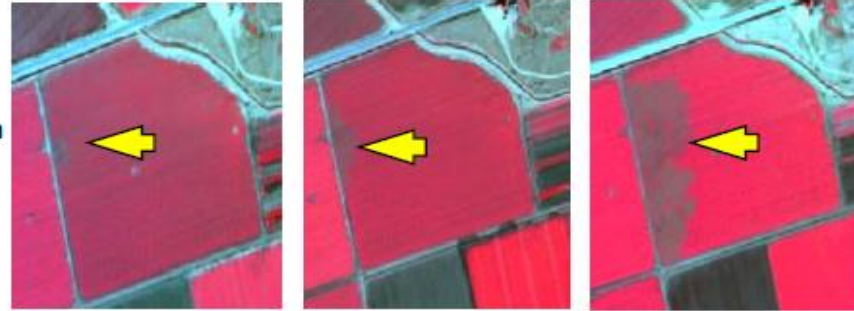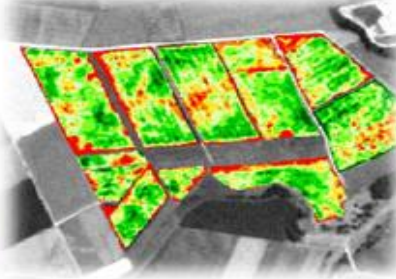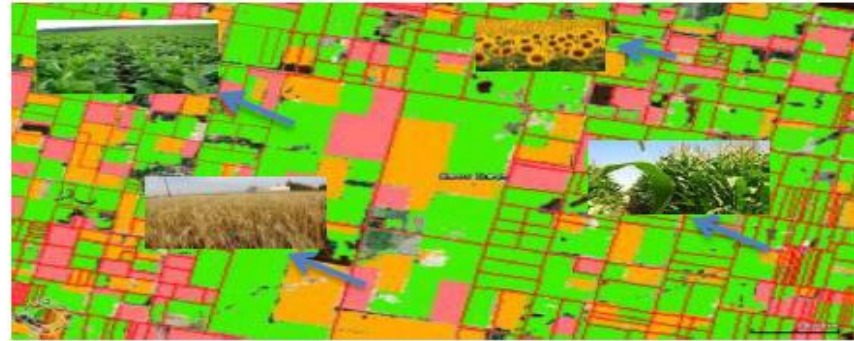
86% of CEOs consider Digital their #1 priority

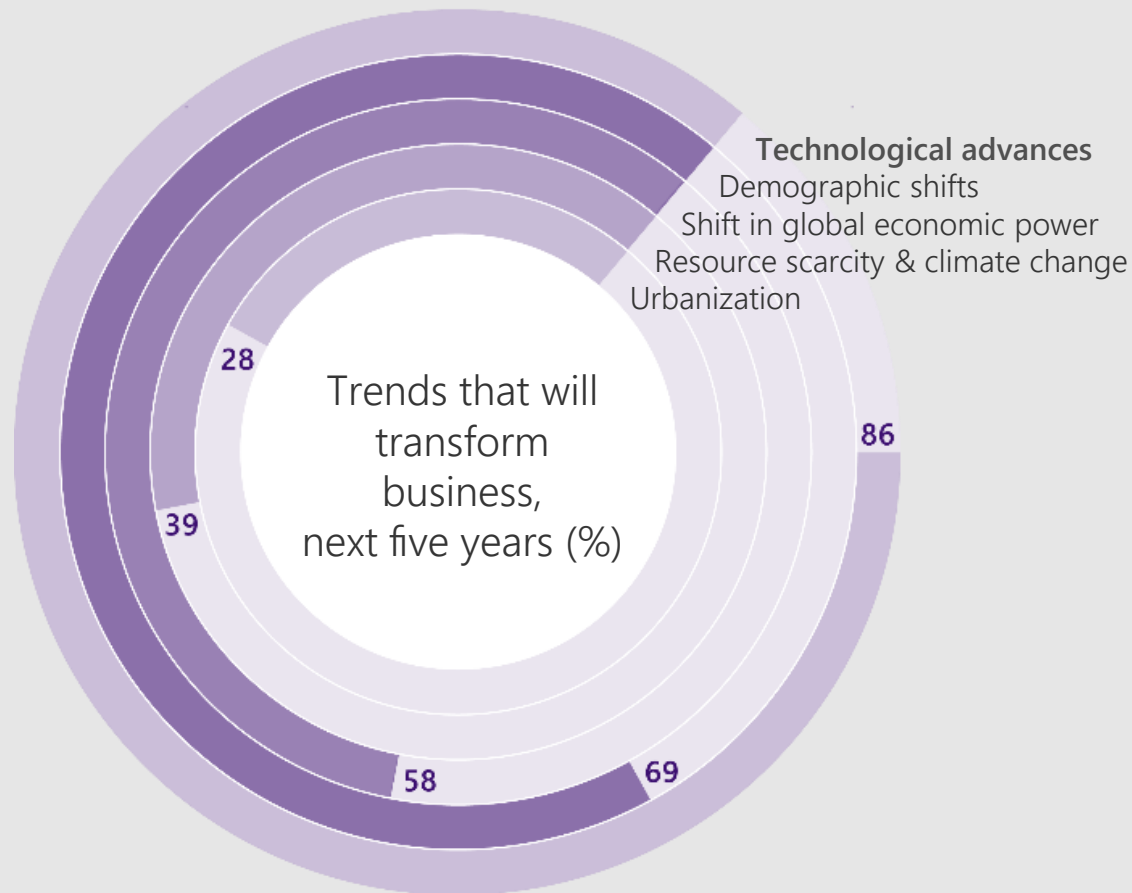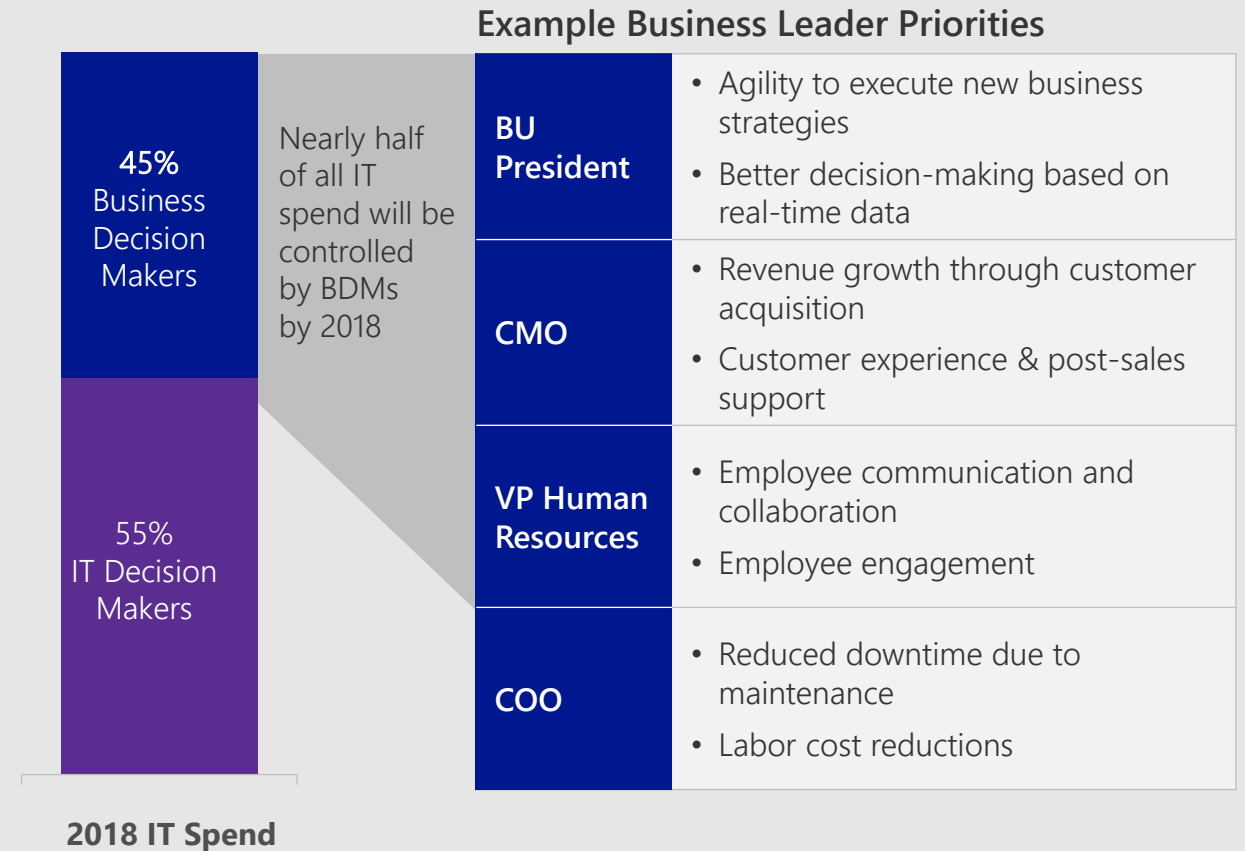## CEOs believe technology will transform their business more than any other global trend

