From Smart Items to successful business models – value adding solutions with the Internet of Things (IoT)

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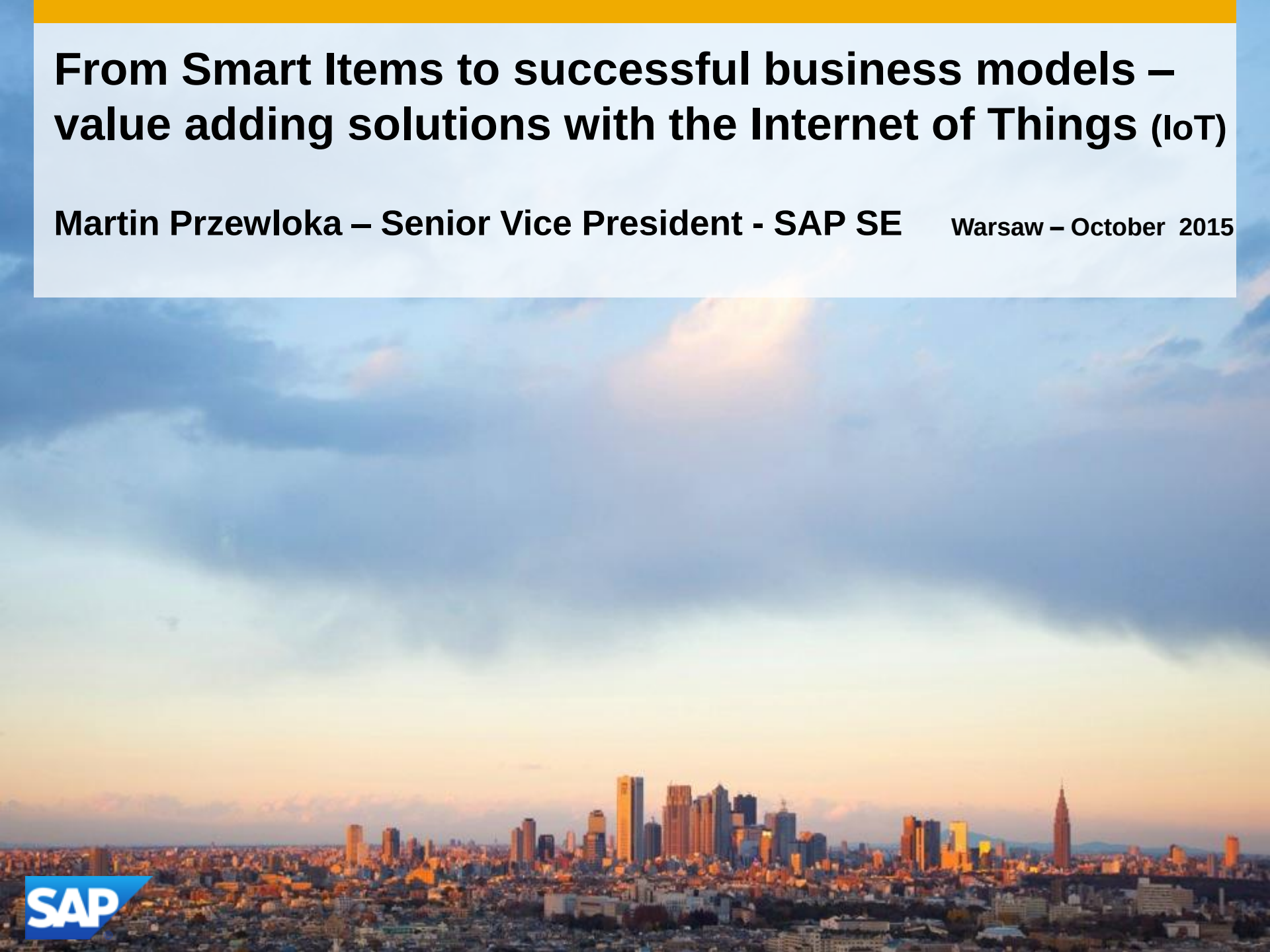
Warsaw – October 2015



Disruptive technologies offer significant potential to drive business innovation

Cloud

> 80% of all future software solutions will be deployed in the cloud

Mobile

The new de facto standard in business interaction

Social

Connected business and social networks

Big Data

Real-time analytic for behavioral and predictive insights

> More than 60% of CEOs expect **15-50% of their earnings growth** in the next 5 years to come from technology-enabled business innovations.
>
> *– McKinsey study, 2013*

Disruptive technologies offer significant potential to drive business innovation

Cloud

Abundance of cost-effective computational power and storage

Mobile

The new de facto standard in business interaction

Social

Connected business and social networks

Big Data

Real-time analytic for behavioral and predictive insights

‘real-time’!

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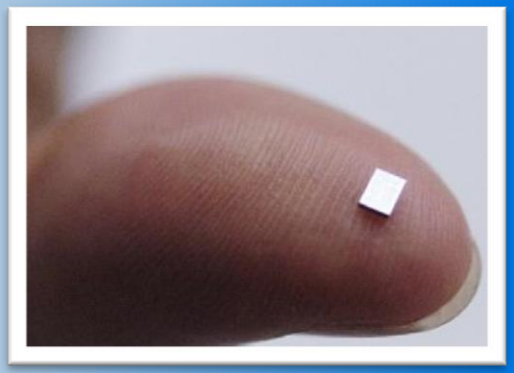
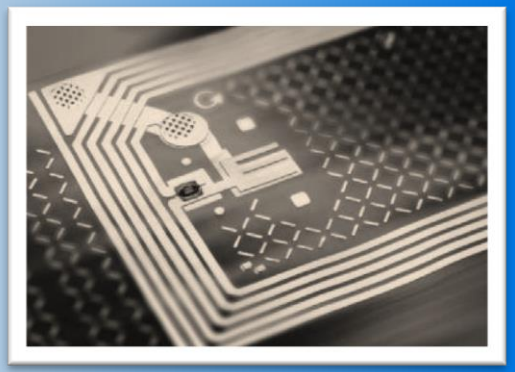
Internet of Things
Smart Items and beyond!

- **Increasing Sensing, Actuating, and Computing Capabilities**



  - **Real world awareness: identity, location and sensory information**
  - **Enhanced business logic on the item**

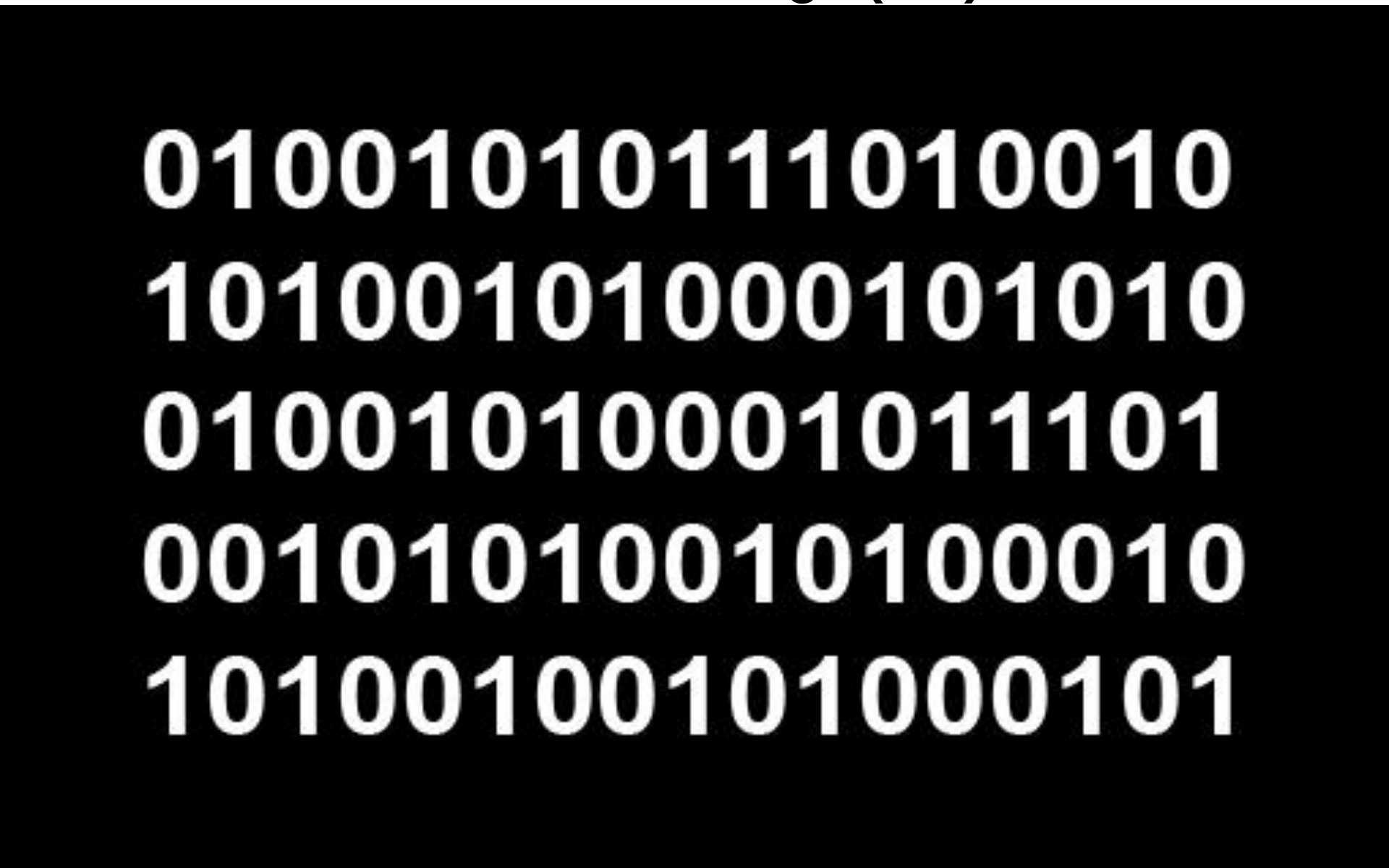
- **Increasing Connectivity Capabilities**



