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Internet of Everything

CUSTOMER



Pushkar Ranjan
SAP Internet of Things
San Francisco Bay Area | Computer Software

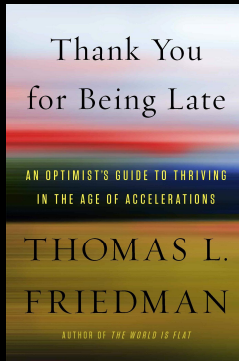
Current	SAP
Previous	SAP, Microsoft, Wipro Infotech
Education	Stanford University

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<https://www.linkedin.com/in/pushkarranjan>

Unprecedented Change in the 21st Century Fueled by Accelerations

TECHNOLOGY | GLOBALIZATION | CLIMATE CHANGE



2.5 billion

Connected people on
social networks by 2020



75 billion

Connected devices by 2020



\$65 trillion

Global business trade by 2020



75%

Human population
living in cities by 2050

“When wireless is perfectly applied the whole earth will be converted into a huge brain, which in fact it is, all things being particles of a real and rhythmic whole”

Nikola Tesla (1926)

SAP FOR THE DIGITAL ENTERPRISE

Run
SAP Cloud
Applications

Supplier
Collaboration

Customer
Experience

Digital Core

Business
Transactions

Intelligent
Insights

Win
SAP Leonardo

Workforce
Engagement

Assets &
Supply Chain

SAP HANA

SAP Cloud Platform

SAP Leonardo
Technologies

Design Thinking Services



SAP Cloud Platform

Microservices | Open APIs | Flexible Runtimes | Integration

Multi-Cloud Infrastructure

SAP Data Center



Google Cloud Platform

Microsoft Azure



SAP plans to invest €2 billion in IoT by 2020

ZDNet



WINDOWS 10

CLOUD

INNOVATION

SECURITY

APPLE

MORE

NEWSLETTERS

ALL WRITERS



SAP allots \$2 billion for IoT investments,

"With billions of connected devices, we now have the potential to reshape society, the economy and the environment," said Bill McDermott, CEO of SAP. "SAP HANA is the data platform we knew would unlock the Internet of Things. Today SAP is making another bold investment to help our customers seize the benefits of live business. Only SAP empowers businesses to innovate from the core to the edges to the networks."

Things by 2020

Internet of Things and the Connected “MGC” Architecture



Sensors
Things*
Machines
Buildings
Vehicles



Intelligent Edge



SAP Cloud
(HANA) Platform

*Smartphone carrying consumer included

Things (eMbedded):

Industrial, government and consumer machinery and devices with embedded sensors and other industrial sensors

Gateway:

Industry PC, Router, Raspberry PI, Smart Phone/Tablet, Local PC

Center:

Big Data Ingestion, Storage, Analysis and Application Platform (Cloud, On Premise, Hybrid)

Internet of Things Landscape 2018

APPLICATIONS (VERTICALS)

PERSONAL	HOME	VEHICLES	ENTERPRISE	INDUSTRIAL INTERNET
WEARABLES Apple Watch, Samsung Gear, Xiaomi, Moto 360, LG, Huawei, CAEDEN, MOTIV, WEARABLE X, Jewelbots, RINGLY	AUTOMATION nest, Honeywell, SAMSUNG, CHAMBERLAIN, SAVANT, tado°, ecobee, ORVIBO, roosta, LIFX, PointGrab, nuro, ecovent, KEEN, OLUTRON, LEVITON, somfy, LIGHT SENTRY, Twist, deako HUBS nest, INSTEON, IIS, BOSCH, Verizon Smart Hub, Essential, Control4, SmartThings, Fluant, iSee, iRule, Vera, NEXIA, LifeSmart, IOTAS SECURITY ASSA ABLDY, August, Schlage, xfinity ring, KeySafe, canary, vivint, LOCKSTATE, SimpliSafe, Kwikset, XIAOMI, Lookitron, smartfrog, LATCH, cocoon, Seek, scout, camlo, BuddyGuard VOICE PLATFORMS alexa, Google Home, HomePod, echodot, Tencent, Alibaba.com, echo look, Gixby, DUEROS, JOSH, SAYSPRING KITCHEN june, nomiku, KUVÉE, BRAVA, ember, Thnit, drop, pony, hiku, KEVUE, BREW, BUT, SUPERMECHANICAL, TASTY CONSUMER ROBOTICS jibo, iRobot, SoftBank, Roido, neato, UBTECH, MATHFIELD PETS Whistle, Petnet, Petzi, Petcube GARDEN radio, EDYN, GROW, boom, plant & grow TRACKERS TrackR, tile, AthenTrek	UAVS Parrot, DJI, SDR, Airware, YUNEC, AERYON, SKYCATCH, zipline, kespri, AIRMAP, CyPhy, DroneDeploy, PRECISION, AIRBOTICS, Dedrone, DronesHIELD, QRL, LANCAR, ELITKEY, SkySafe, delfly, drone base, liveMapper, MEASURE, GAPE, PRENAV, HXO+, AIRFRAME AUTONOMOUS Waze, Apple, Audi, GM, TESLA, UBER, Apollo, CYNGN, OPTIMUS, Cruise, brain, DAIMLER, DELPHI, QUANERGY, SEEGRID, DEEPMAP, DRIVEBYNE, Peloton, BESTMILE, Valeo, GARMER, AUTOMOTIVE AUTOMOBILES Waze, malromile, nauto, INRIX, hum, Airbiquity, navdy, ARGUS, VENIAM, CLOUDCAR, OpenXC, nexar, TrueMotion, vinli, SAVARI, Zebie, dash, German Autolabs BICYCLES / MOTORBIKES Ofo, mobike, superpedestrian, LIMO, gogoro, HAMMERHEAD, SOBI SPACE & AVIATION BOEING, SPACE X, AIRBUS, SIA, Kitty Hawk, BLUE ORIGIN, spire, Orbital ATK, boam, AMS, Relativity, PLANET	HEALTHCARE STANLEY, verily, Sotera, Medrobotics, Senseonics, MONTERIS, VitalConnect, Omim, AUGMEDIX, HINEX, NovaSom, AIRSTRIPE, micio, KITCHCHECK, Invendo medical, simplifeye, Peerbridge, Perint, KILCHECK, vivify health, VERSUS, overpoint, BELLEFLORE, WANDERLAP RETAIL RetailNext, PHUNWARE, ICIX, Euclid, bossanova, PRISM SKYLABS, Percolata, Theatro, cloudtags, Blue Bile, GIMBAL, VARIABLE, dör AGRICULTURE BLUVERIVER, FarmerEdge, Granular, prospera, cropX, ARABLE, adopt-N, Ag Leader, ClimateMinder, Smartfield, SMART FARM, Line, ONFARM, SPENSA, Zee, AGRICOL, pvcn, dronereed, Playtek DEFENSE / SECURITY Roboteam, EagleEye, VERTICAL FARMING, BOWERY, FARM, SQUARE, FARM, AGRICOL, DEFENSE / SECURITY, Roboteam, EagleEye, CORALIT, FOODSERVICE, MOMENTUM, CAFEX SMART CITIES & INFRASTRUCTURE LogMeIn, CRESTRON, LogMeIn, Robin team, Comfy, DIONI, PointGrab, KISI, LATCH view SMART OFFICE LogMeIn, CRESTRON, LogMeIn, Robin team, Comfy, DIONI, PointGrab, KISI, LATCH view	MACHINES CATERPILLAR, SIEMENS, BOSCH, Arch, PetaSense, ELEMENT, relayr, TULIP ENERGY Schneider, Itron, ENERNOC, TACHYUS, SolarCity, e-on, TENDRILL, Trilliant, HydroPoint, REXGEN, Highbelly, lucid, OS Outsmart, VERIGRE, SMART, EnergyHub, enlightened, Panoramio, AutoGrid, enevo, ENERGY SAVVY, enbala, BLUE PILLAR, thinkeco, BRIDGXBT SUPPLY CHAIN & LOGISTICS Fleetmatics, ZEBRA, SMARTDRIVE, samsara, spacetime, Tegis, Impinj, GREENROAD, RECODE, OmnID, KEEP, TEGO, Powerhouse Dynamics, Automobile, KONUX, CARBOSENSE, VILLOC, FourKites, MAKETINE, assetpulse, blik, STARSHIP, DISCOVER, MATEO ROBOTICS amazon robotics, ABB, KUKA, ninebot, CloudMinds, Sauer DYNAMICS, CLEARPATH, GREYORANGE, fetch, CANVAS, HARVEST, ZENROBOTICS, SAVIOKE, UR, KINSEES, RIGHTLINE, Grabbit, ROBOTIX, BALYO, nebbiolotechnologies, EMPIRE, RedZone, veeohat, GHOSTROBOTICS INDUSTRIAL WEARABLES GLASS, UPASKILL, ATHEER, DAQRI, parsable, AUGMATE, XOEYE, GUARDNAT, nymi