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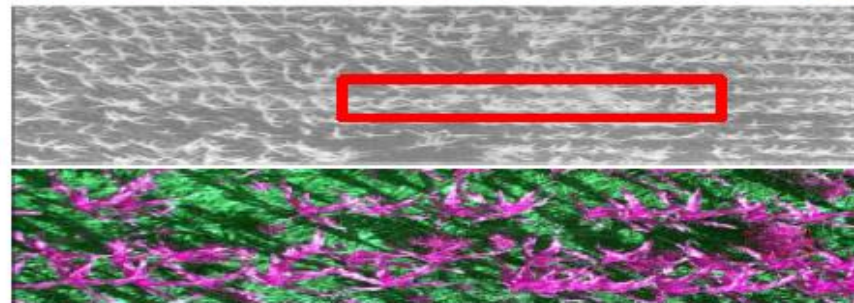
The Eve of the Fourth Industrial Revolution

WE NEED TO CHANGE !

Worldbank Digital Readiness Assessment of Eastern Caribbean countries (September 2019)

Eastern Caribbean Countries are lagging on key elements of the digital econo[...]

Country	Digital Infrastructure		Digital Platforms	
	Regulatory environment[3]	Broadband penetration[4]	Cybersecurity index[5]	e-Gov index[6]
Antigua and Barbuda	🔴	🔴	🔴	🟡
Dominica	🟡	🔴	🔴	🟡
St. Kitts and Nevis		🟢	🔴	🟡
St. Lucia	🟢	🟡	🔴	🔴
St. Vincent and the Grenadines	🟢	🟡	🔴	🔴
Grenada	🟡	🔴	🔴	🟡

References: Green: performing; yellow: performing with gaps; red: lagging

"The Caribbean is on downward trajectory to being the poorest region in the world by 2050. Unless the region halts the current economic slide, it could become the poorest area in the world by 2050 as a consequence of the levels of Public debt, Poverty and Unemployment in this region."

Dr Justin Ram, Director of Economics
Caribbean Developing Bank

Drivers of change: Four specific technological advances—<u>ubiquitous high-speed mobile internet; artificial intelligence; widespread adoption of big data analytics; and cloud technology</u>—are set to dominate the 2018–2022 period as drivers positively affecting business growth. They are flanked by a range of socio-economic trends driving business opportunities in tandem with the spread of new technologies, such as national economic growth trajectories; expansion of education and the middle classes, in particular in developing economies; and the move towards a greener global economy through advances in new energy technologies.

World Economic Forum – Future of Jobs Report

WE NEED TO CHANGE

OLD   **NEW**

TRAINING → SKILL DEVELOPMENT

EXPERTS → TECHNICAL DEPTH AS A MOVING TARGET

INDIVIDUAL KNOW-HOW → COLLABORATION + COMMUNITY

Integrated Collaboration
Your Customer + People + Alliances

SELLING → ENVISIONING

TRAINING AS POST SALES → CONSTANT ENABLEMENT

STATIC OPERATIONS → AUTOMATION AS A MEANS TO OPTIMIZE

FOCUS ON REVENUE → FOCUS ON GROWTH AND INVESTMENTS

DEFINED SERVICES / SLA'S → DESIRE & EMBRACE CHANGE

EFFICENCY AMBASADORS → ENTREPENEURS OF NEW BUSINESS MODELS

Your Expertise
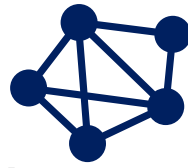
Digital Transformation pillars

ENGAGE CUSTOMERS

Give them an experience they love

EMPOWER EMPLOYEES

Reinvent productivity; a data-driven culture

OPTIMIZE OPERATIONS

Modernize portfolio, transform processes and skills

TRANSFORM BUSINESS

utilize data to produce actionable analysis and enable better decision making

Digital Transformation in Government (Leadership)

