"Transformation e Digital Disruption": quali prospettive per competere nelle diverse industrie

Milano, 17 March 2016

What we will see today

There is no "one-size-fits-all" solution to digital transformation
- Businesses have different levels of digital needs & strategies (that need to be prioritized into a roadmap)
- Therefore digital transformation activities require different levels of disruption and scale

Anyway, some lessons can be learnt from successful innovators
- A clear roadmap/ focus on where value stands
- A step by step approach
- An organization supporting innovation
- A "trial & error" culture/ approach

Some leading examples across industries exist
- Re-engineer vs re-imagine

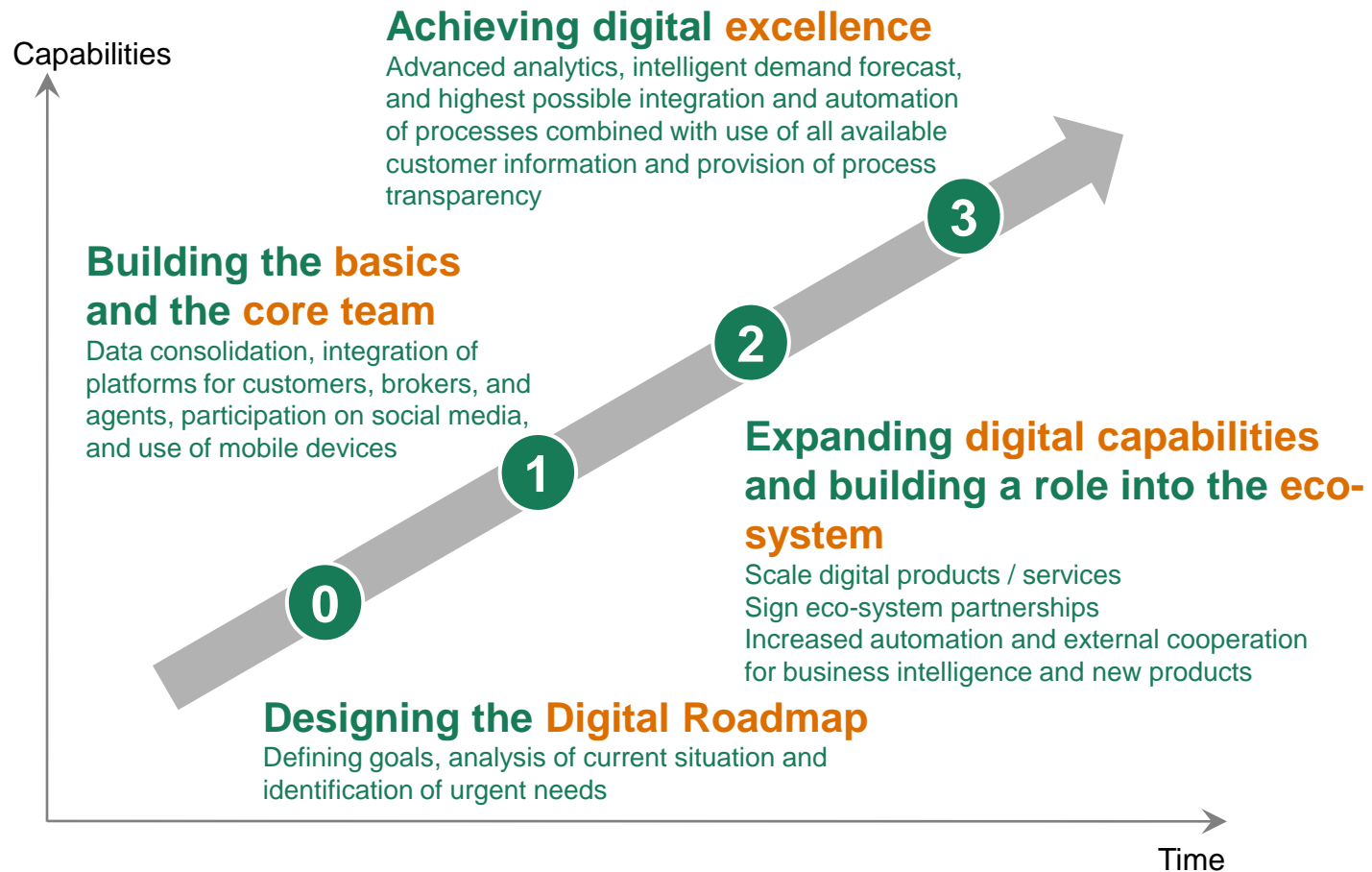THE BOSTON CONSULTING GROUP   **Draft—for discussion only**

Agenda

The path to digital excellence

Some success cases across industries

How to manage a successful transformation

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Achieving **digital excellence** typically proceeds in stages

Capabilities

Achieving digital excellence
Advanced analytics, intelligent demand forecast, and highest possible integration and automation of processes combined with use of all available customer information and provision of process transparency