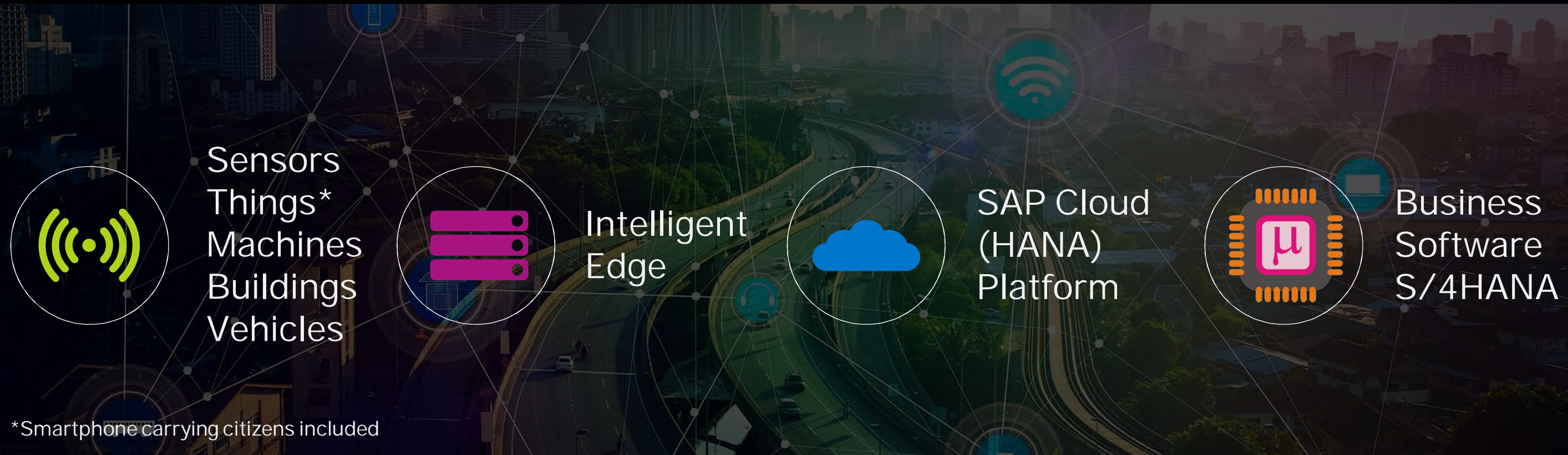
PLATFORMS (HORIZONTALS)

SOFTWARE	SECURITY	CONNECTIVITY	ANALYTICS	DEVELOPER	PAYMENTS & MONEY	INTERFACES	3D
FULL STACK Cisco Kinetic, Predix, ptc, relayr, SAP, Leonardo, neuro, aforo, NOVUM, Iontale, Libbit, CLEARBLADE, ALTIZON, Telit, TEMPO, EUROTECH MIDDLEWARE openext, Numerex, greenwave, Orbital Insight, ZEBRA, Ayla Networks, arrayent, predea, PubNub, MAANA, KONUX, Audio Analytic, BSQUARE, seeoo, meshify, MOTIVE, IFTTT, thingsquare, wisija	SECURITY Symantec, gemalto, THALES, SentinelOne, MOCANA, LogRhythm, DRAGON, sparkcognition, FORSEKOR, TEMPERED, CLARITY, ZingBox, Indegy, Bastille, Cyber, IONIC, escript, SECURITHINGS, CyberFlow, SHODAN, OWASP, VIRSI	CONNECTIVITY machineQ, ALIEN, sigfox, Jasper, helium, SilverSpring, Sierra Wireless, ACTIVITY, UGENU, and senet, cubic telecom, FILAMENT, SENSORO, Hologram, VENIAM, ARKES, KAZAZIN, M2M, HME Networks, SILVIA, haystack, KORE, Cirrent, intamac, aeris	ANALYTICS UPTAKE, G2iOT, OSIsoft, AWS IoT Analytics, cloudera, MAAP, splunk, sumologic, Preferred Networks, STRATOSCALE, Iguazio, striim, UNDERSTORY, Influxdata, EAGLEVIEW, logitrust, machineshop, GASSBEAM, TIMESCALE, TIMBER, gassbeam, Futura	DEVELOPER DEVELOPMENT PLATFORMS: Particle, ARTIK, Things, resin.io, NEURA, Sensor Cloud, SiteWhere, thethings-io, LOSANT, carriots, tempo automation OPEN SOURCE: KRI, Thingspeak, IOT, TESSEL, QUANTAR, nimble, macchina	PAYMENTS & MONEY PayPal, VISA, Square, shopify, PAY, Apple Pay, LevelUp, SHOPKEEP, Verifone, TREZOR, Ledger, keep key, IOTA	INTERFACES VIRTUAL REALITY: Oculus, Gear, VIVE, Google Cardboard, PlayStation VR, LEAP, Iris, LYTRO, FOVE, OSVR AUGMENTED REALITY: Microsoft, VUZIX, EPSON, PARACOSM, SONY, BILIPAN, Synchronic BRAIN / MACHINE INTERFACES & OTHER: THALMIC, HoloPlayer One, SIXENSE, DREM, APIAI, PRONAS	3D PRINTING / SCANNING: stratasy, Carbon, shapeways, matterport, formlabs, REALSENSE, XJET, occipital, Xometry, BANTAM TOOLS, sculpteo, RIZE, VODOO, BotFactory, 3D SYSTEMS, DIGITALALLOY, VOLTERA CONTENT / DESIGN: Sketchfab, Thingiverse, GRABCAD, AUTODESK, Wevr, JAUNT, IVEA, SVRF