  - **Increasing connectivity with environment**
  - **Increasing connectivity to information systems**

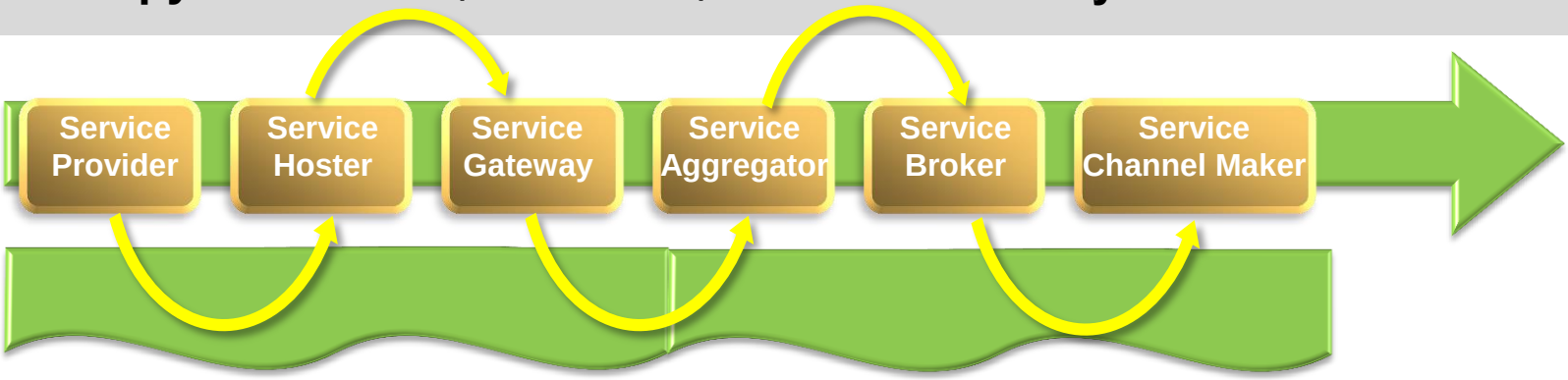
Discrete everyday objects in the real world become smart items!

Fundamental Building Blocks of the Internet of Things (IoT)



Fundamental Building Blocks: Service Tranformation Internet of Things (IoT) plus Internet of Services (IoS)

Products	*- >*	*Services*
Software licence	(Adobe, Microsoft, SAP, ….)	Software as a Service
airplane (engine)	(GE, Pratt&Whitney, …)	‘Power by the hour’
Drilling machine	(Hilti)	Drill hole
Food	(Nestlé)	Health, Wellness
Footwear	(selve AG, Nike)	Personalized shoes
Drugs, Med. Therapy	(health insurances)	‘Pay for Performance’



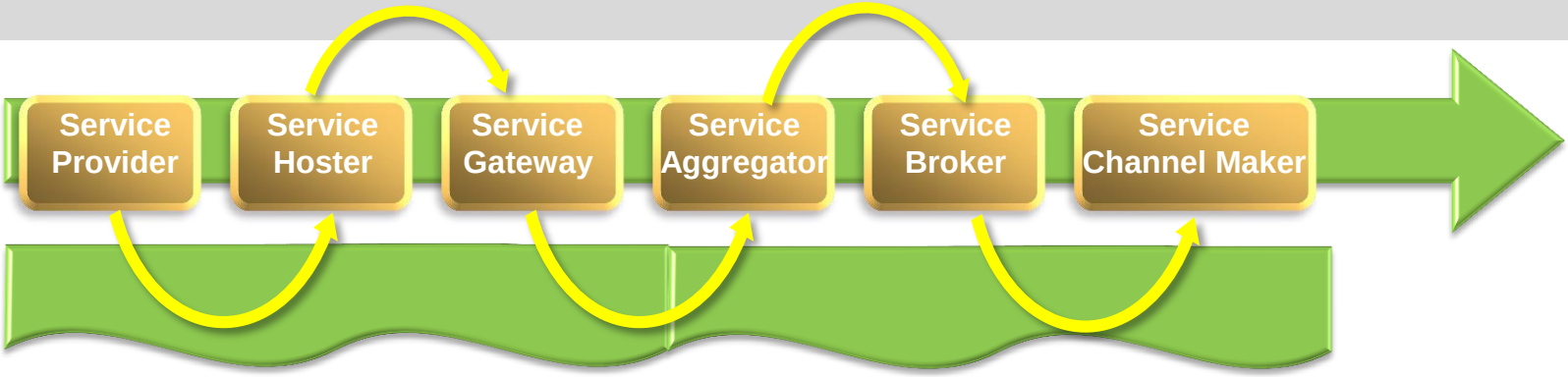
Service Delivery Supply Chain

Fundamental Building Blocks: Service Tranformation Internet of Things (IoT) plus Internet of Services (IoS)

Products **- >** ***Services***

from **'we bring good things to life' to 'industrial machines in the cloud'**

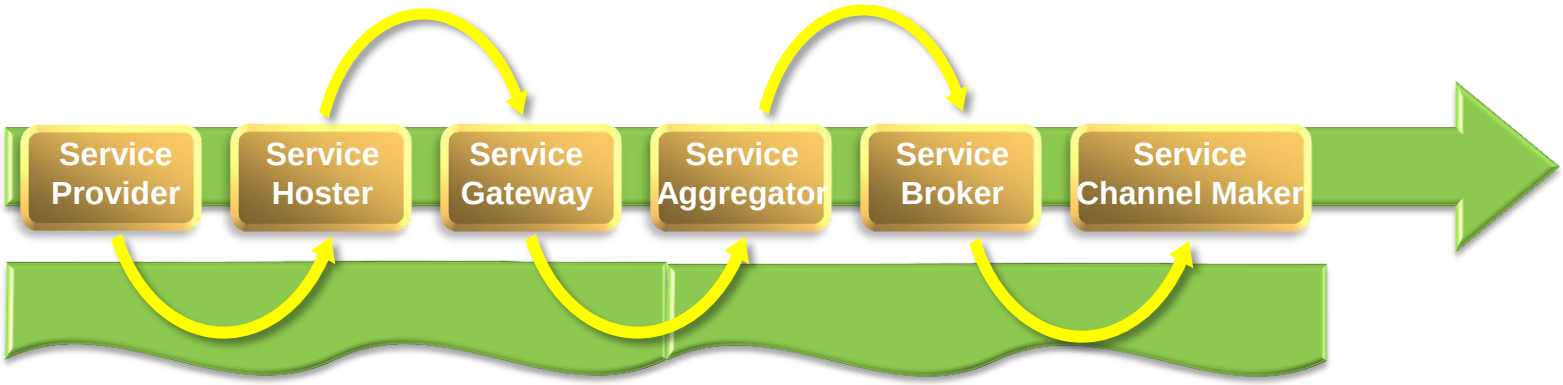
compressed air mobility indoor climate
safety light wellness
arts lifestyle furnishings
entertainment etc.