Traditional City

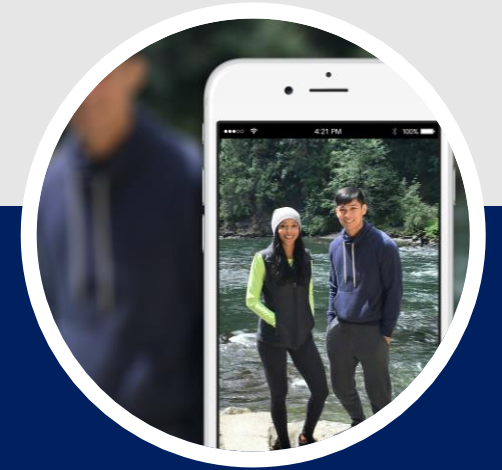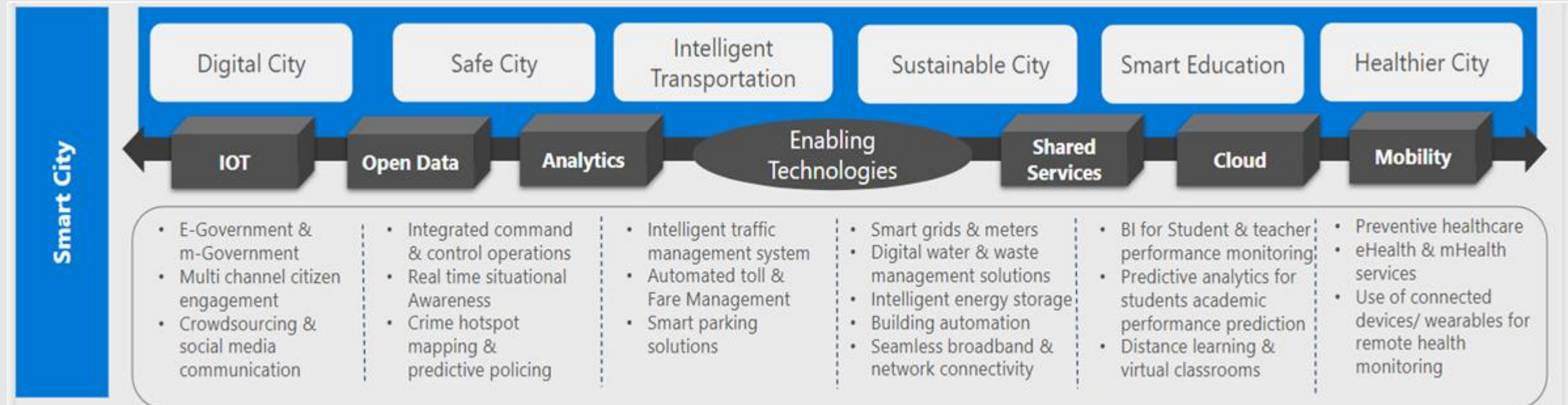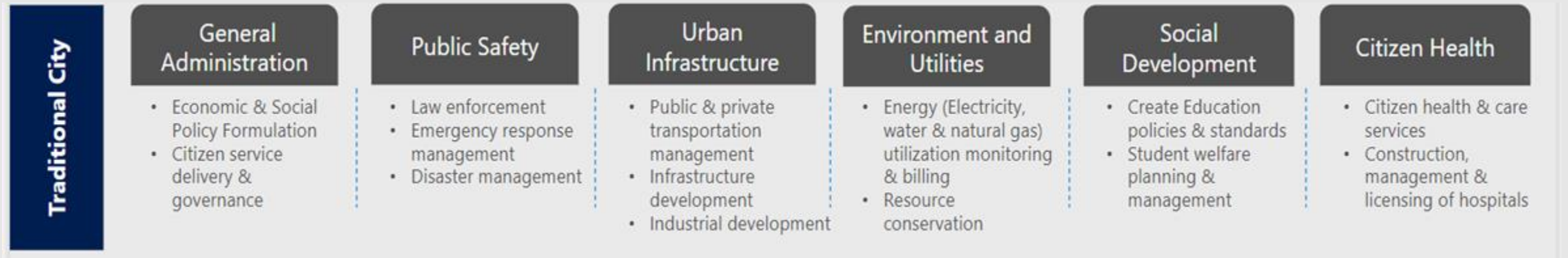| General Administration	Public Safety	Urban Infrastructure	Environment and Utilities	Social Development	Citizen Health
• Economic & Social Policy Formulation • Citizen service delivery & governance	• Law enforcement • Emergency response management • Disaster management	• Public & private transportation management • Infrastructure development • Industrial development	• Energy (Electricity, water & natural gas) utilization monitoring & billing • Resource conservation	• Create Education policies & standards • Student welfare planning & management	• Citizen health & care services • Construction, management & licensing of hospitals

Smart City

| Digital City	Safe City	Intelligent Transportation	Sustainable City	Smart Education	Healthier City
IOT	Open Data	Analytics	Enabling Technologies · Shared Services	Cloud	Mobility
• E-Government & m-Government • Multi channel citizen engagement • Crowdsourcing & social media communication	• Integrated command & control operations • Real time situational Awareness • Crime hotspot mapping & predictive policing	• Intelligent traffic management system • Automated toll & Fare Management • Smart parking solutions	• Smart grids & meters • Digital water & waste management solutions • Intelligent energy storage • Building automation • Seamless broadband & network connectivity	• BI for Student & teacher performance monitoring • Predictive analytics for students academic performance prediction • Distance learning & virtual classrooms	• Preventive healthcare • eHealth & mHealth services • Use of connected devices/ wearables for remote health monitoring

Digital Transformation in Government (Execution)

How to improve citizens services, enhance communication and collaboration, and foster open democracies

ENGAGE YOUR CITIZENS

Through connected mobile services to increase satisfaction and participation
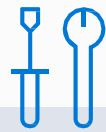
EMPOWER CIVIL SERVANTS

to do their best work by leveraging the power of mobility

OPTIMIZE GOVERNMENT OPERATIONS

to ensure cost and operating efficiencies with trusted cloud services

TRANSFORM YOUR SERVICES

and better utilize data to produce actionable analysis and enable data driven public policies

Technologies transforming Government

Big Data and Open Data

Security

Internet of Things

Artificial Intelligence/ Machine Learning

Blockchain

Cognitive Services

Vision

Speech

Knowledge

Language

HOW DO WE CHANGE ?

Mobile App
with back end integration

HOUSING COMPANY is the largest low income habitat provider in the French West Indies.

With 14,000+ tenants across 4 territories, this property manager wanted to improve tenant services, contractor engagement while providing its staff and residents with real time visibility on their Accounts, Service Requests and Planning.
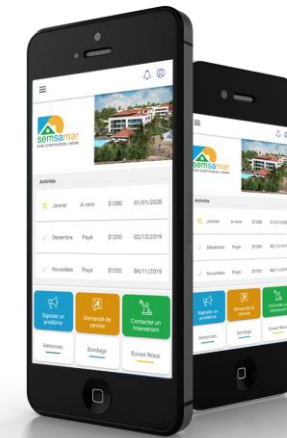
Accounts

Service Requests

Manage tenant relationship

Manage Suppliers

Reporting

Search and Follow up

Five passenger experience areas of High importance and Low satisfaction
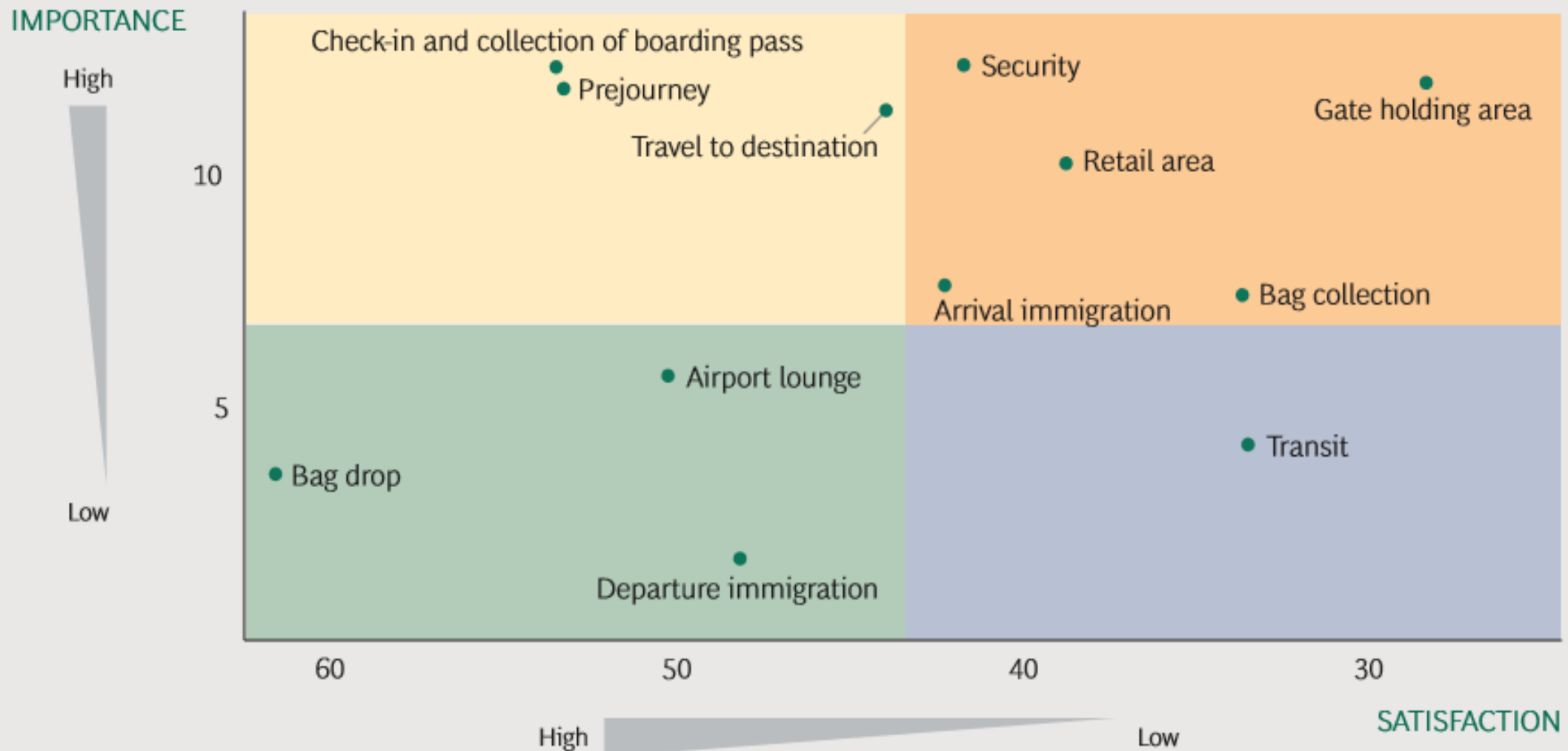
Reimagining the customer experience