Building the basics and the core team
Data consolidation, integration of platforms for customers, brokers, and agents, participation on social media, and use of mobile devices

Expanding digital capabilities and building a role into the eco-system
Scale digital products / services
Sign eco-system partnerships
Increased automation and external cooperation for business intelligence and new products

Designing the Digital Roadmap
Defining goals, analysis of current situation and identification of urgent needs

Time

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"Going Digital" is not just about apps and websites

The App / Front-end	**Front-end** features are the **most visible...**	• **24/7 access** to services, from anywhere • **Simple & intuitive interfaces (UX/UI)** • Targeting of **both "Hybrid" and "Digital generation"**
The Value	**... but most of the value & challenge from Digital lie below the surface**	• Data-driven **customization** • **Seamless integration** across distribution channels • **Automation** of many **internal processes** • **New working modes** for both operations and IT staff • **Adjustments in internal skill sets**, organization structure & governance • **Development of ecosystems** with external experts with complementary skills

Key questions to answer in order to address and build a differentiating sustainable Digital advantage

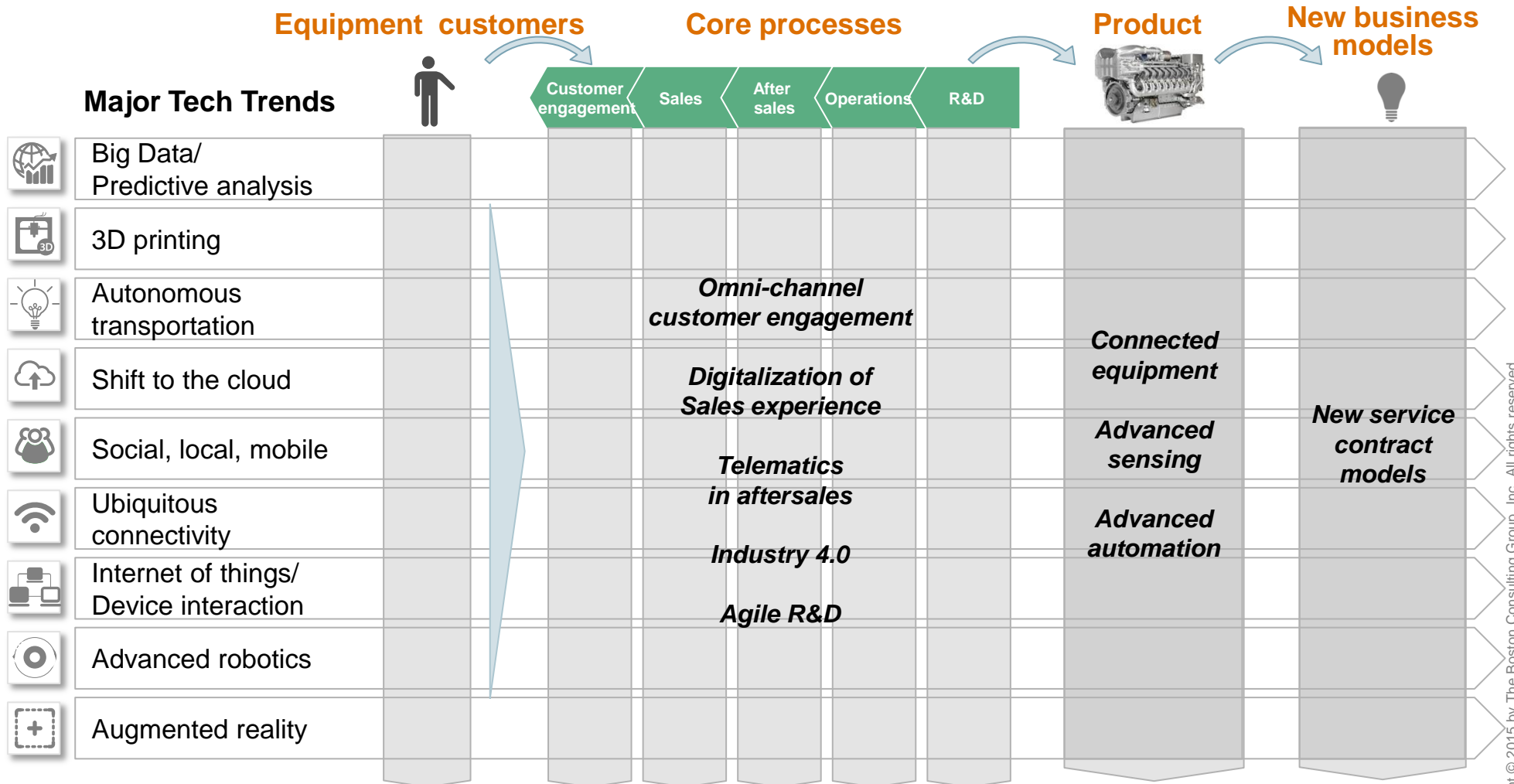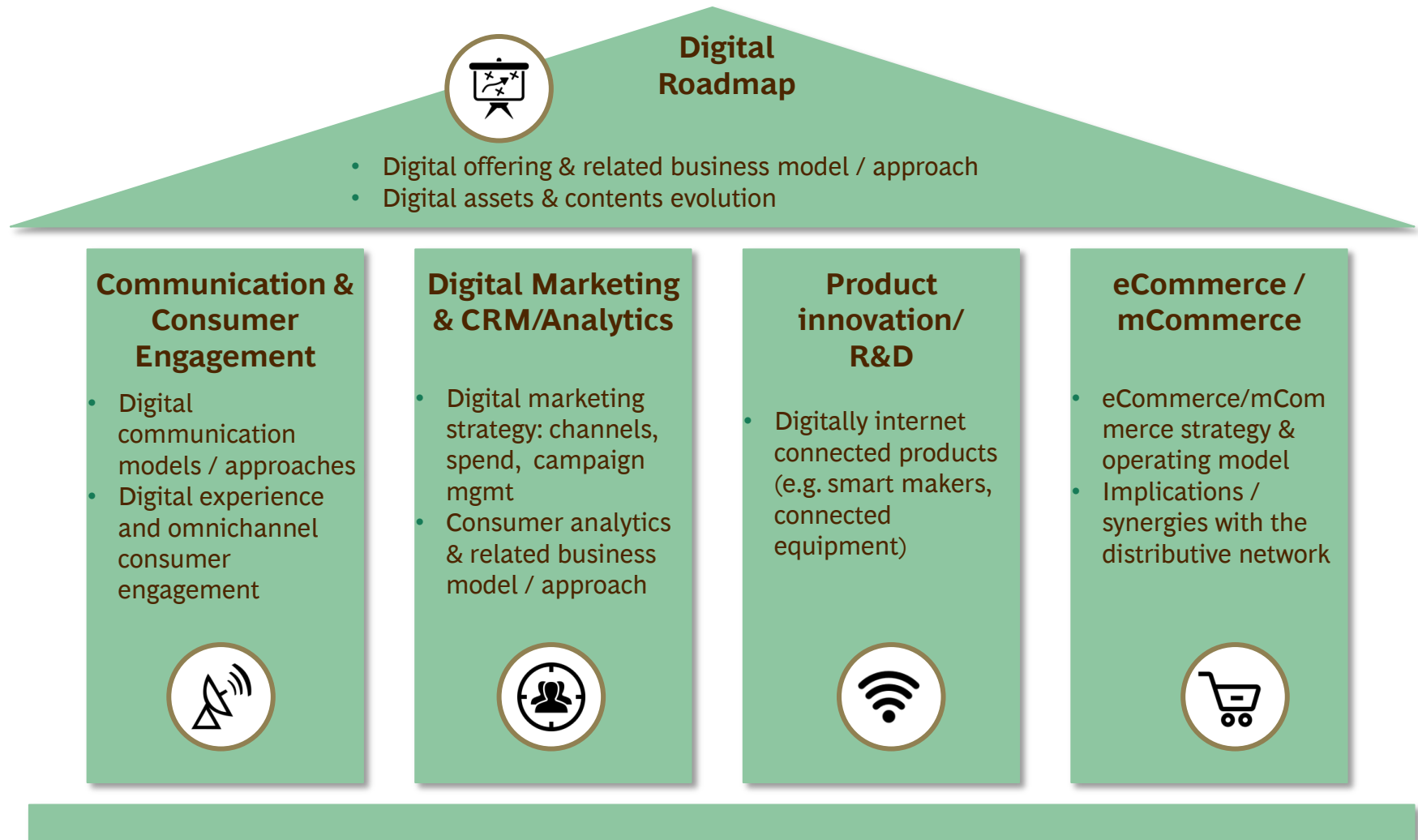|		
	Customer relevance	Does it address latent or only expressed customer needs ? Services / Products tailor made to individuals / customer segments ? Clear segmentation criteria ?
	Strategic perspective / Long term advantage	Step change or evolutionary innovation ? Unique or me too ? Difficult to copy / paste in the mid-term ?
	Clear sources of value	Is there a business case for innovation ? Clear value drivers impacted ?
	"Marketability" of innovation	Is there a clear "marketability" of products / services generated by the innovation ? Chance to sell / cross-sell them ?
	Short Time to market	Is time to market consistent with business innovation cycles ? Sustainability of differentiation ?