Service Delivery Supply Chain

Key element: Services => Service Transformation

- **Complementing products by services - turning products into services**
- **Service Transformation requires:**
  - Services can be described (technical, operational, business)
  - Services can be easily developed, maintained and deployed
  - Services can be found, exchanged, combined, traded, ….



Service Delivery Supply Chain

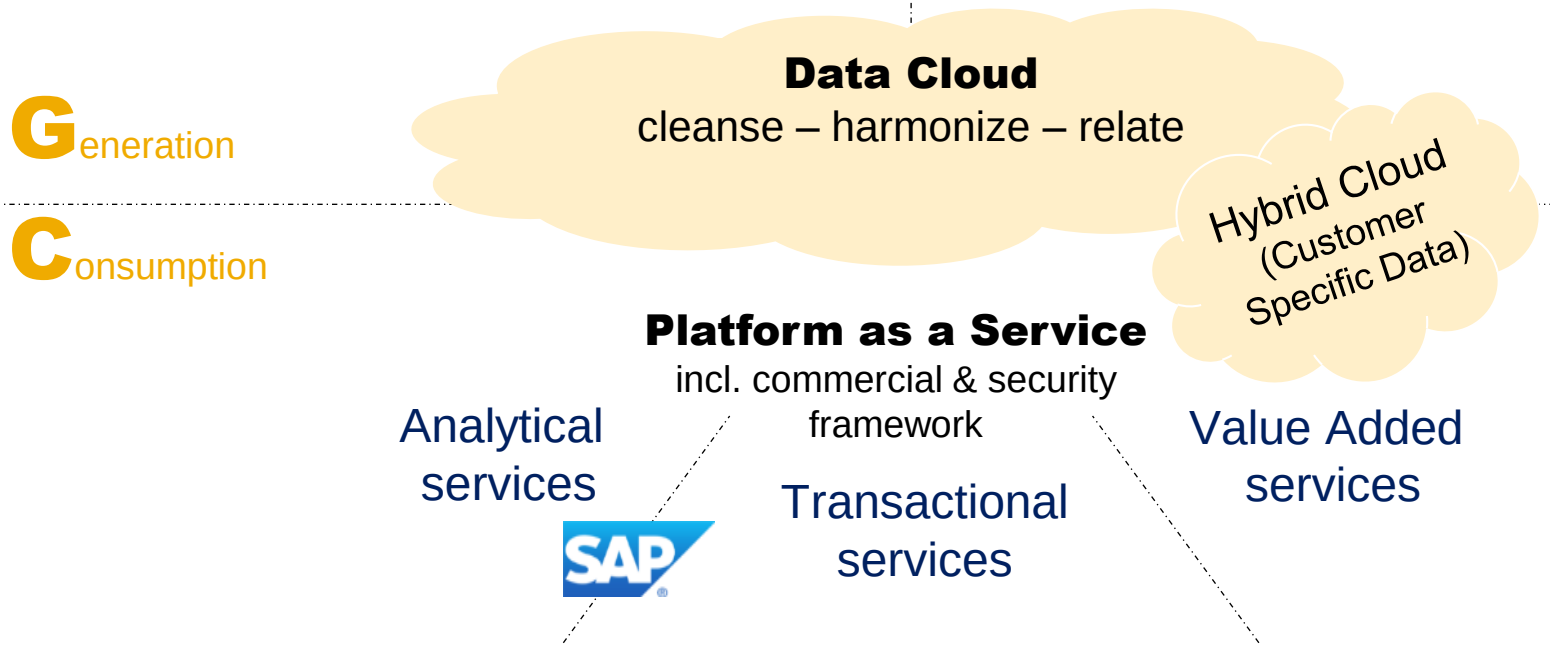
Fundamental Building Blocks: Data (Big Data)

Primary Data Sources

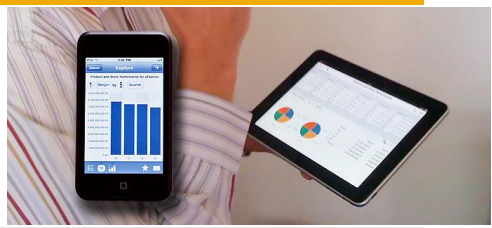
- Structured (business) data
- 'Beyond own reach'
- New business models for data owners
- Examples: manufacturing, medicine, retail, financial services

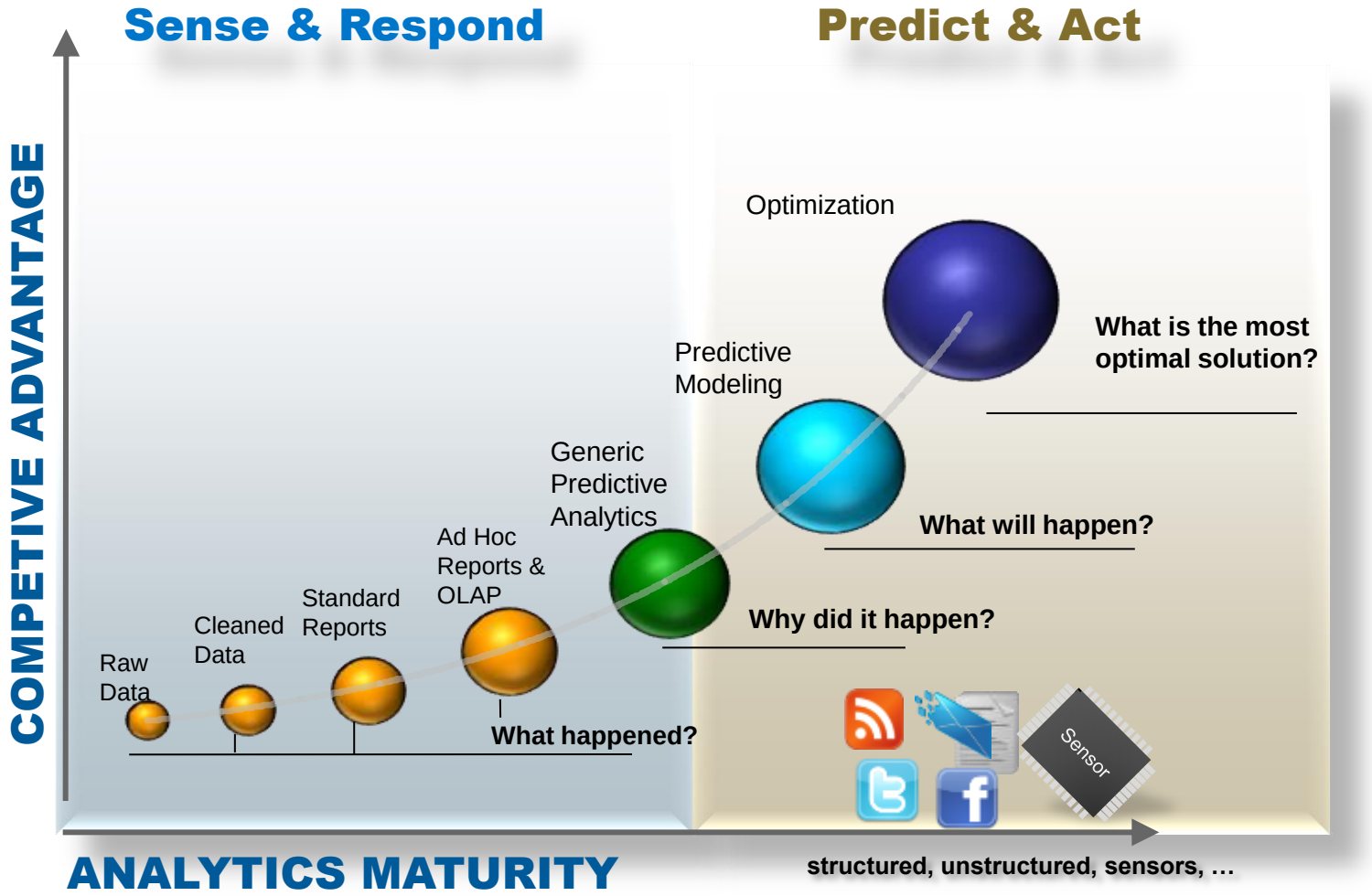
Secondary Data Sources

- Ususally unstructred
- Publicly available
- Examples: bulletin-boards, search logs, ,meta data