Inspiration	Purchasing Experience	Departure Experience	In-Flight Experience	Arrival Experience	Reflection
Anywhere	Anywhere	Lobby Lounge & Coworking Gate	Airplane	Gate Arrivals Ground	Destination

Flight Operations

Ground Operations

Airport Operations
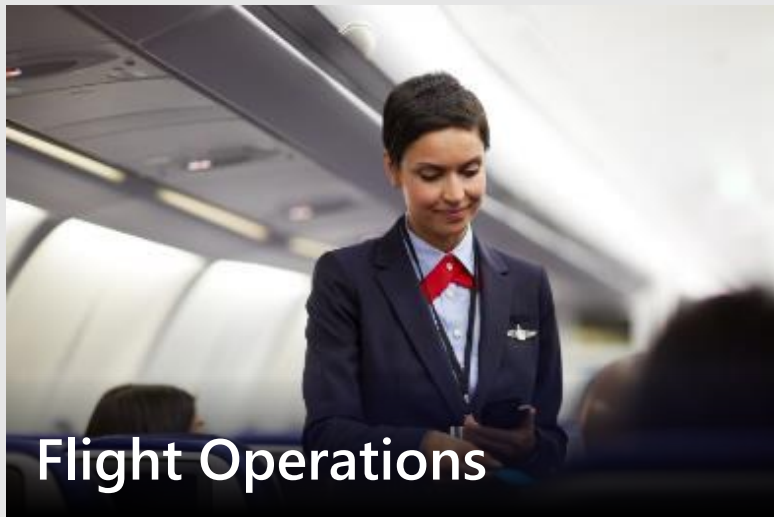
Loss baggage solution architecture

Cognitive services
LUIS & Sentiment analysis

Maps
Asset geolocation

CRM
Business data

MFA

Logic Apps
3rd party integrations

Storage
Conversations & raw data

Dashboard

IoT Suite
Remote monitoring

Operational dashboard

Lost luggage per airport

Lost luggage per country

Lost luggage per user and flight

flight ● Las Vegas MS2116 ● Madrid MS2112 ● Seattle MS2113

Gisela Torres
Inma Montesinos
Jose Maldonado
Jose Manuel Maldon...
Miguel Ángel Rivera
Miguel Ángel Rivera ...

Corrected shiptment locations

Lost luggage per flight

Las Vegas MS2116
Madrid MS2112
Seattle MS2113

Lost luggage per airport

LAS
MAD
SEA

Hourly messages by channel

Channel ● facebook ● skype

Count of username
BY LANGUAGE, CHANNELID

language ● en ● es

facebook
skype

Unique users

6

Total messages

245

Users average sentiment

0.62

Bot average sentiment

0.75

Real time dashboard

Airports losing most bags
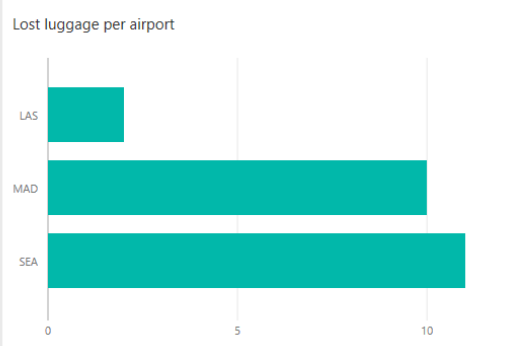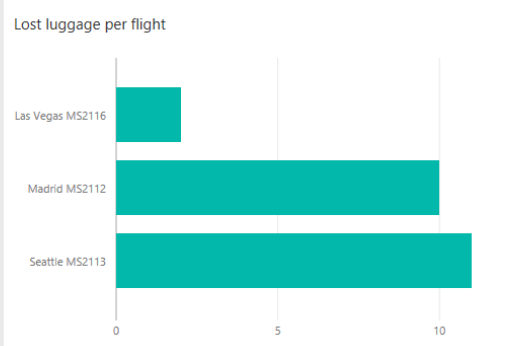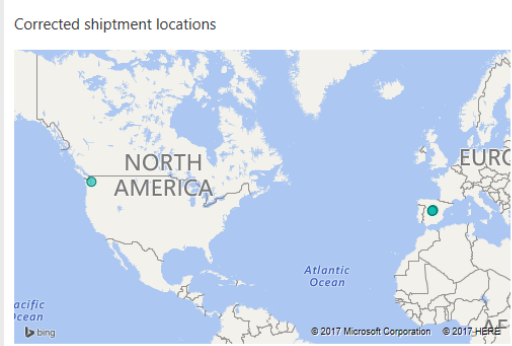
Flights losing most bags
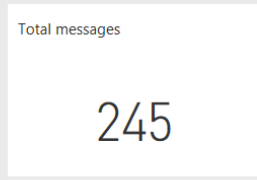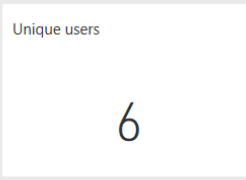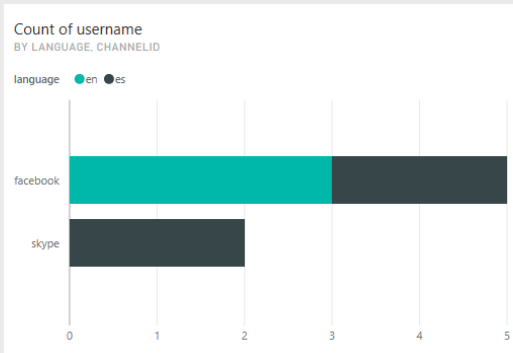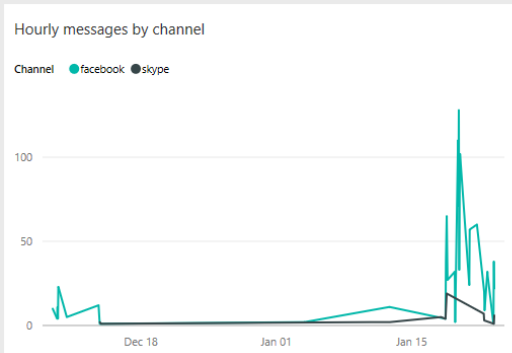
Top users affected
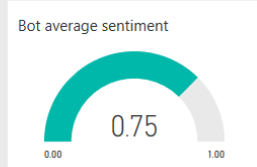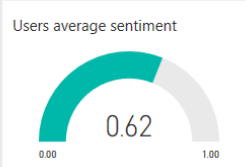
Track user sentiment

EMPOWER YOUR EMPLOYEES

Advance government employee productivity with one complete collaboration solution