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Roadmap need to be tailor-made to the specific industry (e.g. Industrial Goods)

Major Tech Trends	Equipment customers	Core processes					Product	New business models
		Customer engagement	Sales	After sales	Operations	R&D		
Big Data/ Predictive analysis								
3D printing								
Autonomous transportation		Omni-channel customer engagement						
Shift to the cloud		Digitalization of Sales experience					Connected equipment	New service contract models
Social, local, mobile							Advanced sensing	
Ubiquitous connectivity		Telematics in aftersales						
Internet of things/ Device interaction		Industry 4.0					Advanced automation	
Advanced robotics		Agile R&D						
Augmented reality								

Roadmap need to be tailor-made to the specific industry (e.g. Consumer Goods)

Digital Roadmap

- Digital offering & related business model / approach
- Digital assets & contents evolution

Communication & Consumer Engagement

- Digital communication models / approaches
- Digital experience and omnichannel consumer engagement

Digital Marketing & CRM/Analytics

- Digital marketing strategy: channels, spend, campaign mgmt
- Consumer analytics & related business model / approach

Product innovation/ R&D

- Digitally internet connected products (e.g. smart makers, connected equipment)

eCommerce / mCommerce

- eCommerce/mCommerce strategy & operating model
- Implications / synergies with the distributive network

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Two alternative approaches to drive digital transformations

1

Re-engineer

To digitize the core

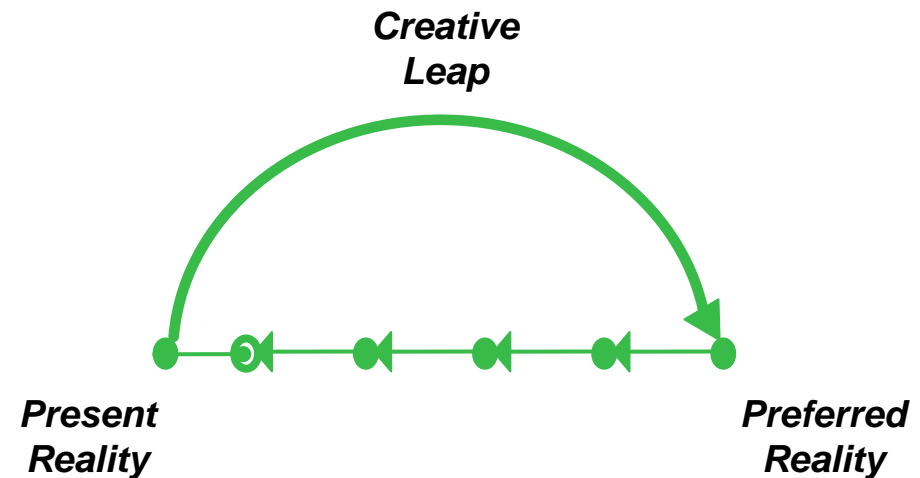Optimize **current value chain** to drive economics and **transform the core**
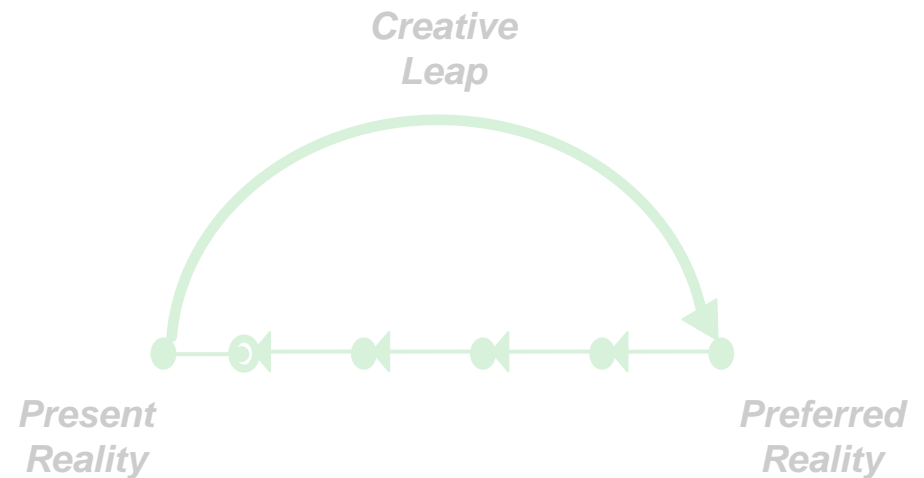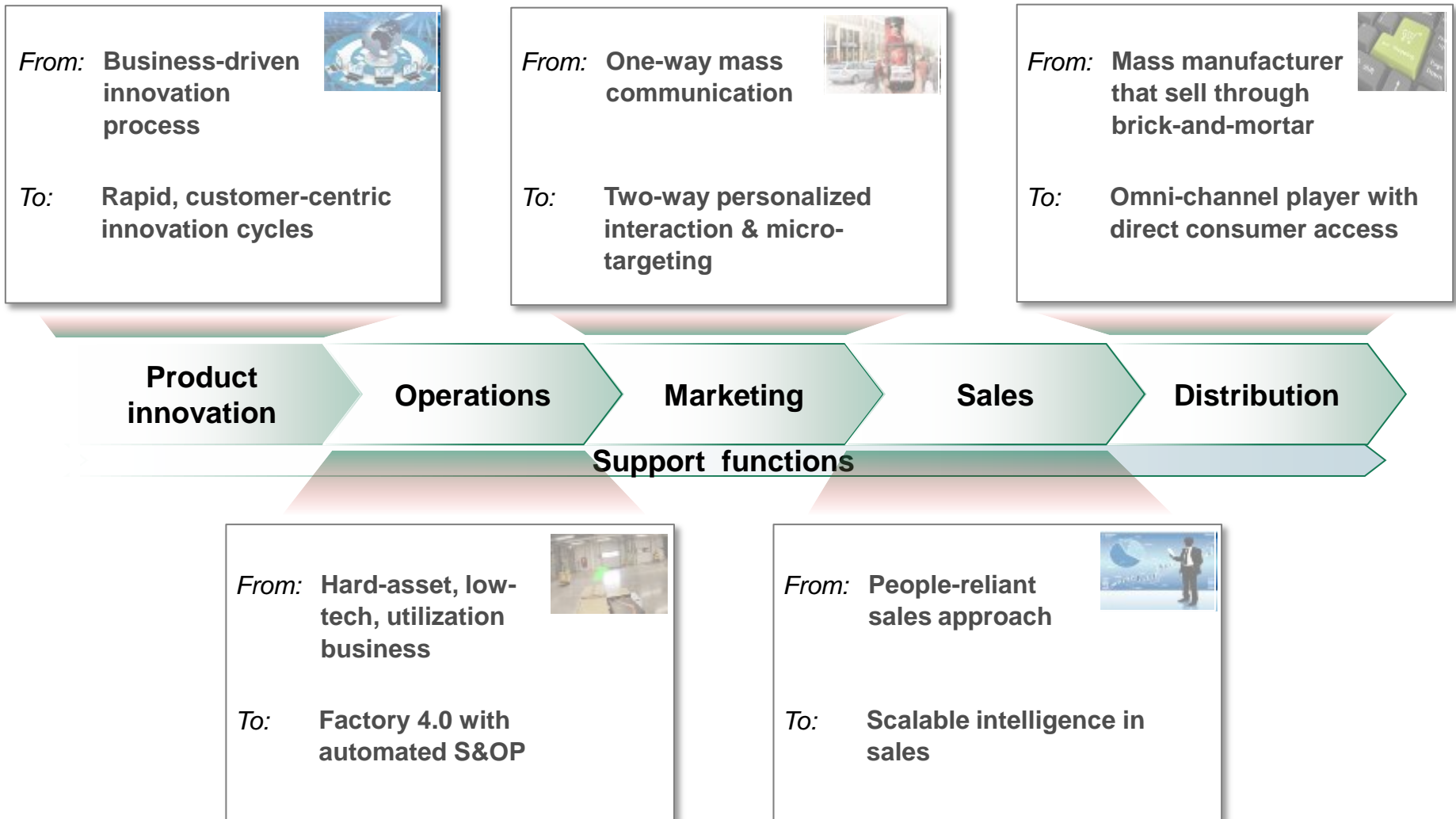
2