BUILDING BLOCKS

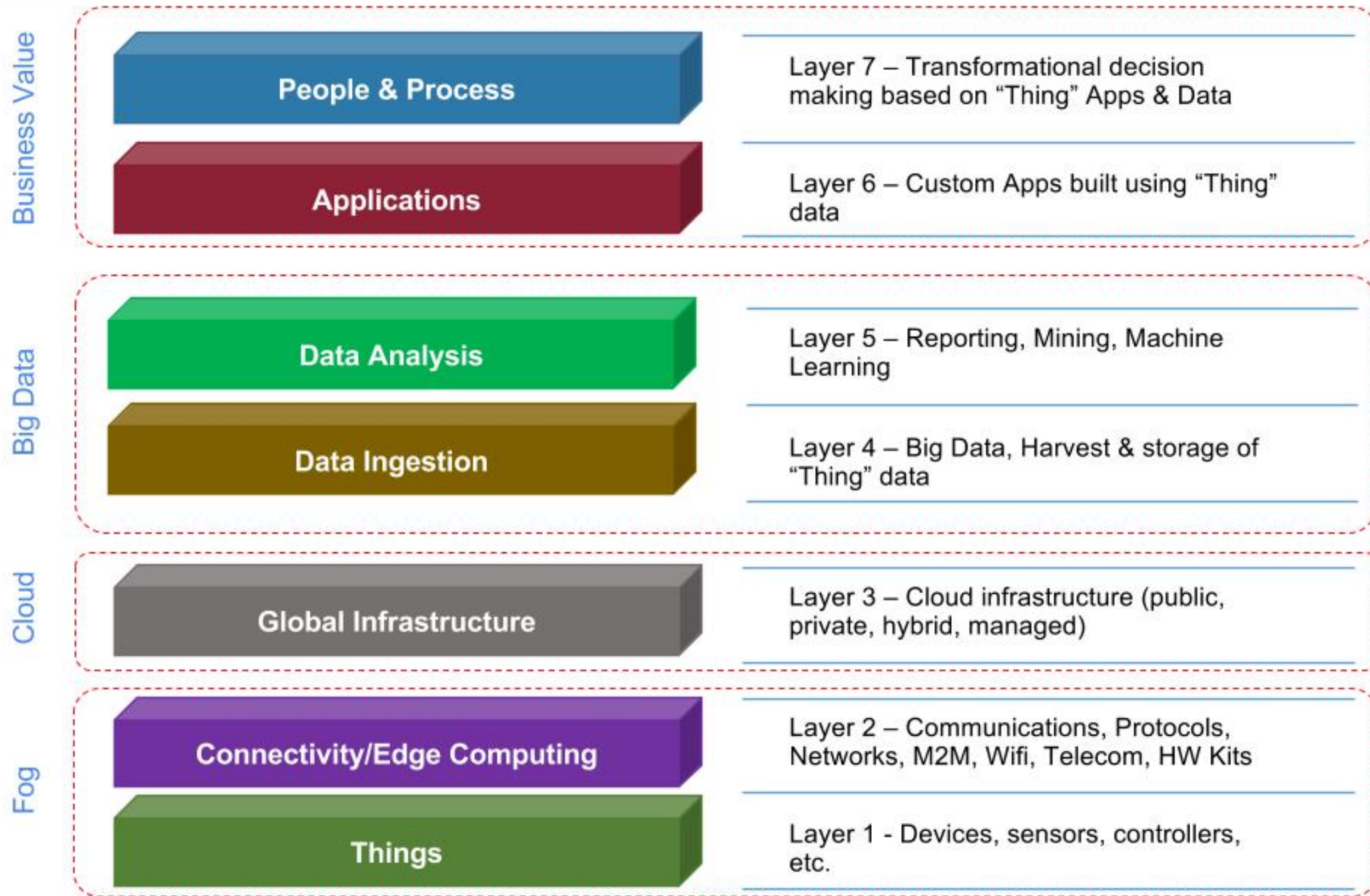
HARDWARE	INFRASTRUCTURE	CONNECTIVITY	PARTNERS
PROCESSORS / CHIPS Intel, QUALCOMM, TOSHIBA, ARM, NVIDIA, LG, SIEMENS, CYPRSS, KESSEMICONDUCTOR, CROSSBAR, MANOMICRO, ZGLUC, NIP, SILICON LABS, SWIFT, MYTHIC SENSORS NP, Atmel, TEXAS INSTRUMENTS, NATIONAL INSTRUMENTS, libelium, vesper, psikick, Qualtré, VALENCELL, TE, MEMS, KERAPY, JADAK, mCube, MONNIT, dialog, SENSYS, goVISO, Motionloft, SST, SAFFCAST PARTS / KITS ARDUINO, Raspberry, Octopart, XILINX, XETHRU, TTtech CHARGING uBeam, Pi, WITricity, humavox, AMPY, OSSIQ	CLOUD Google Cloud Platform, amazon, Microsoft Azure, CISCO, ARTIK, IBM Watson IoT Platform EDGE COMPUTING Azure IoT Edge, SAP, Leonardo, AWS Greengrass EDGE FOUNDRY HPE Edgeline IoT Systems MOBILE OS iOS, android, Essential, Brillo, BlackBerry, HomeKit	PROTOCOLS WiFi, Bluetooth, zigbee, LoRa, NB-IoT, MQTT, N, eWave, AMQP, M-BUS, M2M, THREAD, HART, BITX, DDS, CoAP, RuBee, 2G, 3G, 4G, 5G, LTE, 6G, WPAN, LPWAN, LWM2M, LTE-M, V2X M2M Intel, FIH, BROADCOM, FREEWAVE, TEXAS INSTRUMENTS, Atmel, MOTOROLA, FIBOCOM, SIEMENS, QUALCOMM, Laird, CISCO, gatelino, SatixFy, Qalair, EnOcean, remotes.it WIFI SAMSUNG, QUALCOMM, OneWeb, KYMETA, STARRY, KARMA, eero, DANISPACE, ASTRANIS, Plume, luma	CONSULTANTS / SERVICES IDEO, Dragon Innovation, MESH SYSTEMS, clear object, altix, R/GA, makexyz, 3D HUBS, 8 RETAIL amazon, Walmart, Apple, LOWE'S, TARGET, BOLT, MAX INCUBATORS techstars, Highway, LEMNOS, BOLT, MAX ALLIANCES OMA, GENIVI, IOT, Internet of Things Consortium, AIOI, OPEN CONNECTIVITY MANUFACTURING FOXCONN, flex, JABIL, PEGATRON, New Kinpo Group, Celestica FUNDING KICKSTARTER, AngelList

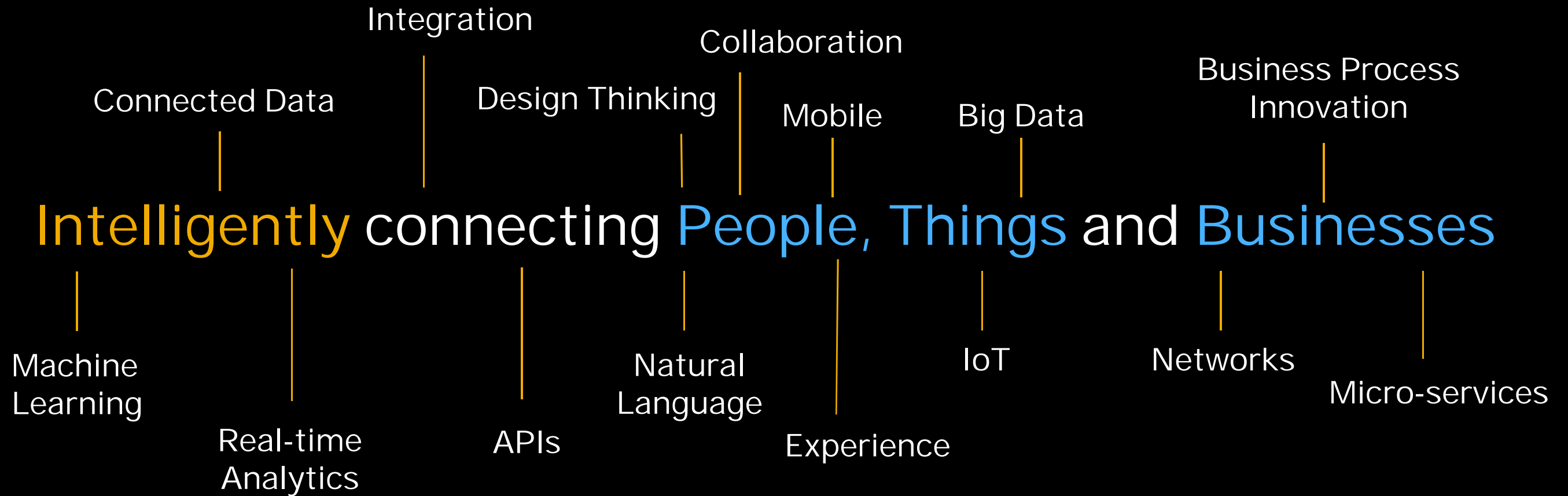
SAP and the Internet of Things Value Proposition



SAP Leonardo Internet of Things Solutions offer native integration to business systems of record across the complete industrial/government value chain and business processes covering manufacturing, product, operations, suppliers, customers/citizens and employees.