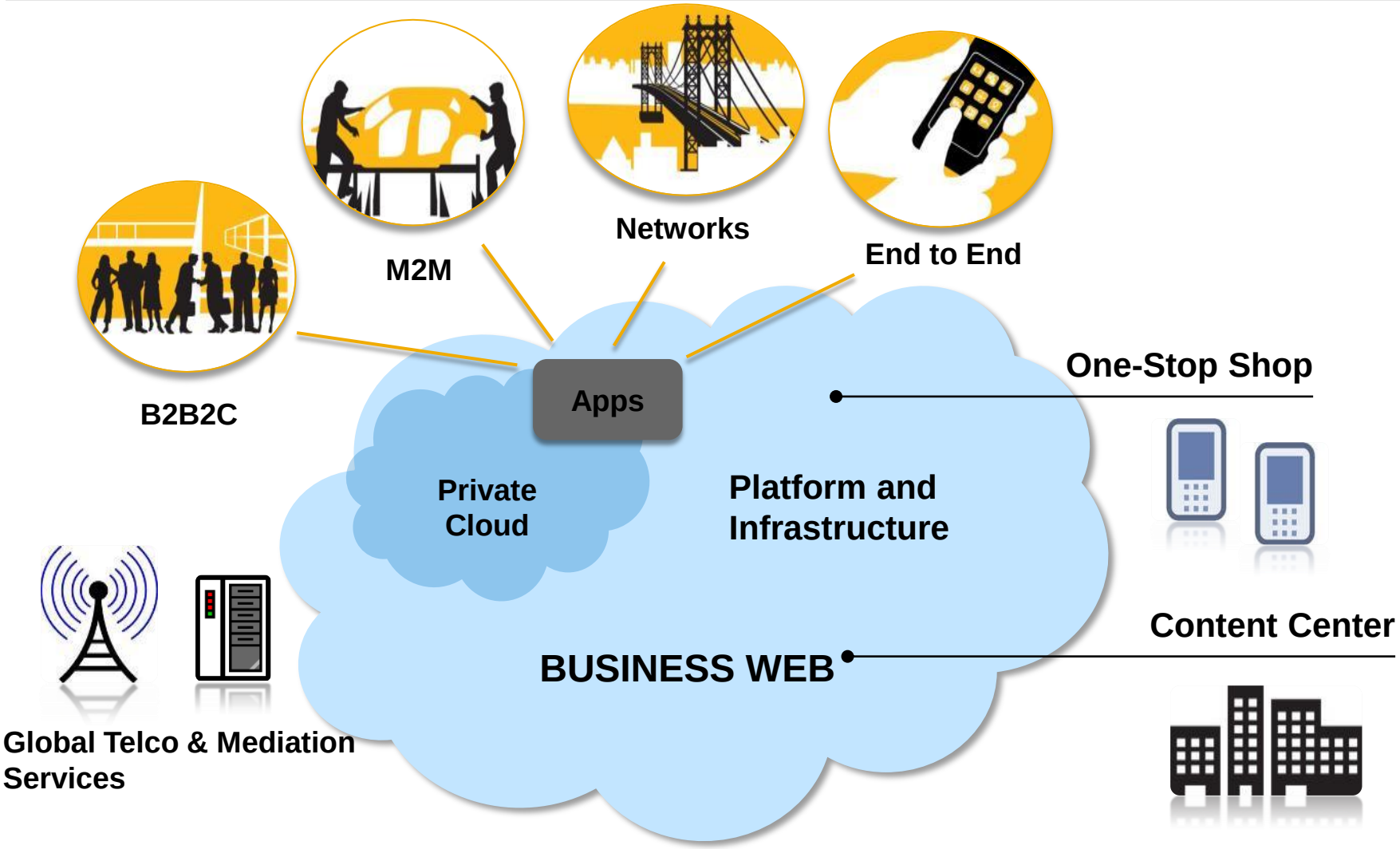
Fundamental Building Blocks: Analytics





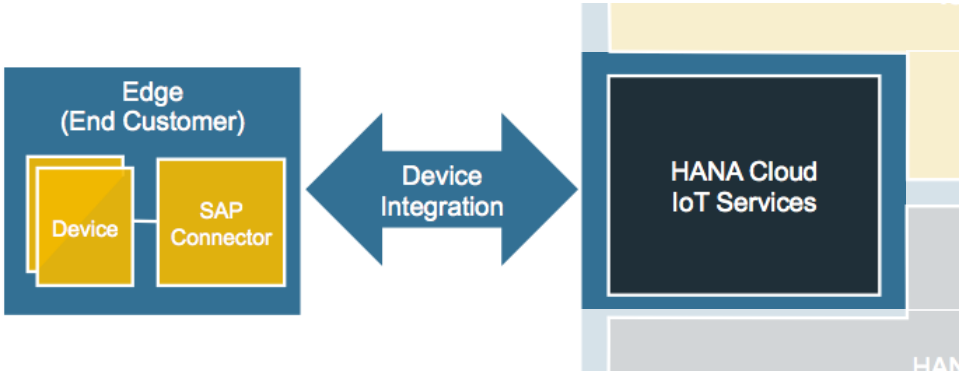
Key: all data are processed in real-time!

Fundamental Building Blocks: Infrastructure (Cloud)



Example: SAP HANA Cloud Platform (HCP) Internet of Things (IoT) Services

SAP HANA Cloud Platform Internet-of-Things (IoT) Services enable customers and partners to develop, customize and operate **IoT business** applications in the cloud.

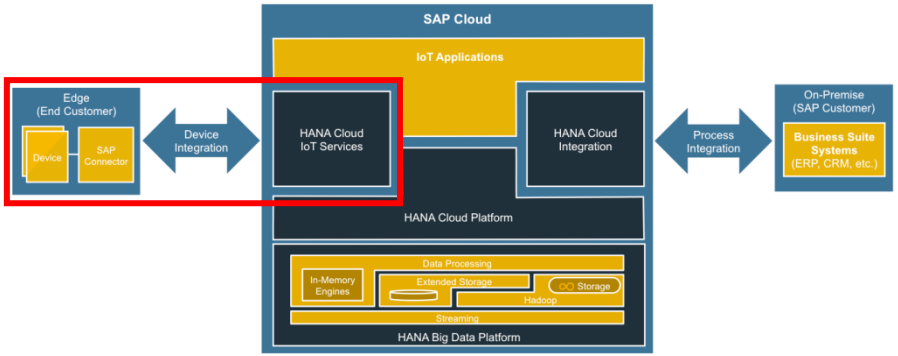


Use cases

- Remote Device Management
- Message Management
- IoT Application Enablement

Key differentiators

- The end-to-end IoT platform enabling thing-driven business processes
- Leverages SAP HANA Big Data Platform – scaling with your needs from small to large
- Offers strong edge platform