Re-imagine

To develop new business models

Expand into **new businesses** to leap-frog competition or **enter new markets** – building **on existing assets**

@

Product innovation → Operations → Marketing → Sales → Distribution

Creative Leap

Present Reality → *Preferred Reality*
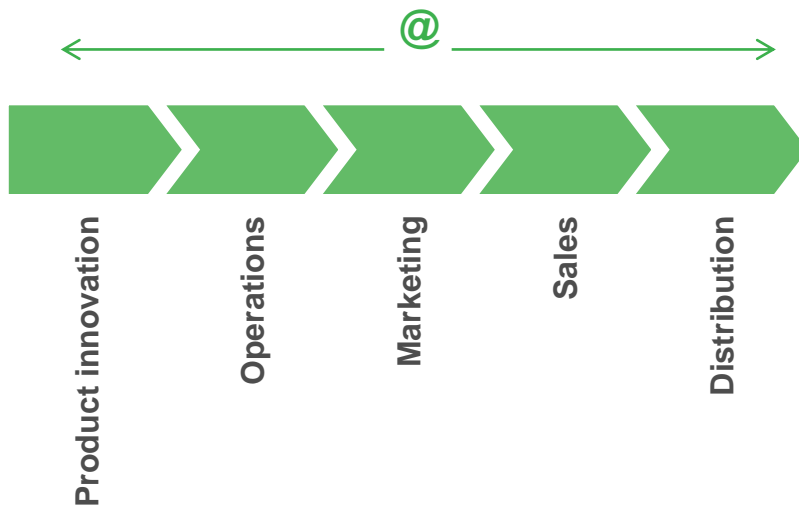
Re-engineer ("*evolve the core*")

1 | Re-engineer
To digitize the core

2 | Re-imagine
To develop new business models

Optimize **current value chain** to drive economics and **transform the core**

Expand into **new businesses** to leapfrog competition or **enter new markets** – building **on existing assets**