7 Layers of the Internet of Things (IoT)





SAP Leonardo Internet of Things Bridge

Connected Products



Product Insights

Goods and Equipment

Supply Networks

Connected Assets



Fixed Asset Insights

Manufacturing Execution

Manufacturing Networks

Connected Fleet



Mobile Asset Insights

Logistics Safety

Logistics Networks

Connected Infrastructure



Building Insights

Construction

Energy Grids

Connected Markets



Market Insights

Rural Areas

Urban Areas

Connected People



People and Work

People and Health

People and Homes

SAP Leonardo
Edge
Computing

SAP Leonardo Internet of Things Foundation

SAP Cloud Platform / SAP HANA Platform

Connected Infrastructure



Building Insights

Construction

Energy Grids

Connected Markets



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Connected Infrastructure



Building Insights

Construction

Energy Grids

Digital Twin for Infrastructure Management and Maintenance





Building Insights

Leverage real-time information for insights to manage and maintain buildings and properties

CUSTOMER

Building management leads to massive savings and increased sustainability

Worldwide buildings account for about 40% of the total energy consumption – Accenture

In the US alone, businesses spend about US\$100B on energy for their offices every year – Accenture

For the US, estimates predict that smarter buildings could save US\$20-25B in annual energy costs. The opportunity is largely untapped as many building owners and operators are not yet aware of how data-driven optimizations can reduce consumption – Accenture

Nearly every commercial building is a potential energy saving project, where the electric lighting systems can be designed to be dimmed with the availability of daylight. Up to 75% of lighting energy consumption can be saved

Average energy saving potential by optimization of controls is 11-31% - source ABB

Heating control	14-25%
Heating Automation	7-17%
Shutter control	9-32
Lighting control	25-58
Ventilation control	20-45%



Construction

Manage construction projects and logistics processes to ensure deliverables on time and within budget

CUSTOMER



Energy Grids

Optimize the end-to-end infrastructure for Energy Grids

CUSTOMER

Global trends transforming the utilities sector

Industry trends require new business models



**Aging
Infrastructure**



**Decentralization of
Energy Generation**



**Renewable
Energy**



**Higher
Demand**



**Business
Paradigm Shift**

Connected Markets



Market Insights

Rural Areas

Urban Areas

“When wireless is perfectly applied the whole earth will be converted into a huge brain, which in fact it is, all things being particles of a real and rhythmic whole”

Nikola Tesla (1926)



Connected Markets

Frictionless Engagement and Commerce

CUSTOMER





You cannot escape the marketplace!



in your **HAND!**



in your **HOME!**



on the **GO!**

EVERYWHERE!!!



EVERYWHERE!!!





Market Insights

Interact in an all knowing digital or physical marketplace to provide an excellent all around personal experience

CUSTOMER



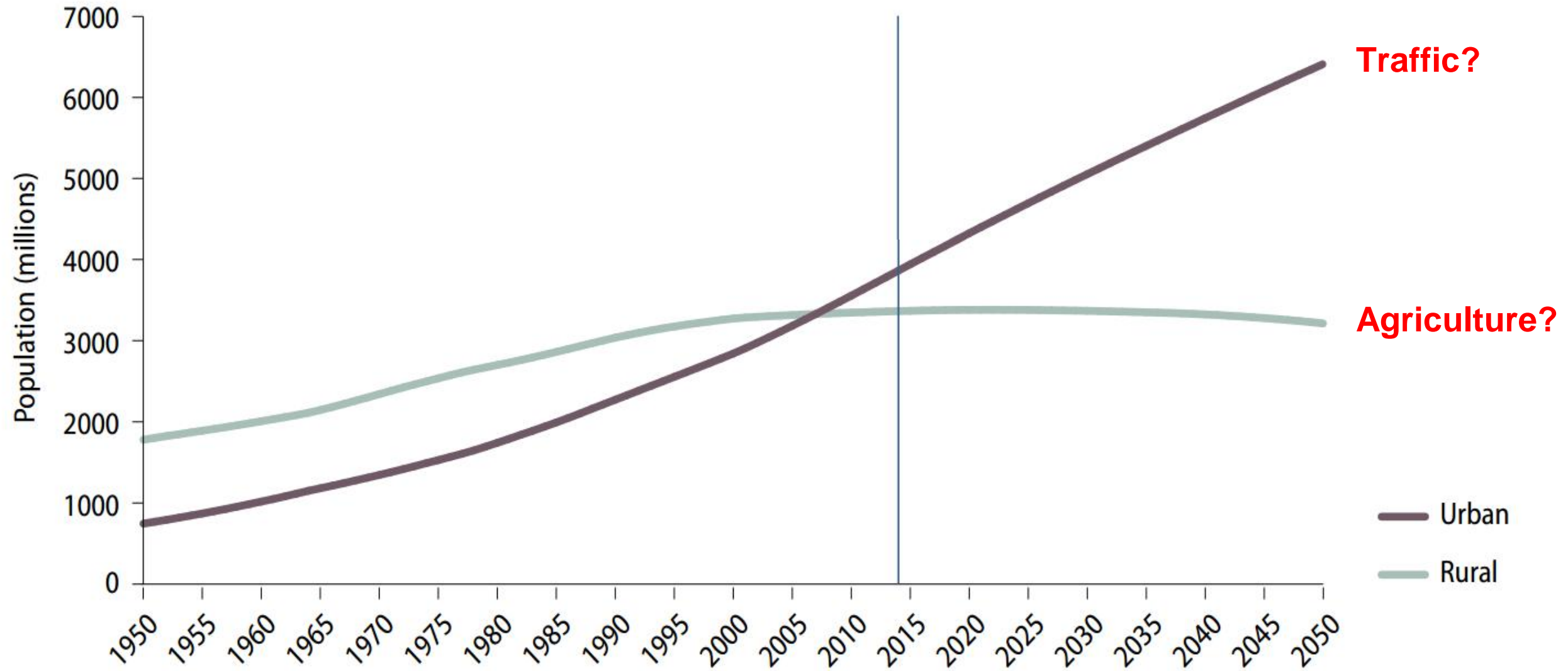
By 2050 the world population will **approach 10 billion people.**

Source: United Nations, World Population Prospects

Figure 2.

Urban and rural population of the world, 1950–2050

A majority of the world's population lives in urban areas





Rural Areas

Leverage the IoT in rural areas to drive agribusiness and transform to sustainably feed the world