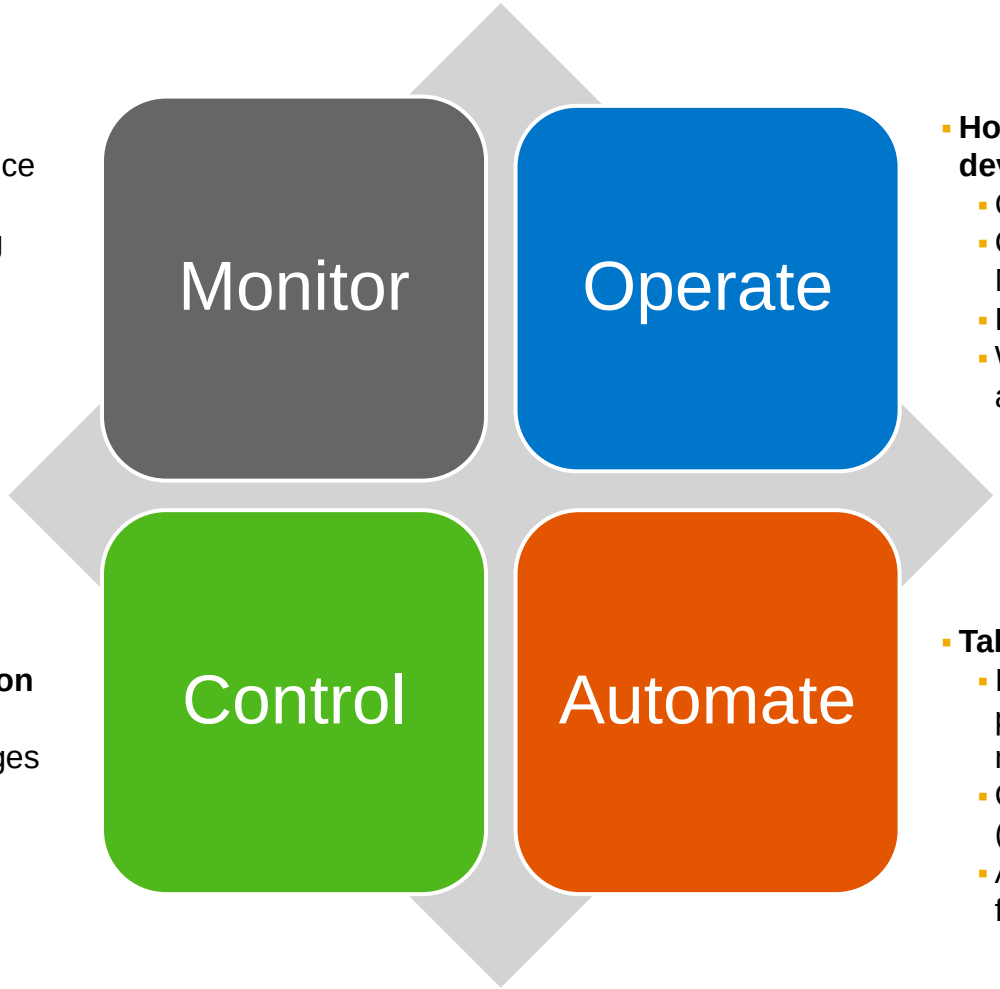


Target groups

- Customers
- Partners

Fundamental Building Blocks: Business Process Automization

- **What did happen**?
  - Usage & Performance
  - Wo ist was?
  - Event-Registrierung



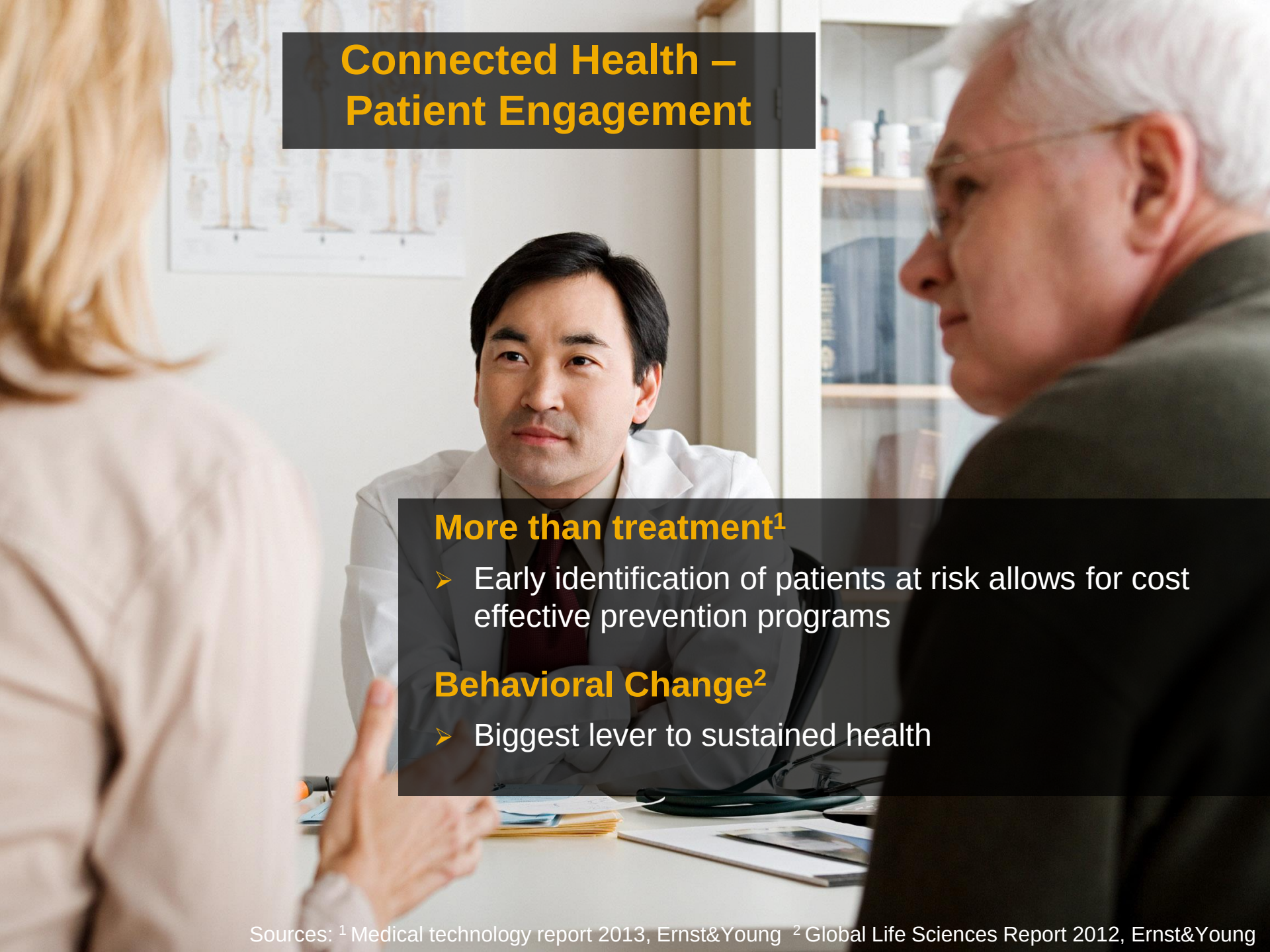
- **How to operate 1000+ devices/components?**
  - Configuration mg
  - Current status of device (e.g. M2M module)
  - Logistics
  - Which components are active/inactive?

- **Status change/ Condition modification**
  - Active/inactive
  - Configuration changes

- **Take action**
  - Integration with backend processes (e.g. order management)
  - Optimization (algorithms)
  - Automat. Triggering of follow ups

The way to new Business Models: Examples

Connected Health – Patient Engagement



More than treatment[1]

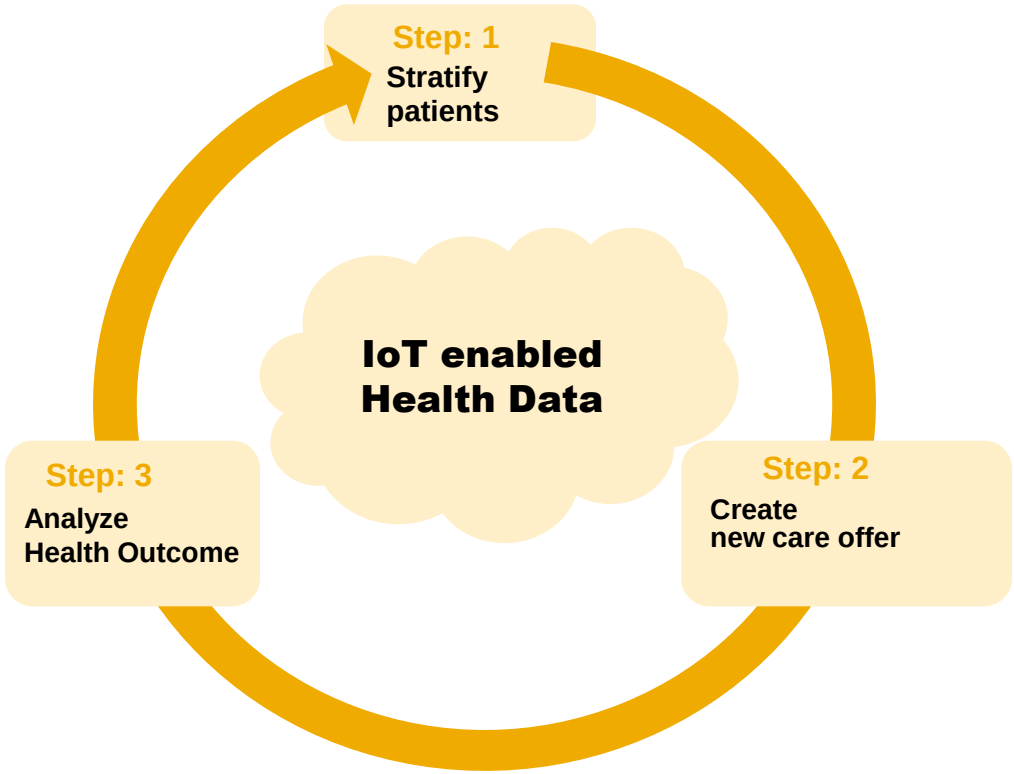
- Early identification of patients at risk allows for cost effective prevention programs