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Product innovation

Operations

Marketing

Sales

Distribution

Creative Leap

Present Reality

Preferred Reality

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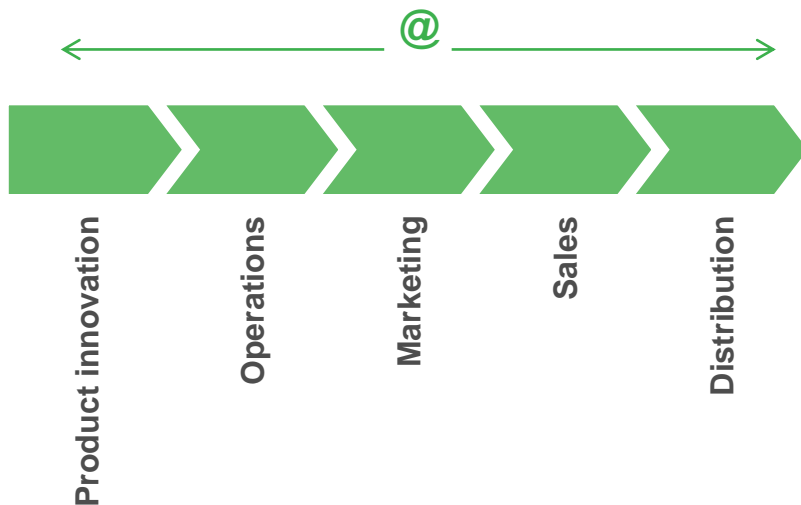
Think of Digital as a **way to improve** step by step the entire **value chain / process**

From: **Business-driven innovation process**

To: **Rapid, customer-centric innovation cycles**

From: **One-way mass communication**

To: **Two-way personalized interaction & micro-targeting**

From: **Mass manufacturer that sell through brick-and-mortar**

To: **Omni-channel player with direct consumer access**

Product innovation ▶ **Operations** ▶ **Marketing** ▶ **Sales** ▶ **Distribution**

Support functions

From: **Hard-asset, low-tech, utilization business**

To: **Factory 4.0 with automated S&OP**

From: **People-reliant sales approach**

To: **Scalable intelligence in sales**

Source: BCG

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BCG partnered with Starbucks to deliver their Vision of being most personalized brand in the world

Business objective: Dramatically increase customer engagement

- Through much more personalized interactions

- Across channels (email, mobile, web, in store, etc.)

- Drive 100s of millions of incremental revenue starting in 2016

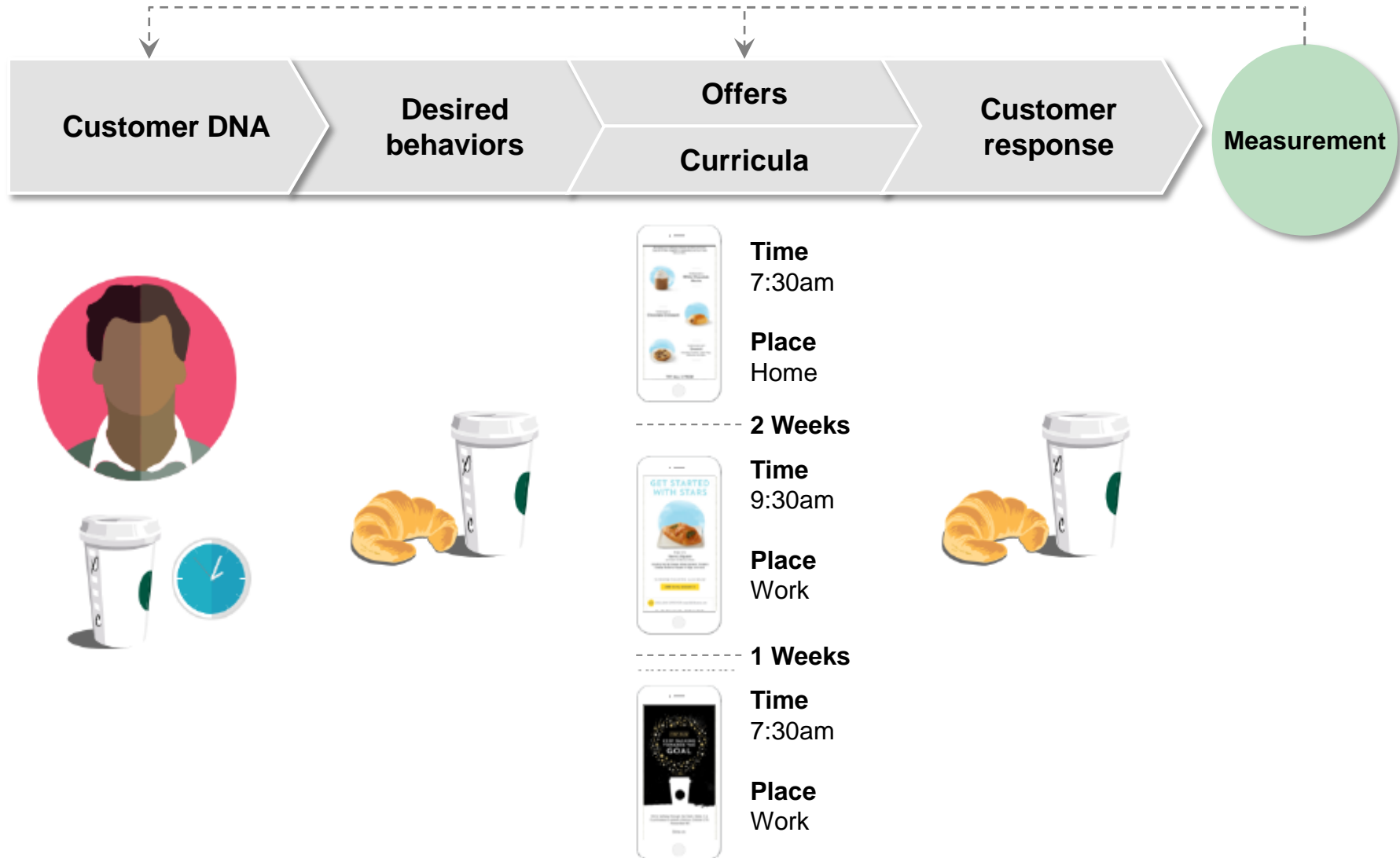**Analytics challenge: Build the decision engine that :**