Collaborate with integrated tools to build better citizen services

Increase citizen services response rates with access to information and people

Enhance services experience when employees have the best tools for the job

MODERN
WORKPLACE

Meetings

Voice

Storage

Web &
mobile*

Big Data &
Analytics*

Mobility &
Security

Business
Intelligence

Backup & Disaster
Recovery*

CRM

Tasks

Call Center Analytics

Recuento de entity — POR ENTITYTYPE

- producto — 264
- concepto — 216
- cantidad
- destinatario — 186 / 50

Evolucion de consultas en el tiempo

- contratar — 364
- domiciliar — 305
- tasar
- cancelar
- transferir — 148 / 111
- vender — 24 / 12
- devolver — 50

Sentimiento asociado a cada tema
- sentiment
- cantidad, concepto, producto, destinatario

Promedio de sentiment — POR INTENT
- ampliar, vender, transferir, tasar, pagar, domiciliar, devolver, contratar, comprar, cancelar

Archivo de transcripciones

CRM

Grabaciones procesadas — 1033

Sentimiento medio — 0,00 | 0.80 | 1,00

Nube de tags financieros

operación, transferencia, cobertura, liquidacion, comision, bancario, préstamo, producto, hipoteca, plazo, cajero, sucursal, oferta, factura, seguro, extracto, sueldo, nomina, crédito, interés, seguridad, custodia, operacion, tasacion, actual, amortización, TAE, base, tipo, intereses, dinero, tendencia, punto, riesgo, uso, colocar, trabajo, tasa, comisión, venta, bien, Euribor, corriente, porcentaje, ahorro, interes, rentase, banco, diferir, prima, pago, cuenta, valor, compra, presente, indice, siniestro, tierra

Keywords financieros por intención y sentimiento medio en la conversación asociada

intent: ● ampliar ● cancelar ● comprar ● contratar ● devolver ● domiciliar ● pagar ● tasar ● transferir ● vender ● Promedio de sentiment
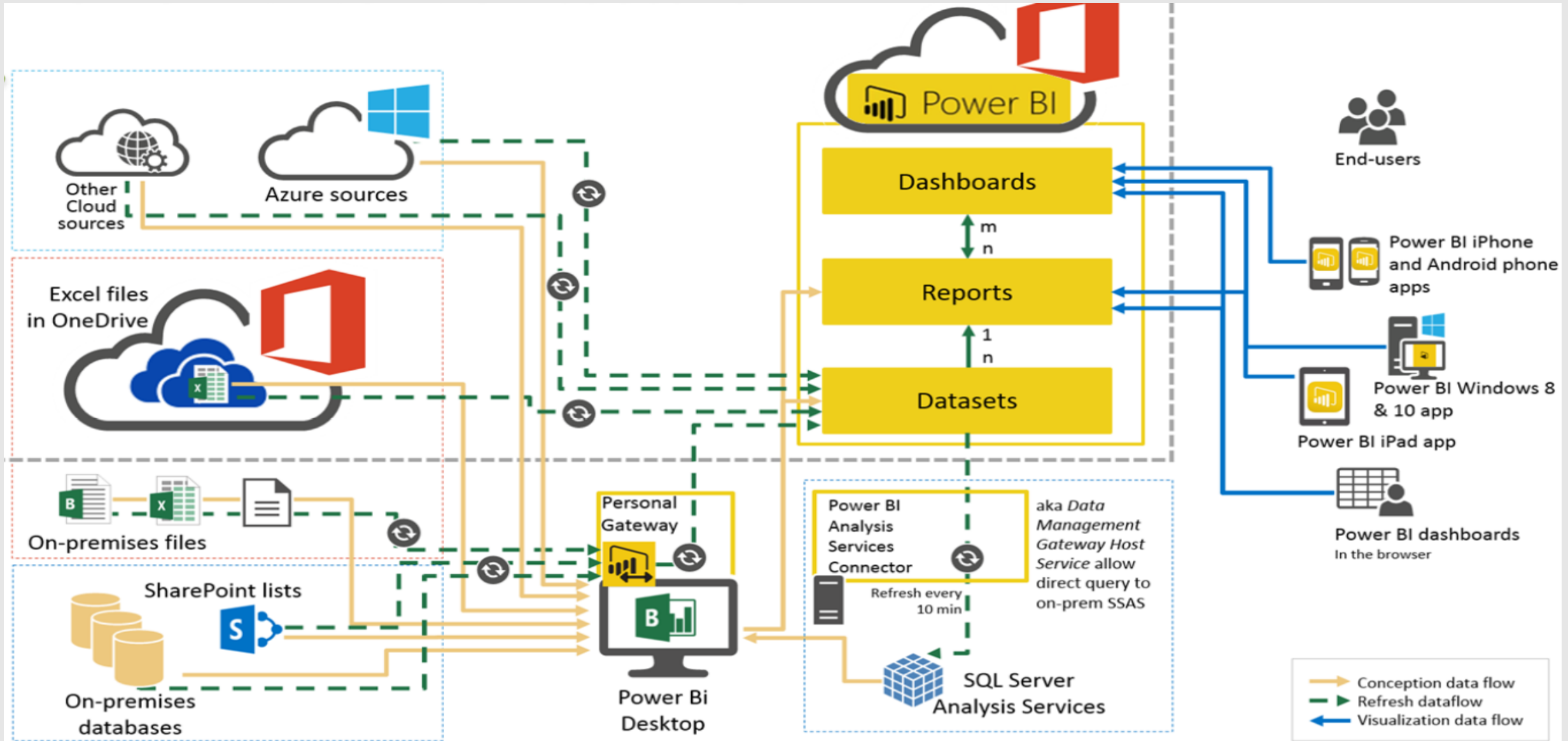
Real-time analysis