Behavioral Change[2]

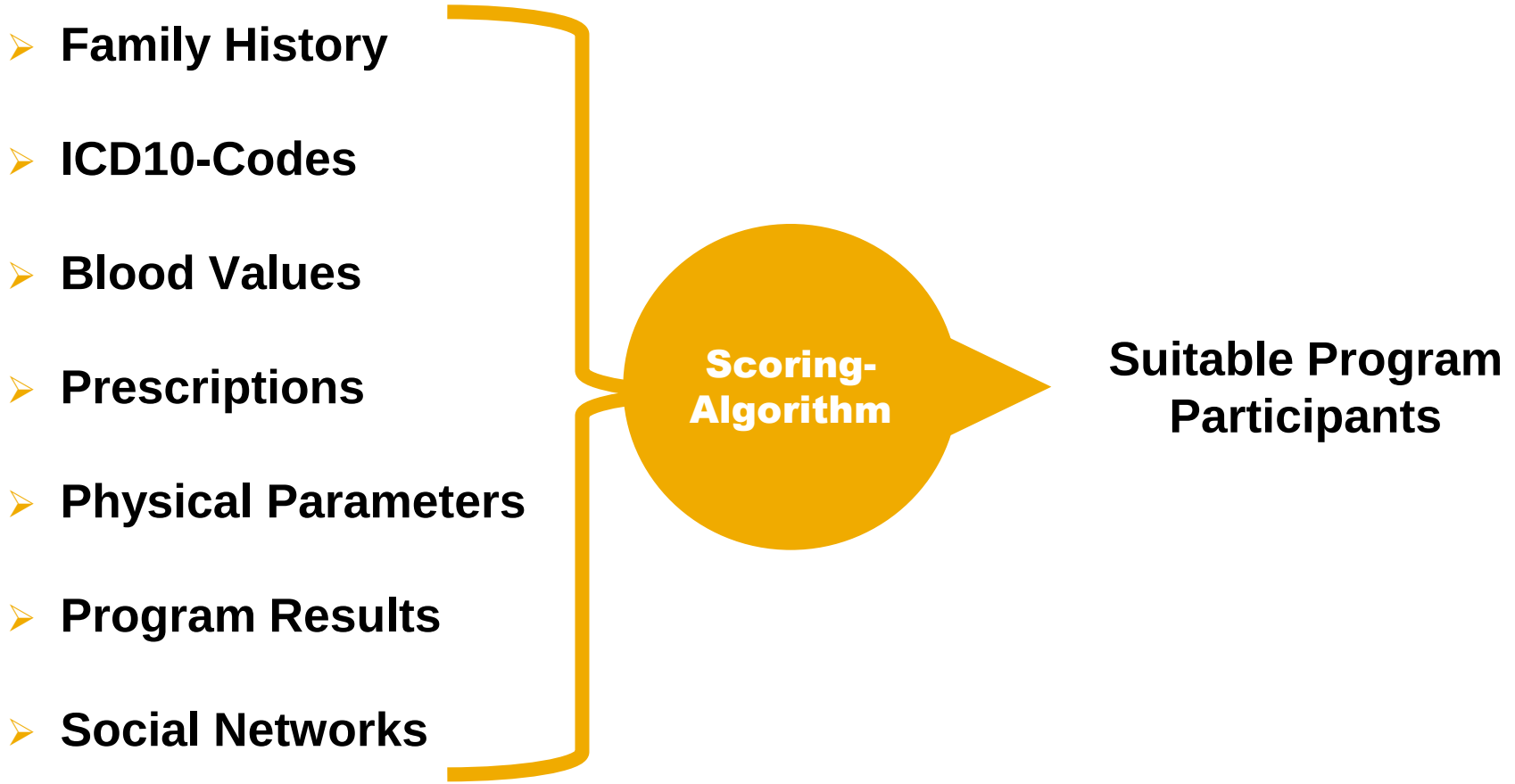
- Biggest lever to sustained health

Sources: [1] Medical technology report 2013, Ernst&Young [2] Global Life Sciences Report 2012, Ernst&Young