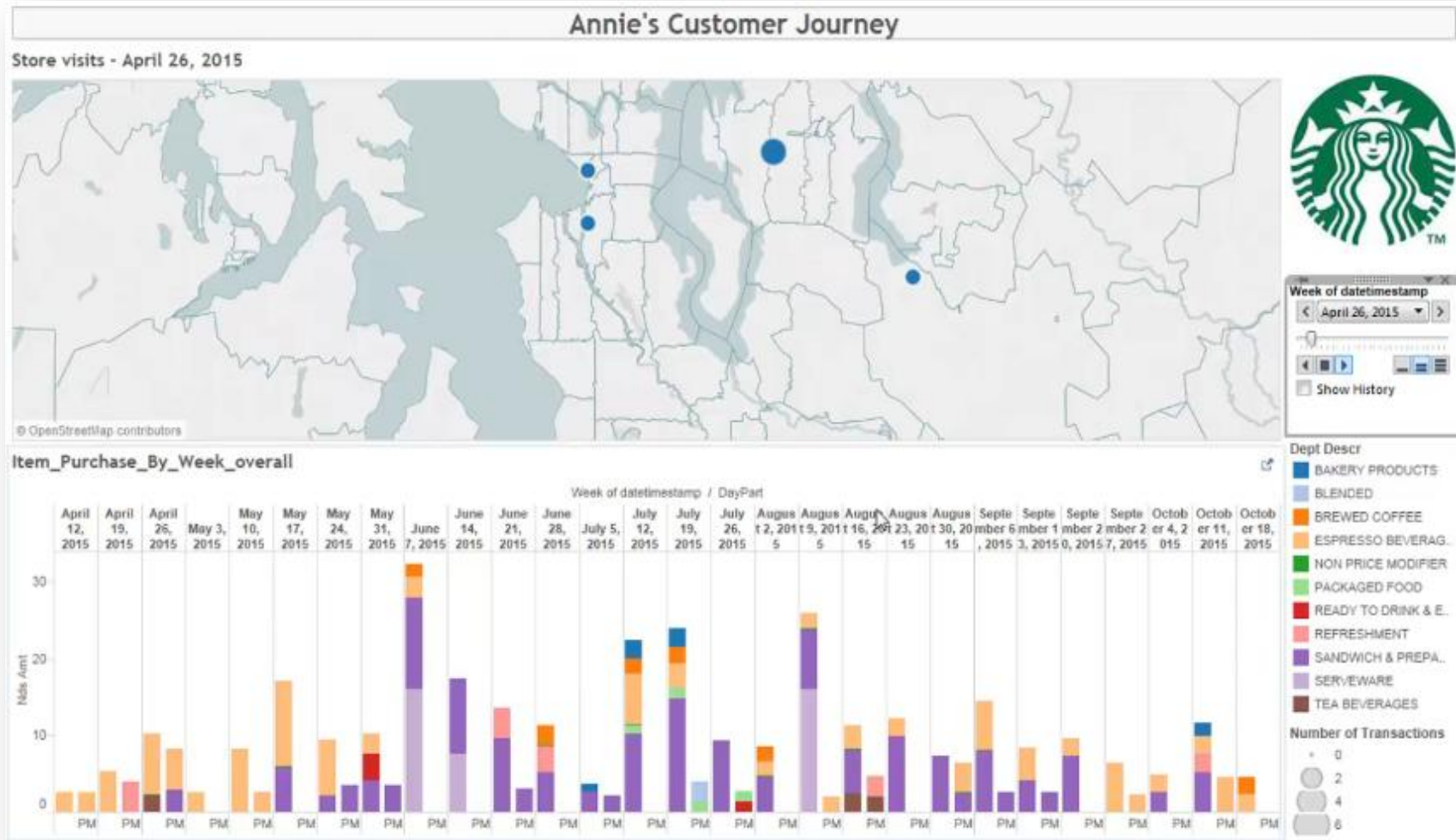- Understands each and every customers as uniquely as possible