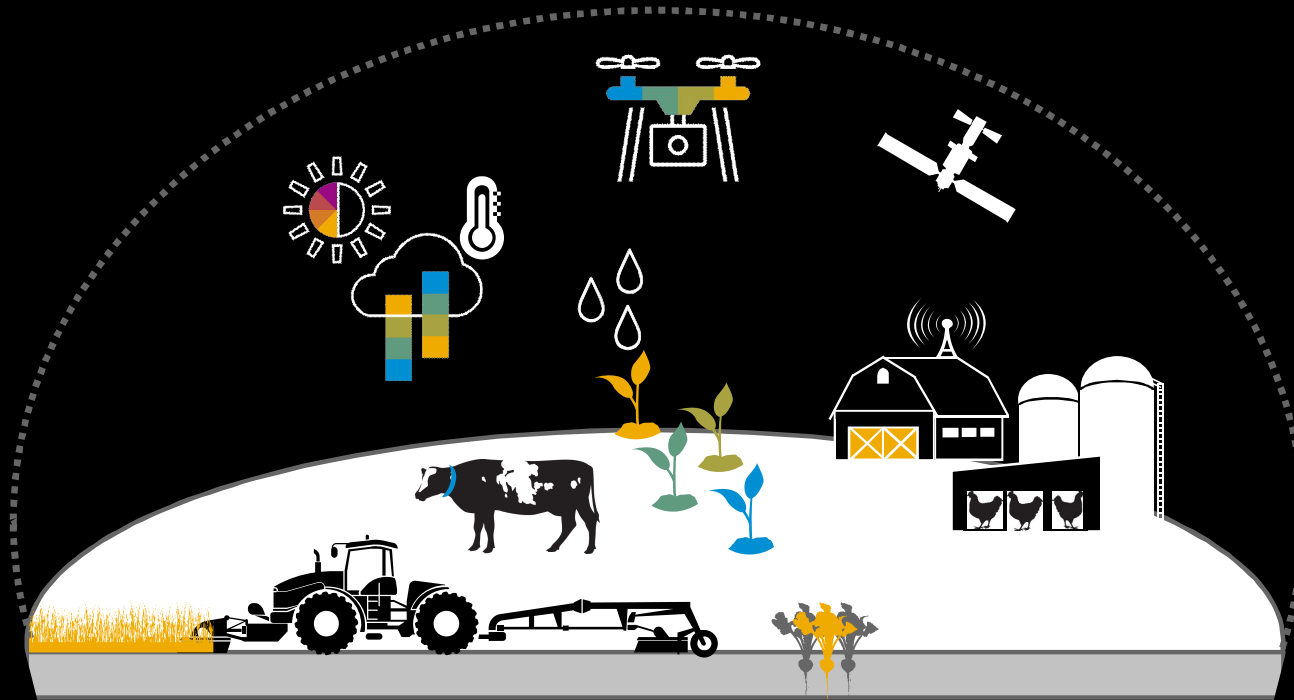
CUSTOMER

A close-up photograph of a person's hands harvesting rice in a field. The person is wearing a striped headscarf and a white long-sleeved shirt. They are using a wooden tool to separate the rice grains from the stalks, which are being placed into a large, woven bamboo basket. The background shows a lush green field under a clear blue sky.

Until 2050 **worldwide agricultural output needs to double** to feed the growing population.

Source: Food and Agriculture Organization (FAO) of the United Nations

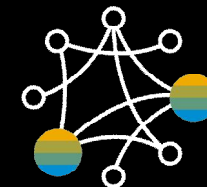
SAP Connected Agriculture enables precise digital farming processes



Connected to the Agricultural Internet of Things including smart machines, drones and robots to enable smart data collection and automation



Enable Insight creation and constant optimization of farming processes and practices by leveraging smart algorithms leveraging agricultural big data



Enable collaboration through standardization and open interfaces also allowing the ecosystem to develop into an open agribusiness network



Urban Areas

Optimize energy, vehicles, and assets across the footprint in urban areas

CUSTOMER

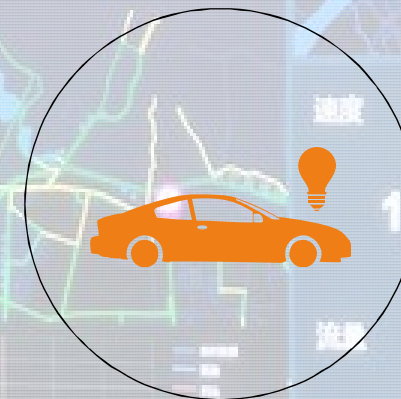
SAP Vehicles Network



**Deliver delightful consumer
mobility centric experiences
leveraging a business network**

Nanjing

Monitor real-time traffic status based on massive traffic data from a variety of sensors to support congestion control and traffic management.



Smart
Traffic



Connected People



People and Work

People and Health

People and Homes



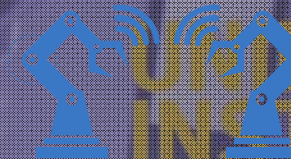
Connected People

Improve peoples' lives, work, and health by connecting them with communities to advance lifestyles

CUSTOMER

GUIDED INSTRUCTIONS

Bring another dimension to your work life. SAP Augmented Reality Apps untether your backend systems so you can work hands-free – in the office or in the field.



Augmented Worker

- 1. Insert Code 72 into circuit panel
- 2. Initiate Relay
- 3. Deselect Circuit 3a, 3c & 3d
- 4. Disconnect Cable
- 5. Remove Part #25DS-3a from mount



Connected People

Workers in Real Time Environments, avoiding Risk and ensuring Health and Safety

CUSTOMER

The Connected Worker as a “Thing”



accelerometer
gyroscope
magnetometer
localization
proximity sensor
light sensor
barometer
thermometer
pedometer
heart rate monitor
fingerprint sensors
detecting harmful radiation



\$\$\$



4%

of Global GDP is the cost of
occupational injuries and illnesses



483,300

occupational injuries and illnesses
in US manufacturing annually



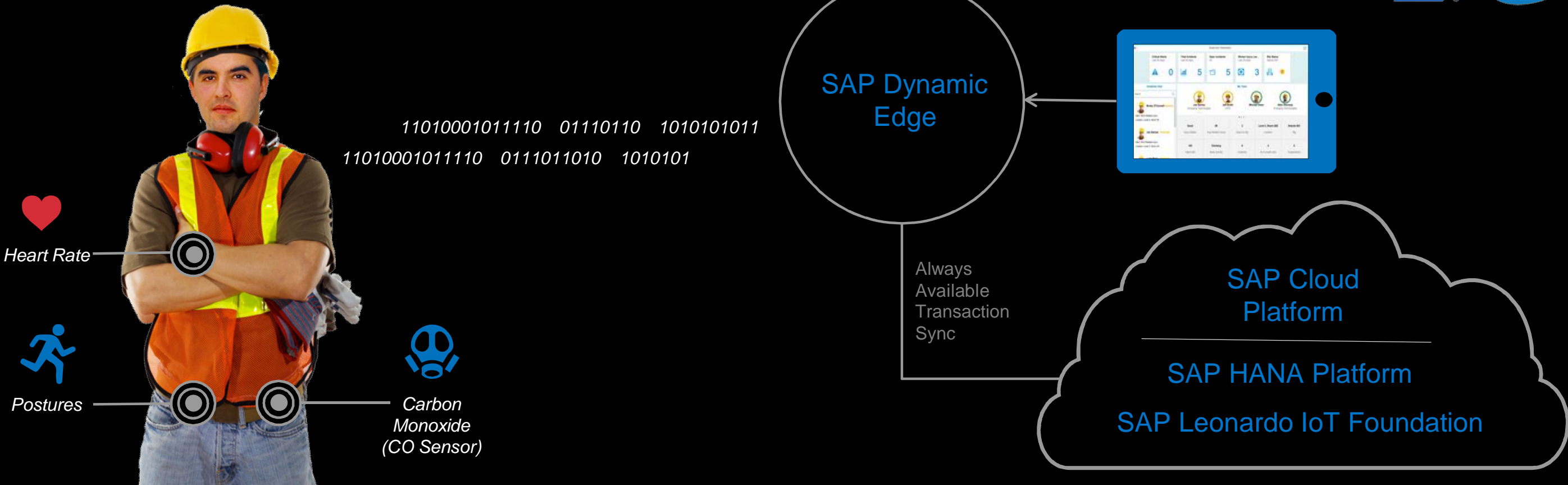
\$88.5

billion annual employer
Worker's Compensation costs

Source:
LNS Research

Connected Worker (Environment, Health and Safety)

Meet Joe Santos
An Industrial Worker operating in dangerous conditions





Connected People Building a Connected Health Network

CUSTOMER



Connected People Making Homes Efficient, Secure and Comfortable

CUSTOMER

CONNECTED LIVING

CIRCA 2020s

Research by the Pew Internet Project finds that experts are united in the expectation that embedded and wearable technology will comprise the next revolution in digital technology. Across homes, workplaces and cities, a global, immersive, invisible, ambient networked computing environment built through the continued proliferation of smart sensors, cameras, software, databases, and massive data centres in a world-spanning information fabric known as the internet of things.