Understand caller intentions

Obtain caller sentiment

Business key concepts

Conversation history

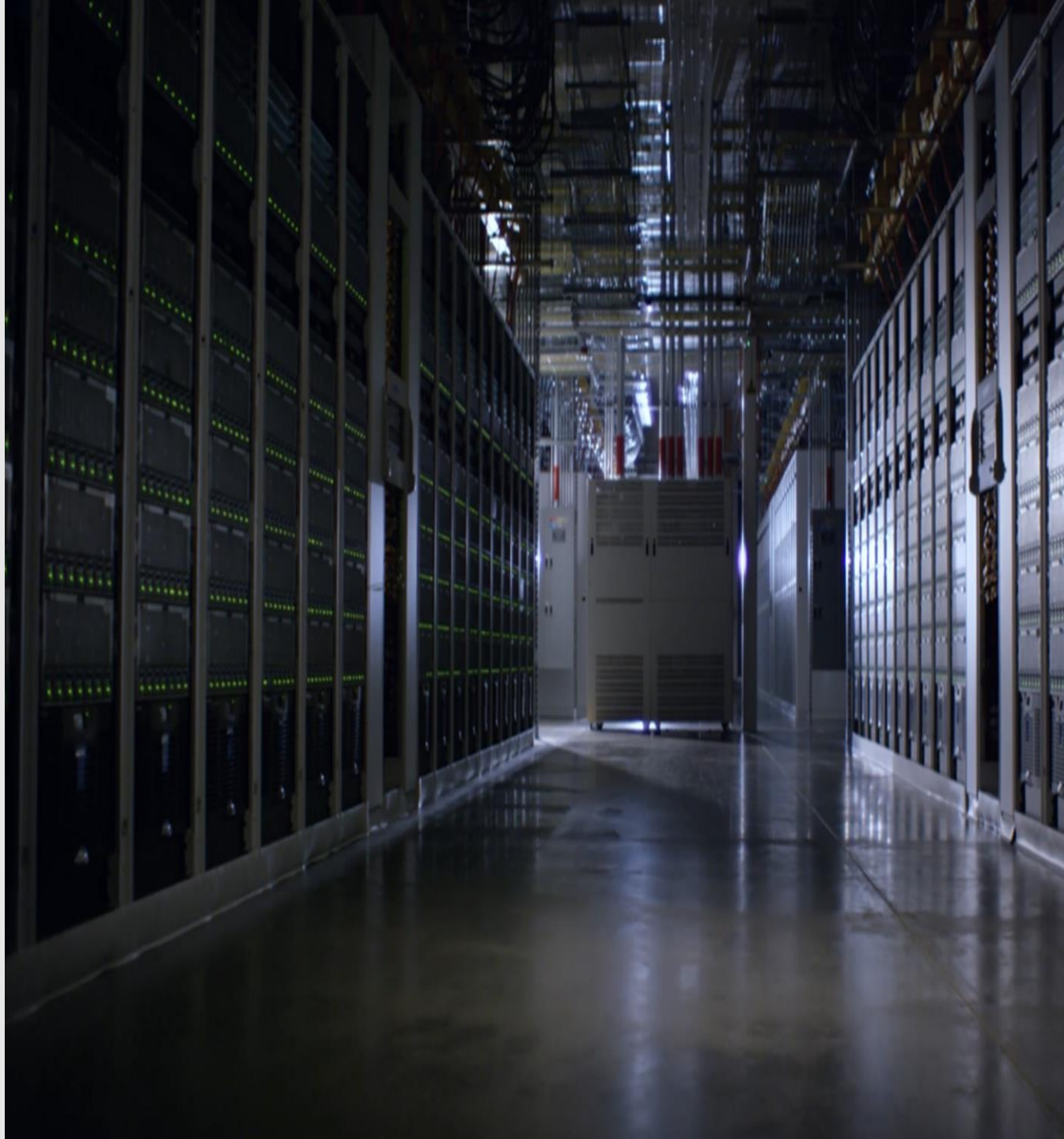# Modern Data Analytics architecture

OPTIMIZE OPERATIONS

Reduce costly maintenance and free up resources

Enhance capabilities for managing customer identity and data securely

Improve agility through self-provisioning services

**Increase** resiliency with scalable, on-demand infrastructure

Datacenter
Hyper Converged Infrastructure

This project aimed at consolidating and optimizing the Datacenter to meet the current and future demands of TELCO corporate users.

The target Datacenter infrastructure will be based on DELL EMC vxRAIL HyperConverged Infrastructure (HCI) with 4 nodes for processing and storage, EMC Data Domain 6800 for Disk based data retention, Avamar backup and Recovery suite – as well as vmWare vSphere hypervisor and vCenter cloud management tools.

As a result of this project, TELCO has consolidated the current capacity of over 80+ servers located in 10 racks into half rack form factor.

Site1

ToR Switches

HCI Cluster

Backup

OOBM Switch

40GB QSFP+
10GB SFP+
1Gb Base-T
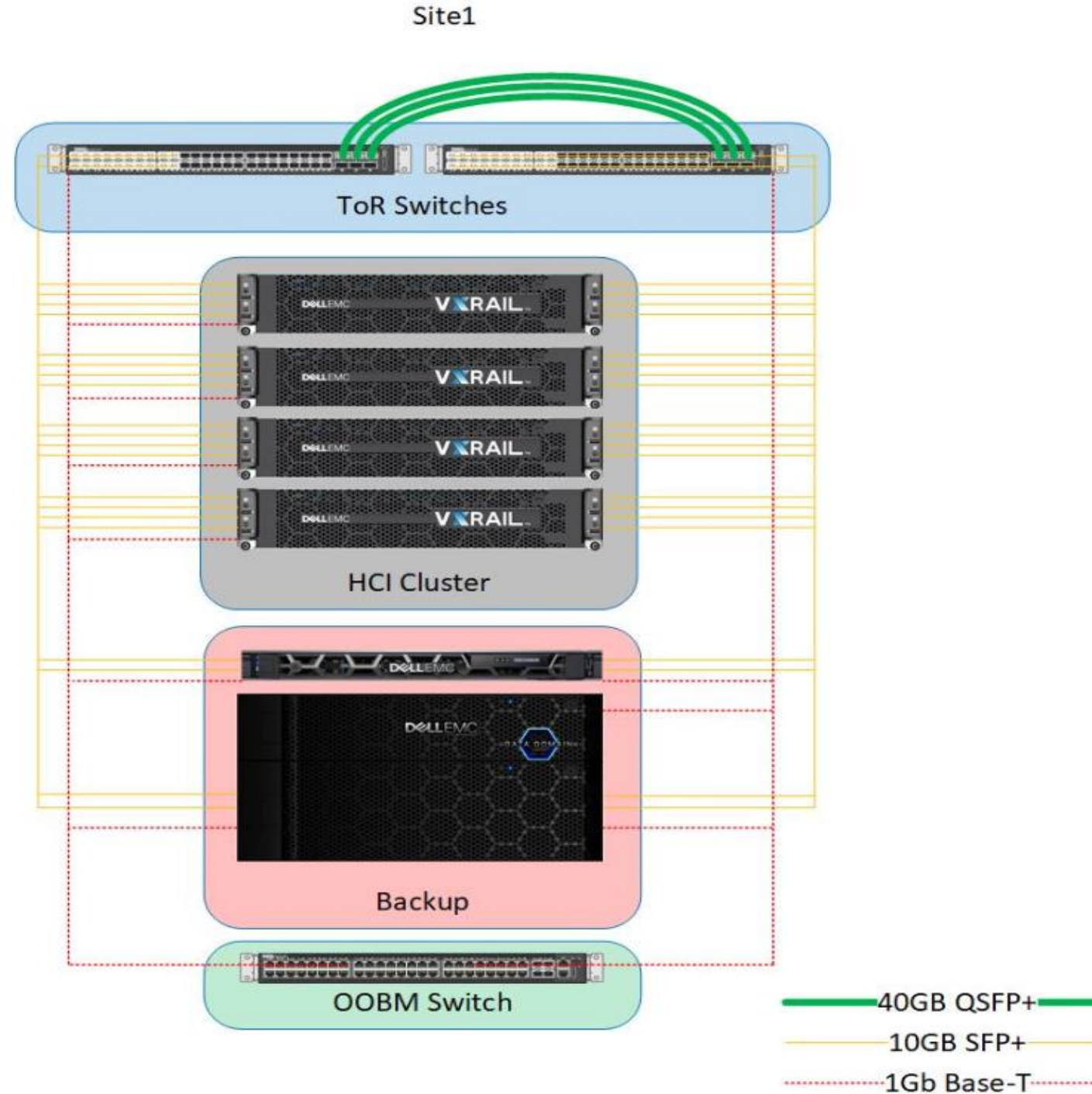
Security
Deployed Edge to Cloud Security Fabric