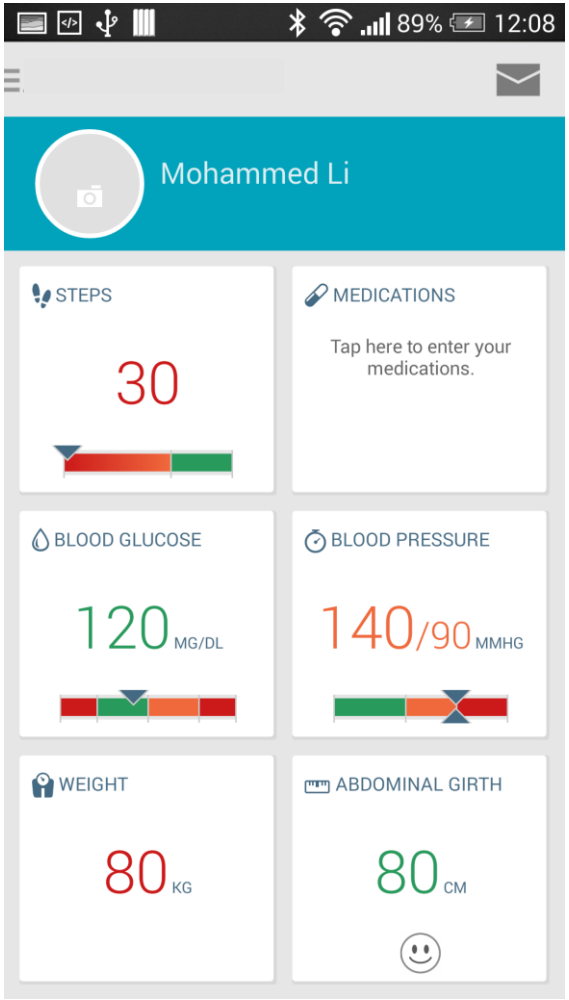
Vision: Integrated Care Process

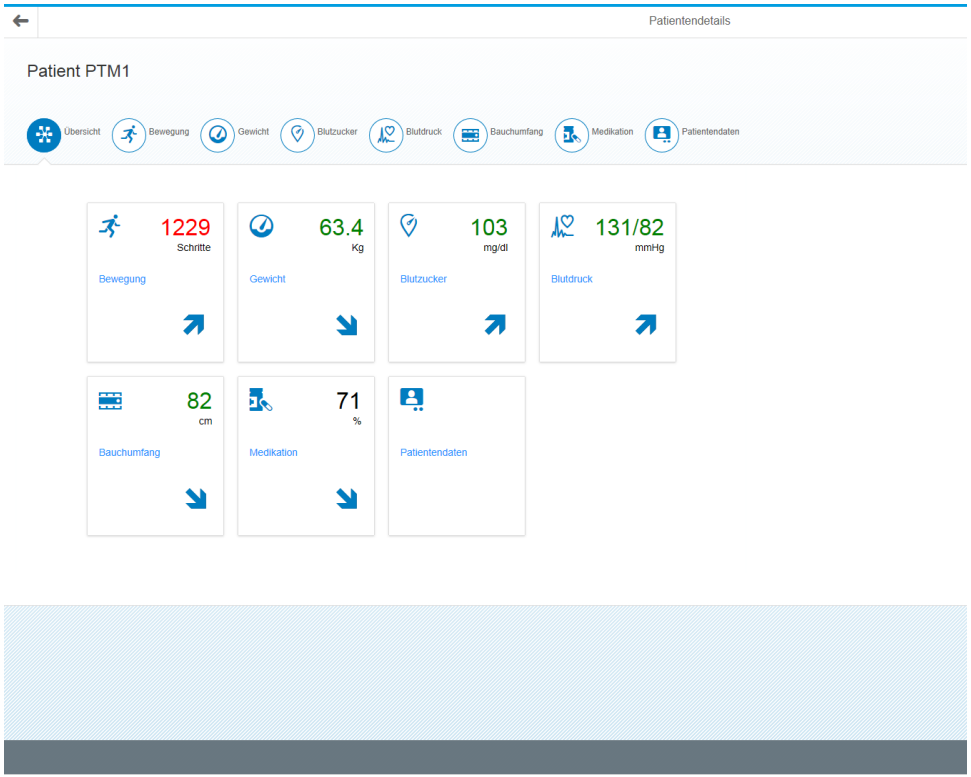


1 Stratify Patients: Data Analyis

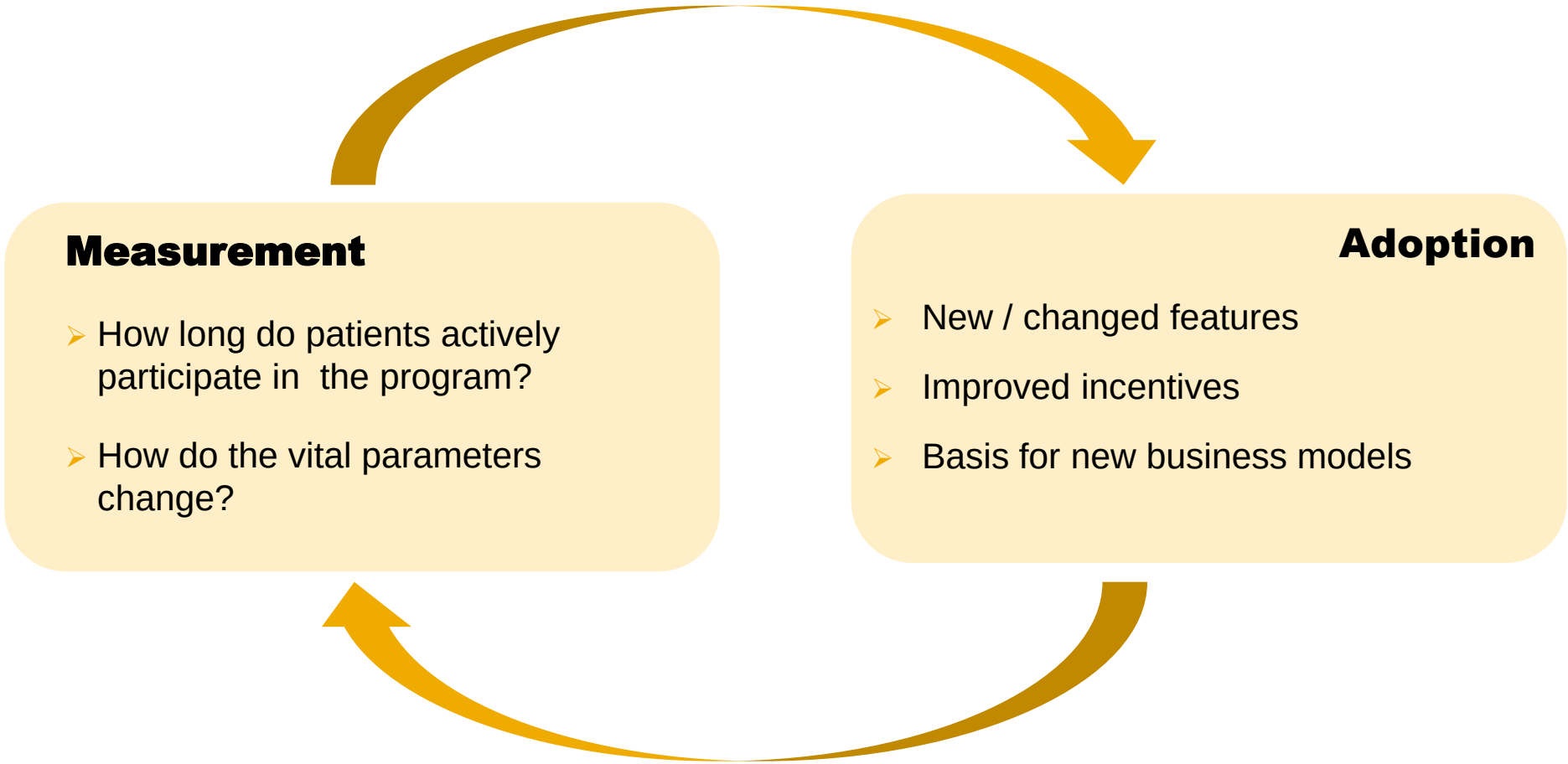


2 Create new care offers





3 Analyze Health Outcome



IoT enabled Smart Vending

SAP's new Smart Vending machines to use NFC

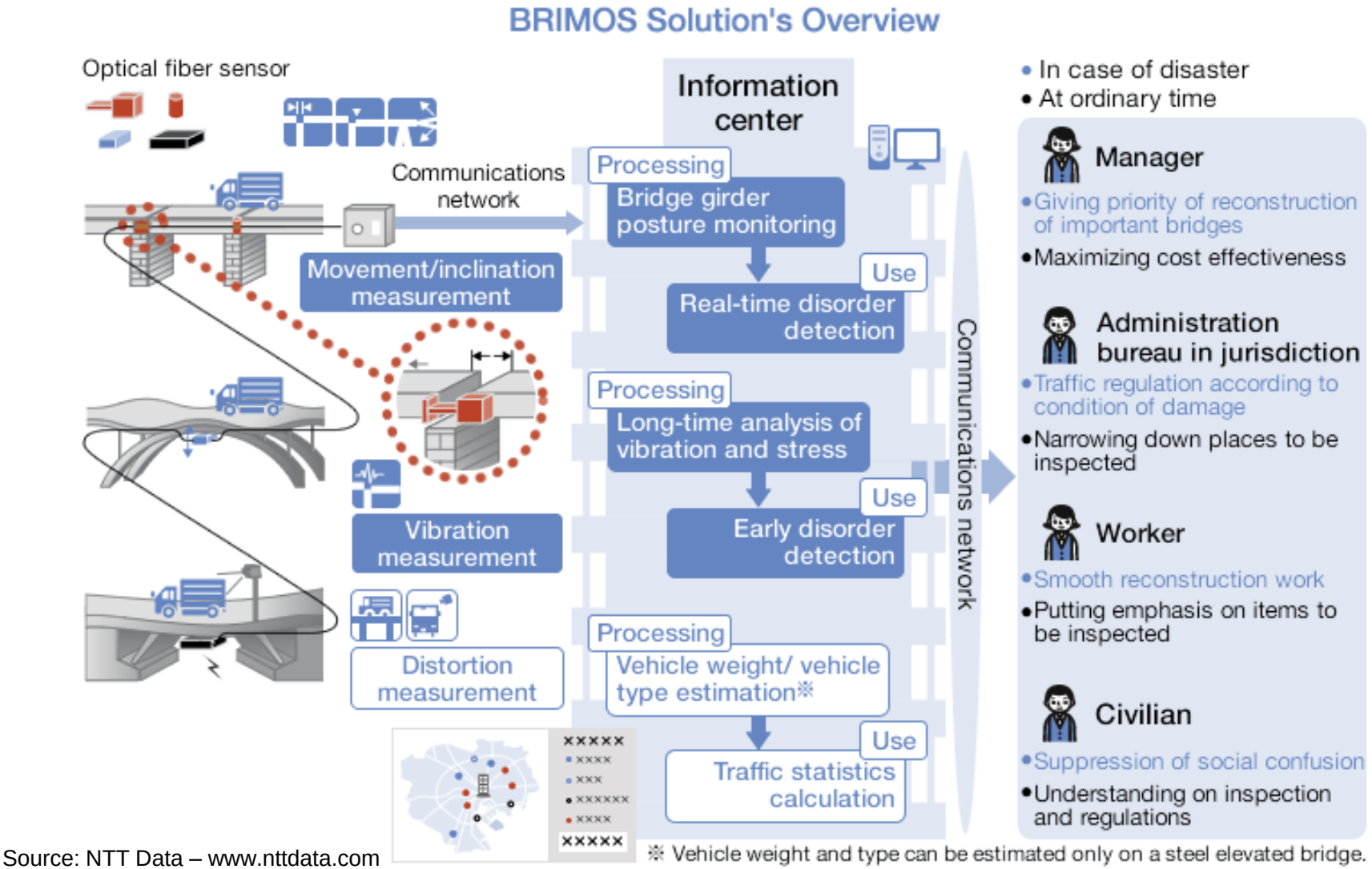
SAP is currently developing a new type of vending machine called Smart Vending that will feature near field communication (NFC). Based on the SAP HANA data platform, the new NFC Smart Vending machines use both SAP HANA Big Data and SAP HANA Cloud Platform, allowing customers to purchase items and then link these purchases to their social media profiles such as Facebook and Twitter. The implementation of NFC in vending machines should give their owners a better understanding of customer preference, allowing owners the chance to react to changes in the market and manage their vending machines more efficiently.