Strategic research consultancy, Frost & Sullivan forecasts the market potential of this 'connected living' paradigm at **USD\$731 billion** into the next decade.



31% \$111 Billion Connected home



Health
\$20Bn

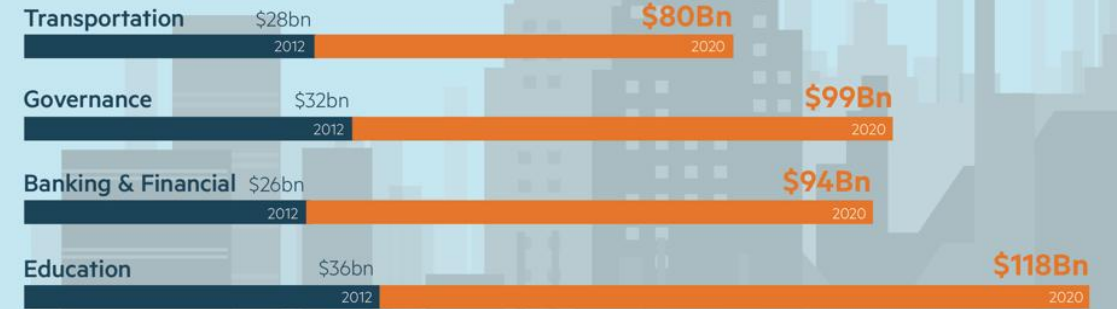
Energy
\$8Bn

Media and Entertainment
\$76Bn

Automation and control
\$5Bn

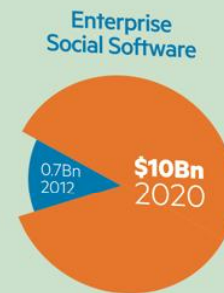


54% \$392 Billion Connected city



25m
Cloud servers

15% \$228 Billion Connected work



3.7Bn
Smartphones

SAP Leonardo IoT product innovations

Product road maps published on www.sap.com/roadmaps are linked. The other product road maps are included in the following slides.

SAP Leonardo IoT Bridge

Connected products

- SAP Advanced Track and Trace for Pharmaceuticals*
- [SAP Ariba Sourcing](#) (part of SAP Ariba Procurement application suite road map)
- [SAP Ariba Supply Chain Collaboration](#) (part of Ariba Network road map)
- SAP Connected Goods
- [SAP Engineering Control Center](#)
- [SAP Hybris Billing](#)
- [SAP Integrated Business Planning for response and supply](#) (part of integrated business planning road map)
- [SAP Product Lifecycle Costing](#)
- [SAP Supply Chain Control Tower](#) (part of SAP Integrated Business Planning road map)

Connected assets

- [SAP Asset Intelligence Network](#)
- [SAP Distributed Manufacturing](#)
- [SAP Digital Manufacturing Insights](#)
- [SAP Manufacturing Execution](#)
- [SAP Manufacturing Integration and Intelligence](#)
- [SAP Plant Connectivity](#)
- [SAP Predictive Maintenance and Service – on-premise edition](#)
- [SAP Predictive Maintenance and Service – cloud edition](#)

Connected fleet

- SAP Advanced Track and Trace for Pharmaceuticals*
- [SAP Asset Intelligence Network](#)
- [SAP Extended Warehouse Management](#)
- [SAP Predictive Maintenance and Service – on-premise edition](#)
- [SAP Predictive Maintenance and Service – cloud edition](#)
- SAP Vehicle Insights
- SAP Yard Logistics*
- TwoGo by SAP

Connected infrastructure

- [SAP Asset Intelligence Network](#)
- SAP Advanced Track and Trace for Pharmaceuticals*
- [SAP Ariba Procurement application suite](#)
- SAP Connected Parking
- [SAP Manufacturing Integration and Intelligence](#)
- [SAP Predictive Maintenance and Service – on-premise edition](#)
- [SAP Predictive Maintenance and Service – cloud edition](#)
- SAP Yard Logistics*

Connected markets

- SAP Connected Goods
- SAP Connected Parking
- [SAP Customer Activity Repository](#) (part of SAP for Retail road map)
- Intelligent traffic management** and traffic congestion management**
- [SAP Predictive Maintenance and Service – on-premise edition](#)
- [SAP Predictive Maintenance and Service – cloud edition](#)
- SAP Vehicle Insights
- SAP Vehicles Network
- SAP Yard Logistics*

SAP Leonardo IoT Foundation and SAP Leonardo IoT Edge

- [SAP Cloud Platform](#)
- SAP Dynamic Edge Processing
- SAP Edge Services
- SAP IoT Application Enablement

*Focused business solution (SAP Innovative Business Solutions offering)

**Repeatable custom solution (SAP Innovative Business Solutions offering)

This is the current state of planning and may be changed by SAP at any time.

SAP Leonardo Internet of Things Bridge

Connected Products



Product Insights

Goods and Equipment

Supply Networks

Connected Assets



Fixed Asset Insights

Manufacturing Execution

Manufacturing Networks

Connected Fleet



Mobile Asset Insights

Logistics Safety

Logistics Networks

Connected Infrastructure



Building Insights

Construction

Energy Grids

Connected Markets



Market Insights

Rural Areas

Urban Areas

Connected People



People and Work

People and Health

People and Homes

SAP Leonardo
Edge
Computing

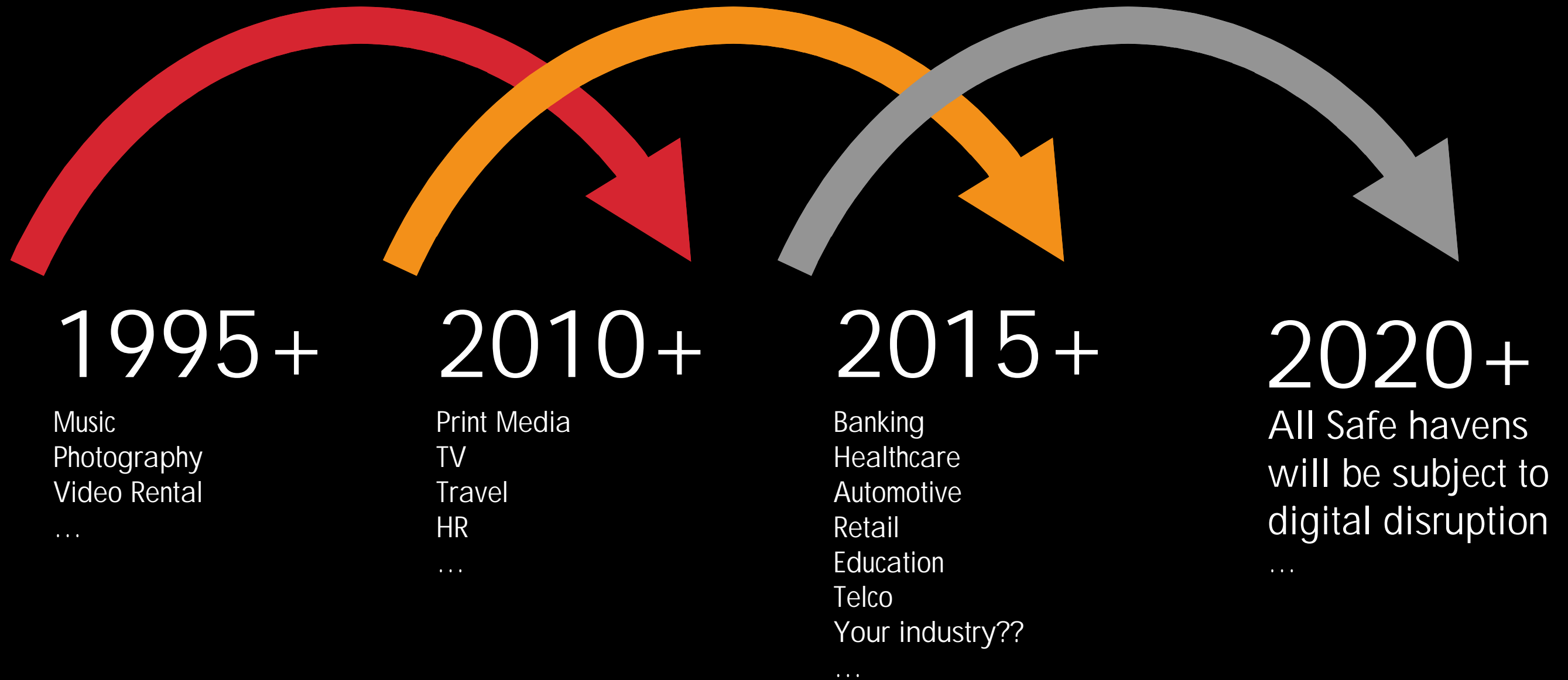
SAP Leonardo Internet of Things Foundation