INSURANCE company manages a large network of 500+ users in 21 locations across the Caribbean. Its hybrid information system is based on both on-premise and public cloud-based IT infrastructure, database services and application services.
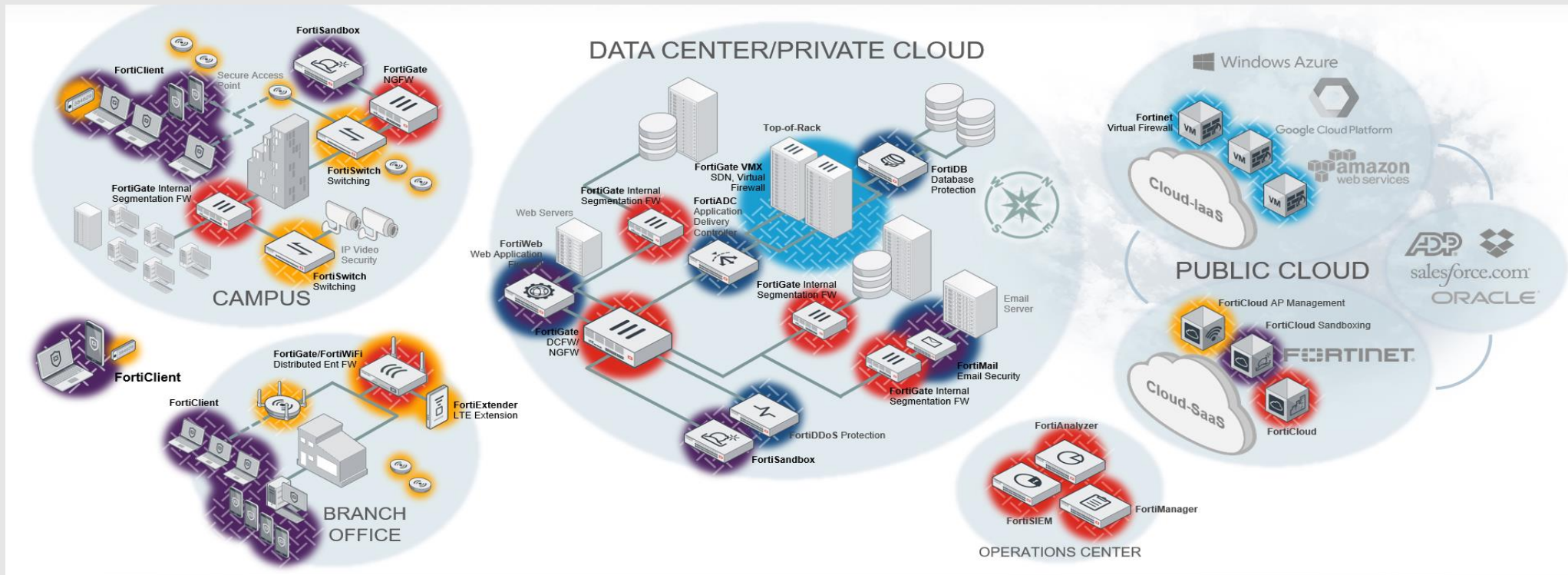
TRANSFORM YOUR SERVICES

Accelerate
insight driven decisions on government agency operations and performance

Achieve
the potential of the internet of things

Control
government data storage and analysis costs

Combine
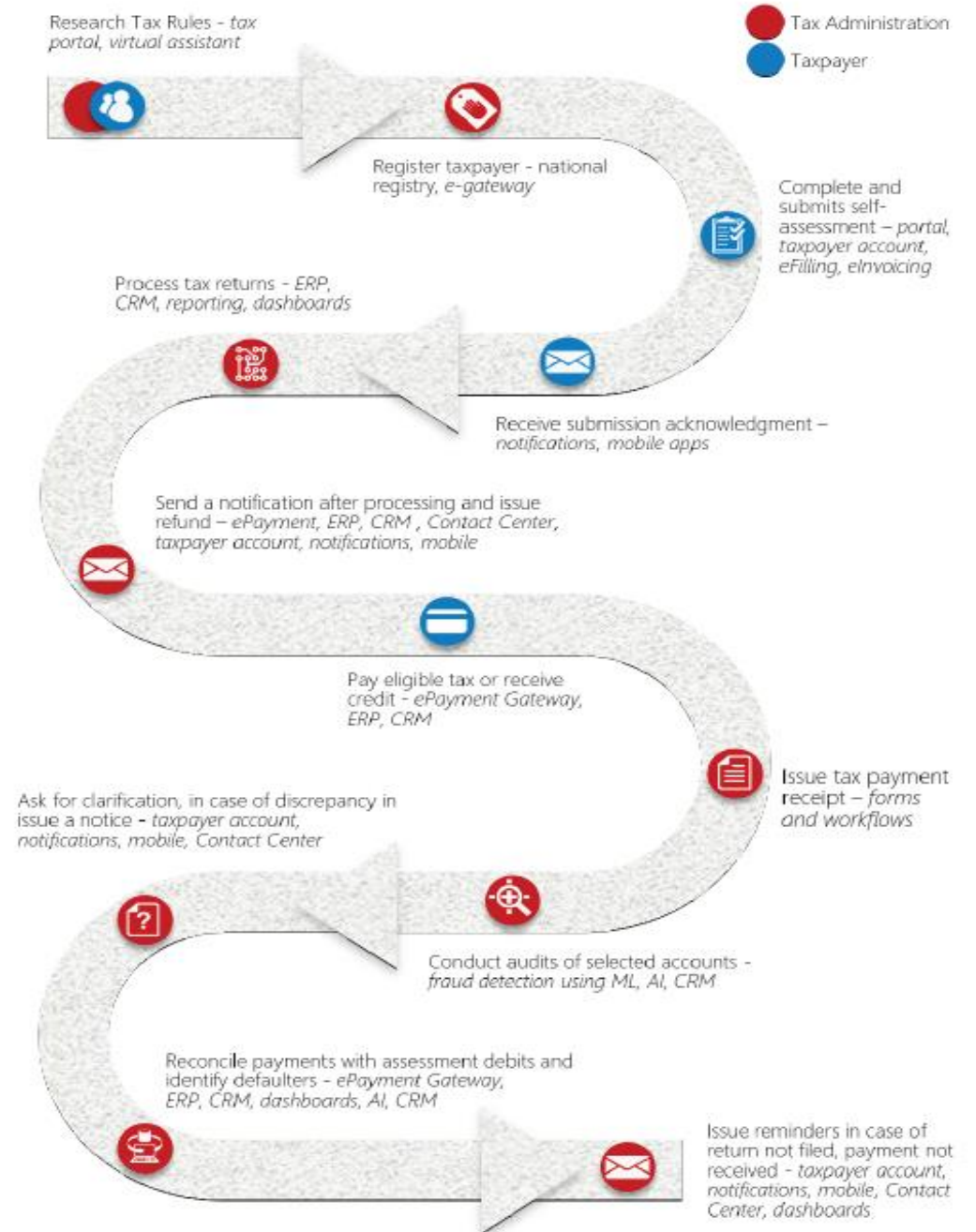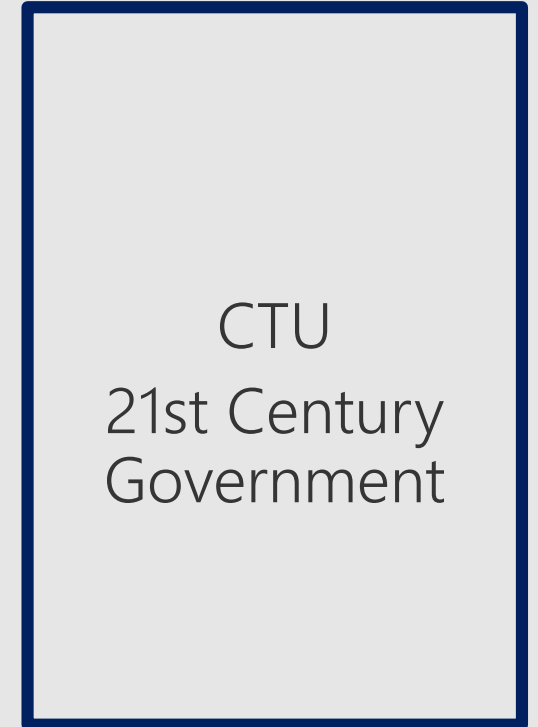multiple data sources for enhanced insight and better decision making