The NFC system will work by letting customers touch their NFC phones against the vending machines which will then use advanced infrared readers to pull up the customers' details on a touchscreen display. This way users can pay using a pre-selected account and receive a more personalized experience.

Changing the way companies interact with

- **Customer Experience** ↗
- **Supply Chain Management** ↗
- **Costs for Maintenance** ↘
- **Profitability** ↗
- **Flexibility** ↗
- **….**

Another IoT example: NTT BRIMOS (bridge montioring system) - real-time end-to-end ‘bridge management’

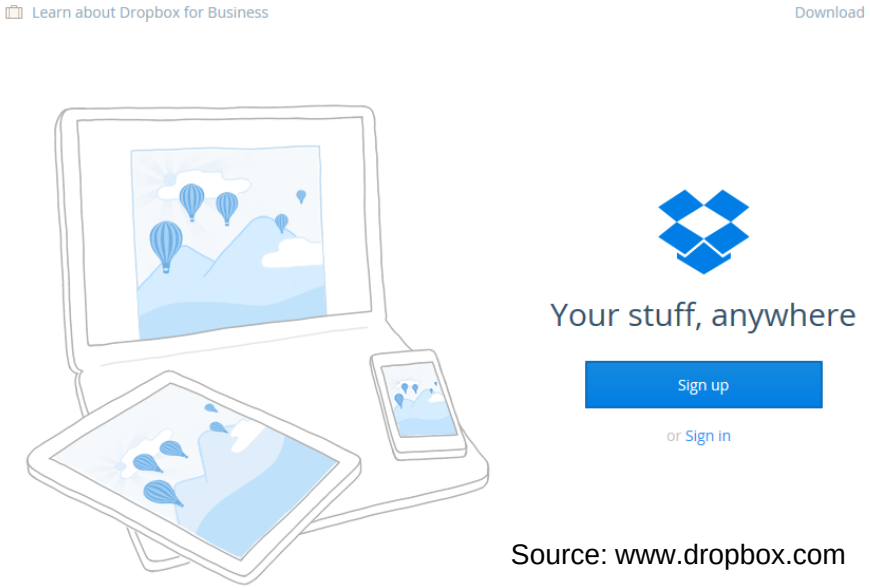


Source: NTT Data – www.nttdata.com

IoT will drive and enable many different business models (variants) – just examples

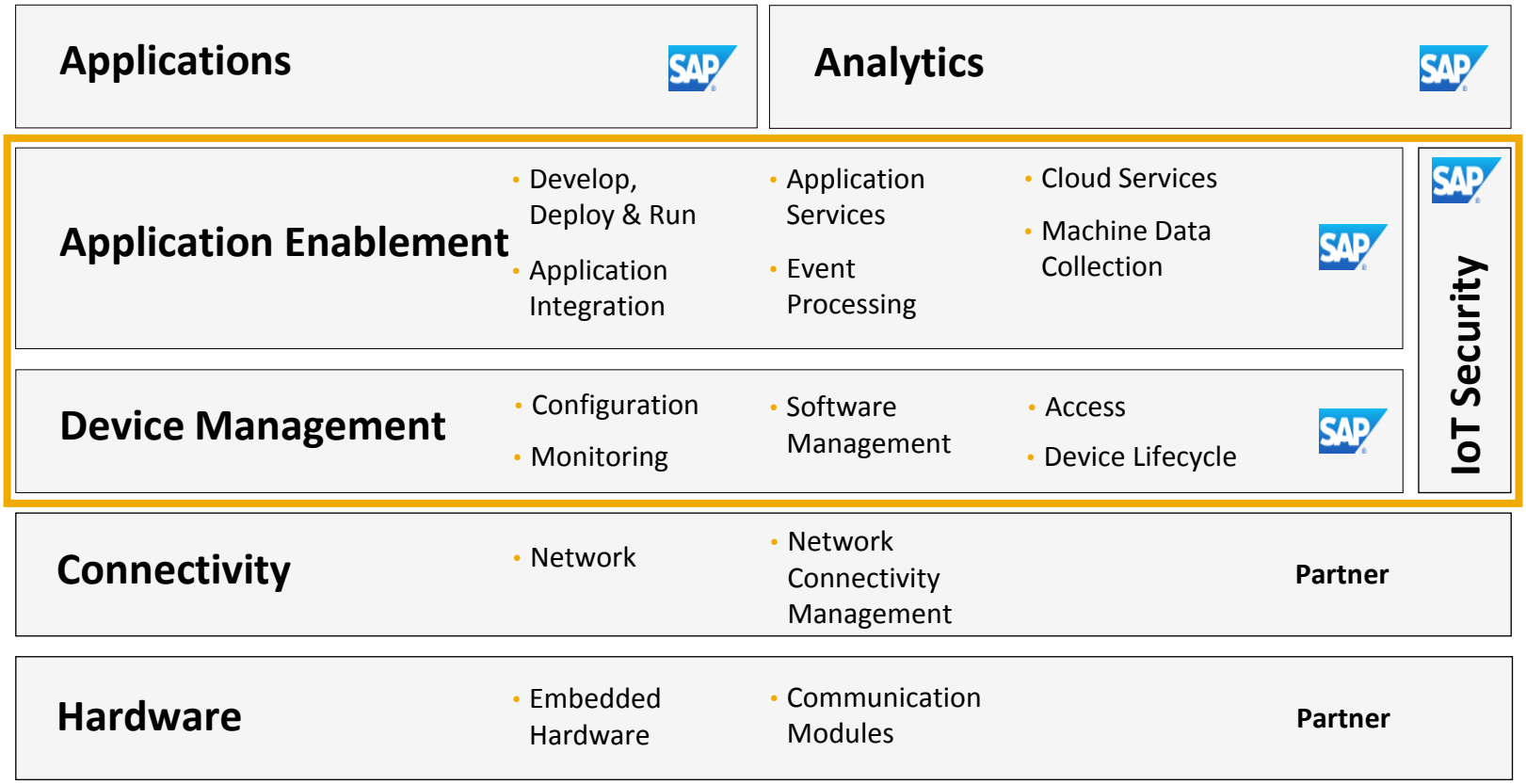
- **Freemium (Free + Premium):** product w. free basic services + premium services
- **Digital Add-On / Digital Lock-In:** product + add-on services
  (Lock-In: provider dependency!)
- **Products as Point of Sales (PoS):** products as multiplicator (e.g. real-time offers, real-time advertising)
- **Sensor as a Service**

Source: Mobile Brand Blog – Dominos Pizza



Source: www.dropbox.com

Strategy: IoT Technology Scope



SAP HANA Cloud Platform IoT Services

Derived from IDC's Worldwide M2M Taxonomy

Thank you!

Contact:
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