SAP Cloud Platform / SAP HANA Platform



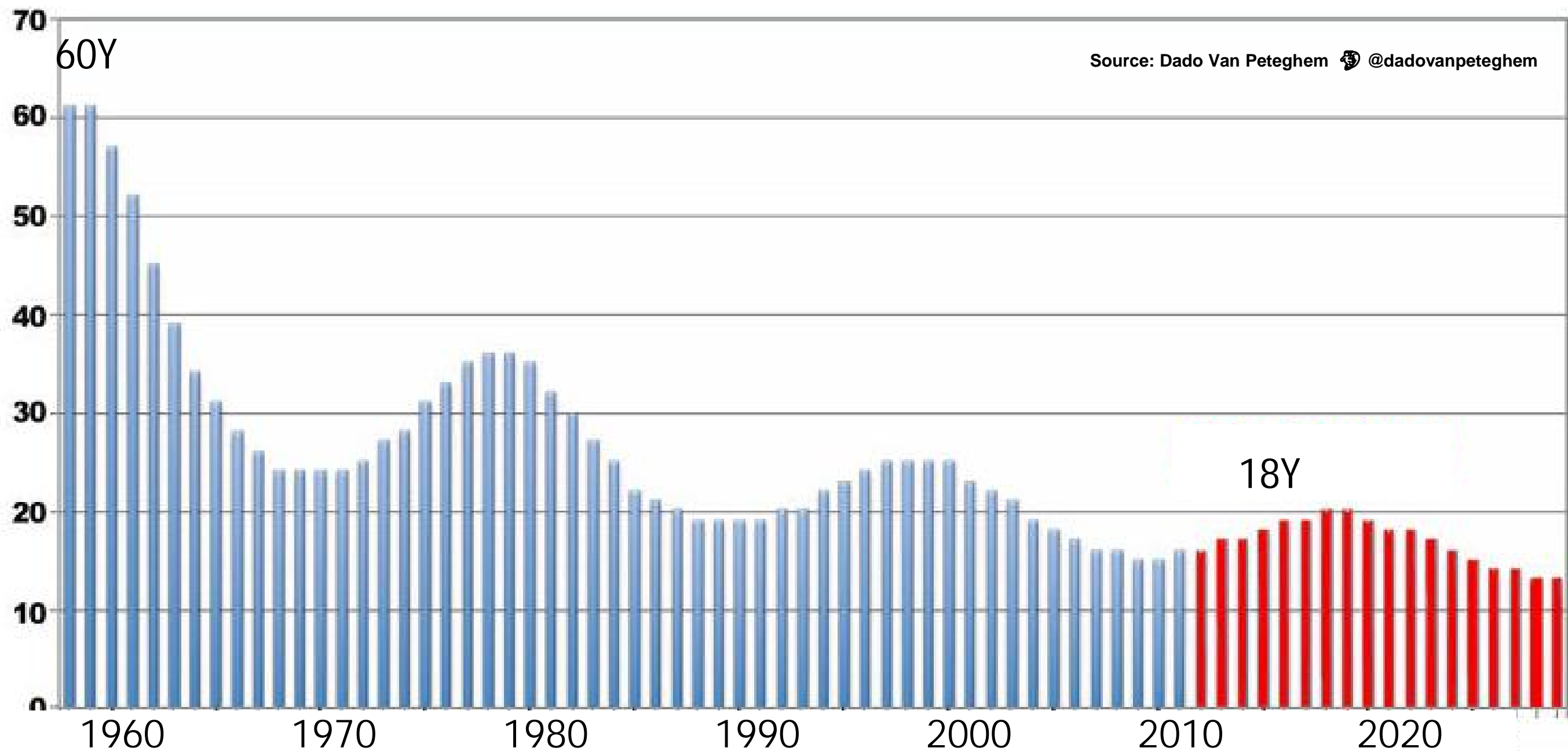
**Digital is becoming
Business Critical**