Tax Journey Map

Tax Administration

Taxpayer

Research Tax Rules - *tax portal, virtual assistant*

Register taxpayer - *national registry, e-gateway*

Complete and submits self-assessment – *portal, taxpayer account, eFilling, eInvoicing*

Process tax returns - *ERP, CRM, reporting, dashboards*

Receive submission acknowledgment – *notifications, mobile apps*

Send a notification after processing and issue refund – *ePayment, ERP, CRM, Contact Center, taxpayer account, notifications, mobile*

Pay eligible tax or receive credit - *ePayment Gateway, ERP, CRM*

Issue tax payment receipt – *forms and workflows*

Ask for clarification, in case of discrepancy in issue a notice - *taxpayer account, notifications, mobile, Contact Center*

Conduct audits of selected accounts - *fraud detection using ML, AI, CRM*

Reconcile payments with assessment debits and identify defaulters - *ePayment Gateway, ERP, CRM, dashboards, AI, CRM*

Issue reminders in case of return not filed, payment not received - *taxpayer account, notifications, mobile, Contact Center, dashboards*

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The Digital Transformation Imperative
Perspectives from an Entrepreneur

Thank you !

Bibliography

The Fourth Industrial Revolution
Klaus Schwab
Founder and Executive Chairman, World Economic Forum

A Management Blueprint for High-Achieving Executives
LEVERAGING DIGITAL TRANSFORMATION
Proven Leadership and Innovation Strategies to Engage and Grow Your Organization
M. NADIA VINCENT, MBA
Foreword by David A. Maynard

ENTERPRISE ARCHITECTURE AS STRATEGY
IT Governance
How Top Performers

THE REAL BUSINESS OF IT
How CIOs Create and Communicate Value
RICHARD HUNTER
GEORGE WESTERMAN
HARVARD BUSINESS PRESS

CTU
21st Century Government

Four operating models

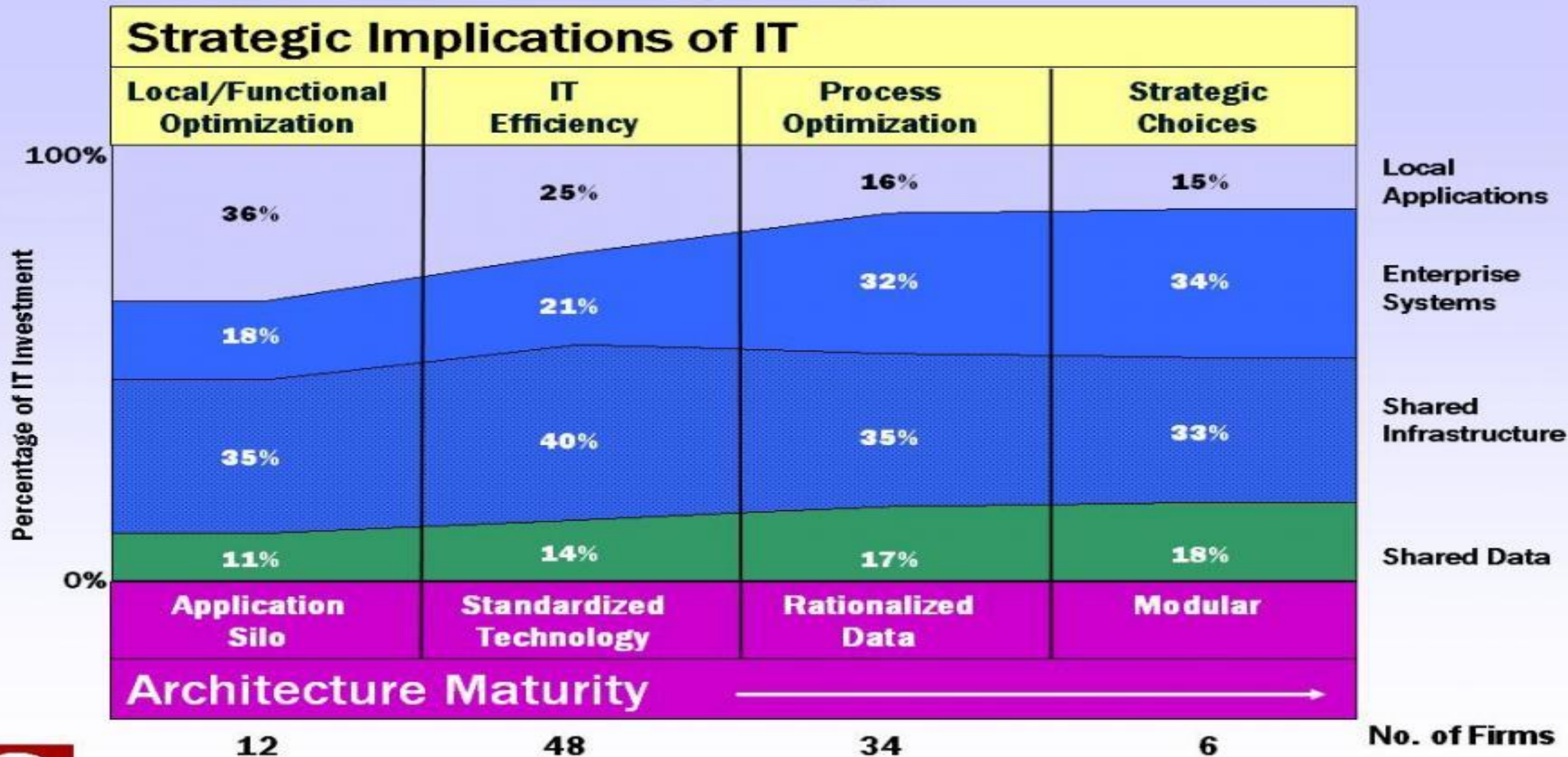|	**Low** Business Process Standardization	**High** Business Process Standardization
High Business Process Integration	**Coordination** ■ Unique business units with a need to know each other's transactions ■ **Examples:** Commonwealth Bank of Australia, MetLife, Aetna ■ **Key IT capability:** access to shared data, through standard technology interfaces	**Unification** ■ Single business with global process standards and global data access ■ **Examples:** Southwest Airlines, Dow Chemical, UPS Package Delivery ■ **Key IT capability:** enterprise systems reinforcing standard processes and providing global data access
Low Business Process Integration	**Diversification** ■ Independent business units with different customers and expertise ■ **Examples:** Johnson & Johnson, Pacific Life, ING ■ **Key IT capability:** provide economies of scale without limiting independence	**Replication** ■ Independent but similar business units sharing best practice ■ **Examples:** Marriott, 7-Eleven Japan, ING DIRECT ■ **Key IT capability:** provide standard infrastructure and application components for global efficiencies

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Architecture Maturity Stages

	1	2	3	4
Capability to solve problems & meet goals How evolved is your capability to creatively problem solve?	In-person, one-episode at a time	Some analysis, high level trends	Deeper analysis, identify hidden problems, respond	Real-time data, predictive, proactive, transformative
Integrate data & technology How are services delivered & content managed?	Paper / No Data	Some automation/ some data	Transactional Services / Rich data	Integrated data models
Work across disciplines & systems How do teams work together?	Silos	Across disciplines or units	Across teams or departments	Across systems
Lead Collaboratively What does leadership look like on your teams?	Hierarchical	Encourage team problem-solving	Shared accountability for outcomes	Transparent multi-partner governance
Engage people How openly do you allow others to participate?	1-way/Broadcast Engagement	Receive input / 2-way engagement	Close the feedback loop	Inclusive Relationships / Partnerships