Waves of Digital Disruption



Source: Dado Van Peteghem 🐼 @dadovanpeteghem

Average Company Lifespan on S&P 500 Index

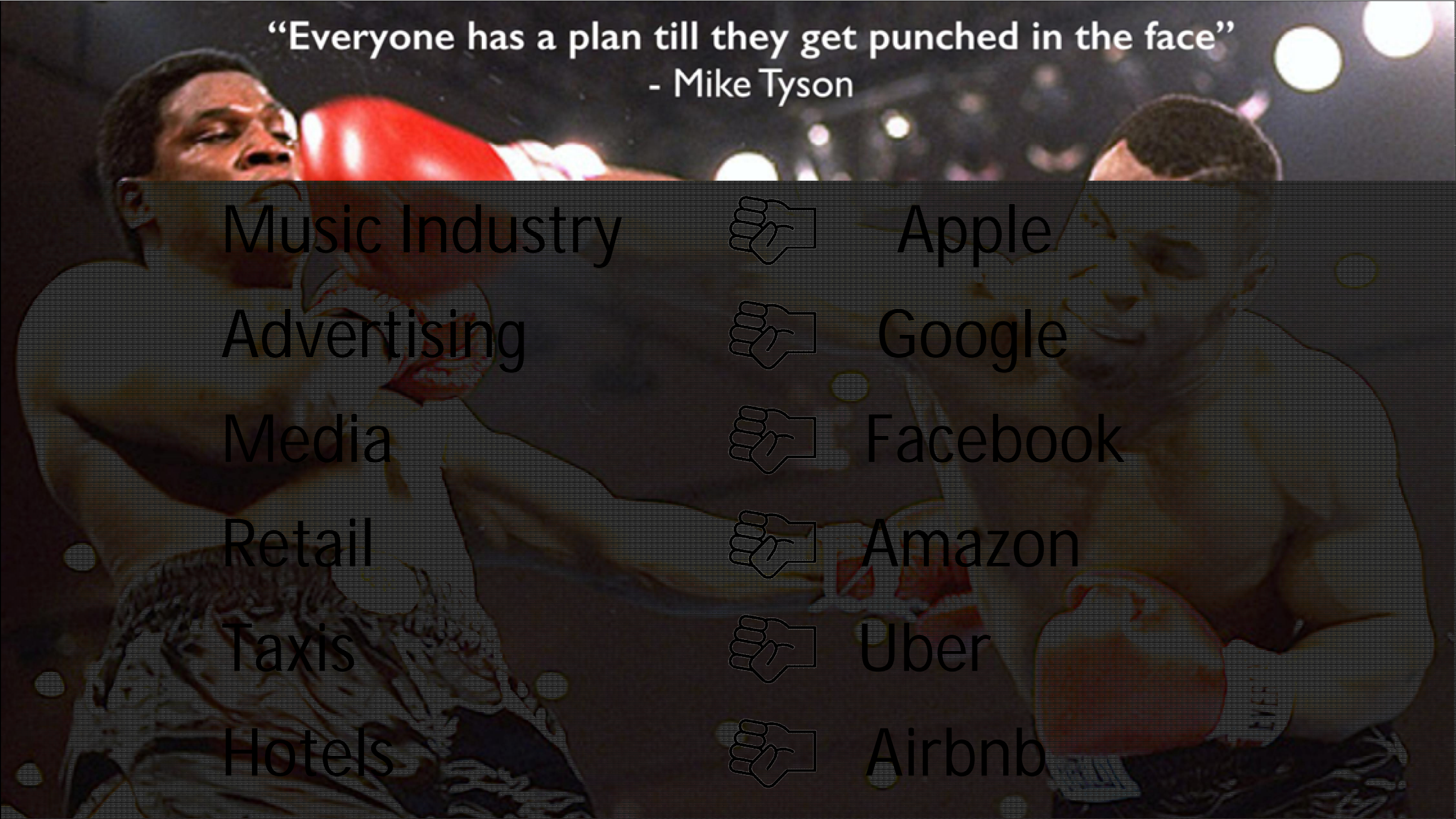


**Your biggest
competitor is
probably not
on your radar.**



“Everyone has a plan till they get punched in the face”
- Mike Tyson



A background image of Mike Tyson in a boxing ring, wearing red boxing gloves and a white boxing mask, looking towards the camera. The image is dark and grainy, with bright lights visible in the background.

“Everyone has a plan till they get punched in the face”
- Mike Tyson

Music Industry



Apple

Advertising



Google

Media



Facebook

Retail



Amazon

Taxis



Uber

Hotels



Airbnb

DATA is the new OIL!

THE LARGEST COMPANIES BY MARKET CAP

The oil barons have been replaced by the whiz kids of Silicon Valley



Top 5 Publicly Traded Companies (by Market Cap)



Tech

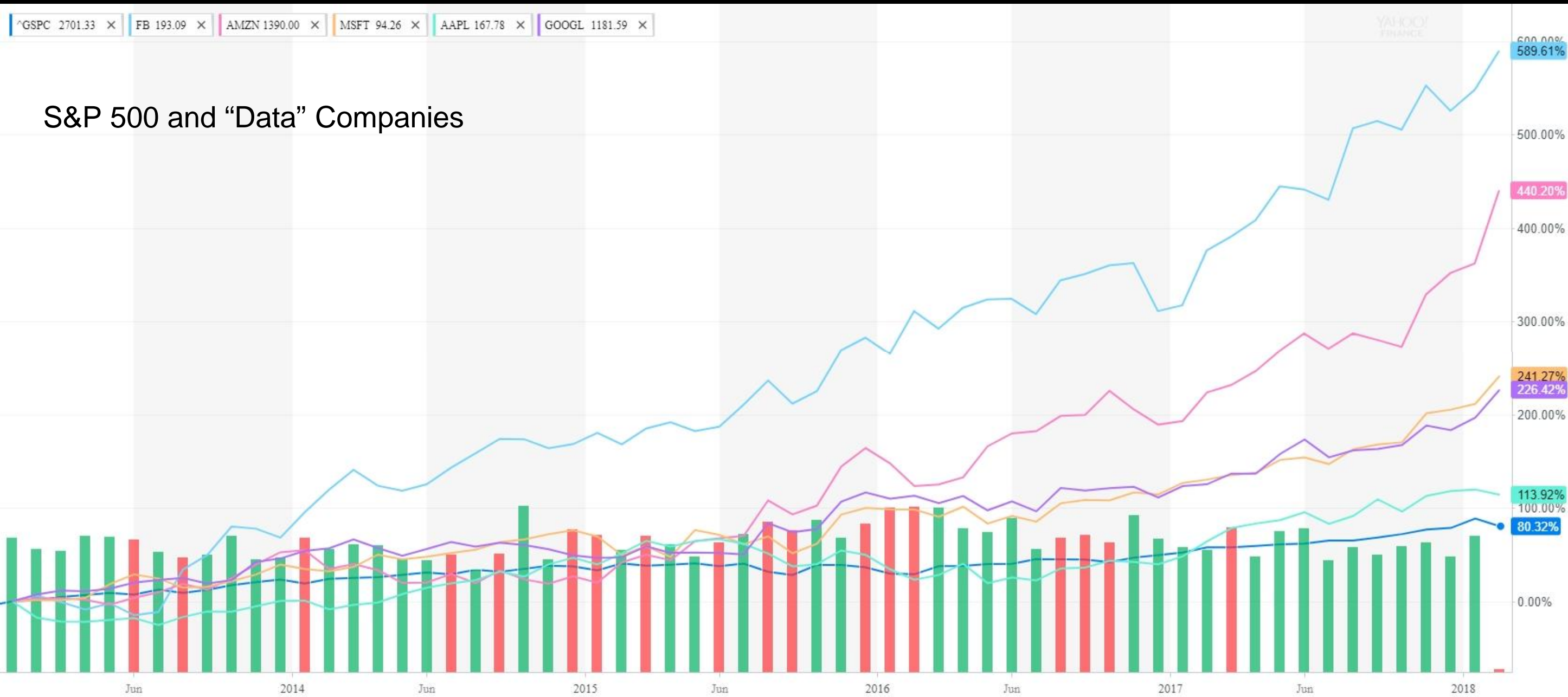


Other



DATA is the new OIL!

S&P 500 and “Data” Companies



The Elements of Digital Business circa 2017



“Culture eats strategy for breakfast”
- Peter Ferdinand Drucker

Note: The processes of digital business not shown



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Digital Enterprises close the loop from “Things to Outcomes”
for customers/consumers/citizens

Digital Enterprises synchronize “shop floor and top floor” for
employees/partners

Digital Enterprises create “digital” products and services
leveraging Design Thinking

Digital Enterprises work within and leverage an ecosystem

Digital Enterprises will reshape society, the economy and the
environment disproportionately

SAP Internet of Things Community

SAP HANA is the data platform SAP knew would unlock the Internet of Things. With billions of connected devices, we now have the potential to reshape society, the economy and the environment. Only SAP empowers businesses to innovate from the core to the edges to the networks to get from Things to Outcomes.

Join us on this community to engage, interact and educate each other about the IoT.

THE Community for SAP Leonardo Internet of Things on the Public Web

<https://www.sap.com/community/topic/internet-of-things.html>



Warehouse Automation Using Drones

Supply chains face constant pressure to do more with less. According to survey, customer pricing pressure (51%), demands for faster response times (50%), and rising customer service expectations (49%) are the...

December 1, 2016
[Alex Liu](#)



The Secret of Santa's Supply Chain

We're approaching the time when Santa — founder, chairman, and CEO of Santa Claus Toy Manufacturing and Distribution Corp. — manages to ship billions of toys in a single day, all with guaranteed overnight delivery...

See also

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Thank you.



Pushkar Ranjan
SAP Internet of Things
San Francisco Bay Area | Computer Software

Current SAP
Previous SAP, Microsoft, Wipro Infotech
Education Stanford University

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 <https://www.linkedin.com/in/pushkarranjan>

The image shows a screenshot of a LinkedIn profile for Pushkar Ranjan. On the left is a profile picture of a man in a dark suit and light blue shirt. To the right of the photo, the name 'Pushkar Ranjan' is displayed in bold, followed by 'SAP Internet of Things' and 'San Francisco Bay Area | Computer Software'. Below this, a list of work and education history is shown: 'Current' as 'SAP', 'Previous' as 'SAP, Microsoft, Wipro Infotech', and 'Education' as 'Stanford University'. A blue button with the text 'Send a message' and a downward arrow is positioned below the history. At the bottom of the profile section, there is a dashed line and a link to the profile page, preceded by the LinkedIn logo.