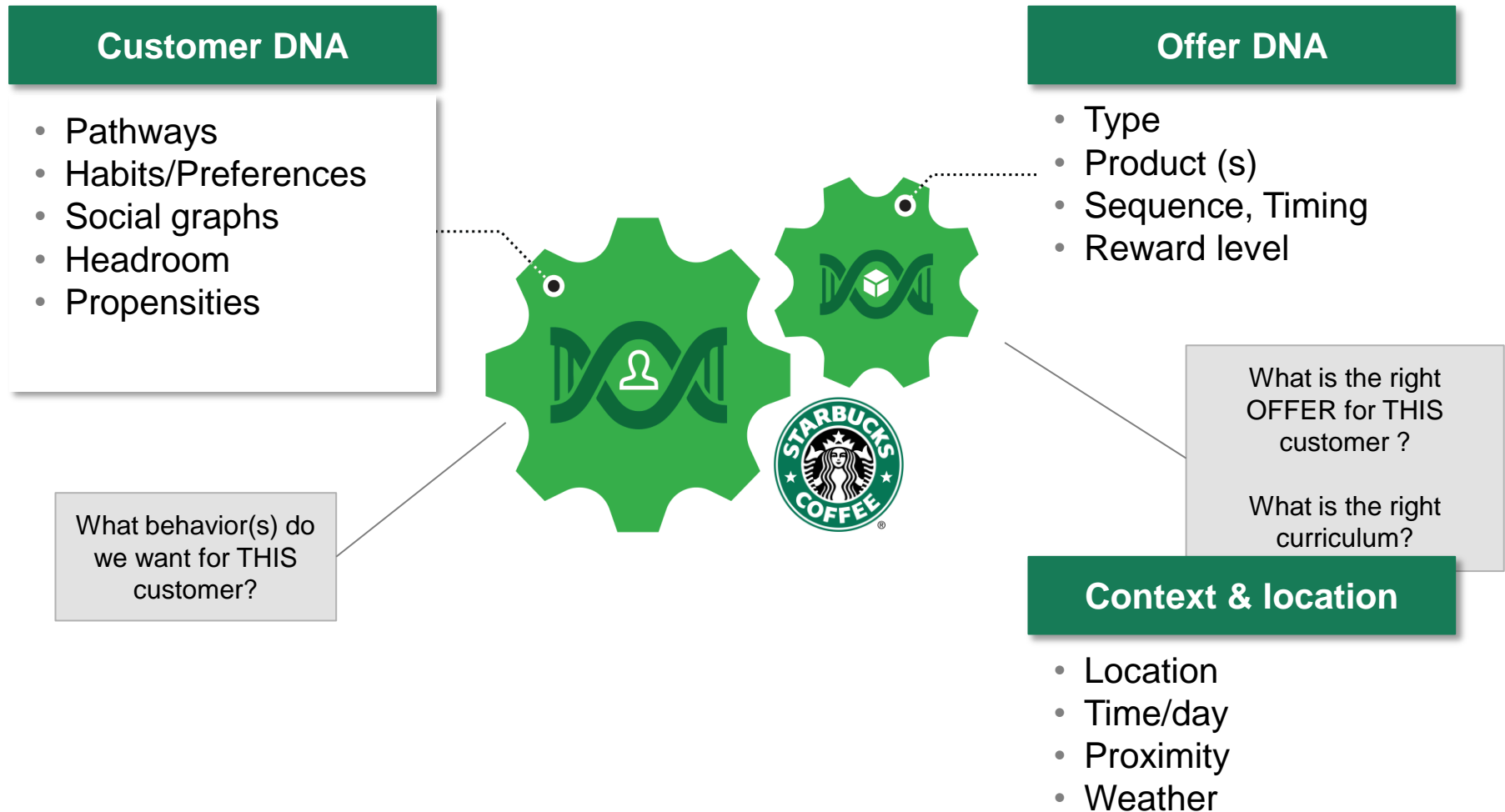- Directs the right marketing action at the right time, location context to this customer

How does the Starbucks **contextual App works**

Customer DNA → Desired behaviors → Offers / Curricula → Customer response → Measurement

Time
7:30am

Place
Home

2 Weeks

Time
9:30am

Place
Work

1 Weeks

Time
7:30am

Place
Work

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Advanced data analytics engine enables treating **each individual customer as 'segment of one'**

Personalization achieved by looking at **customer's historical habits** and customer **context in real time**
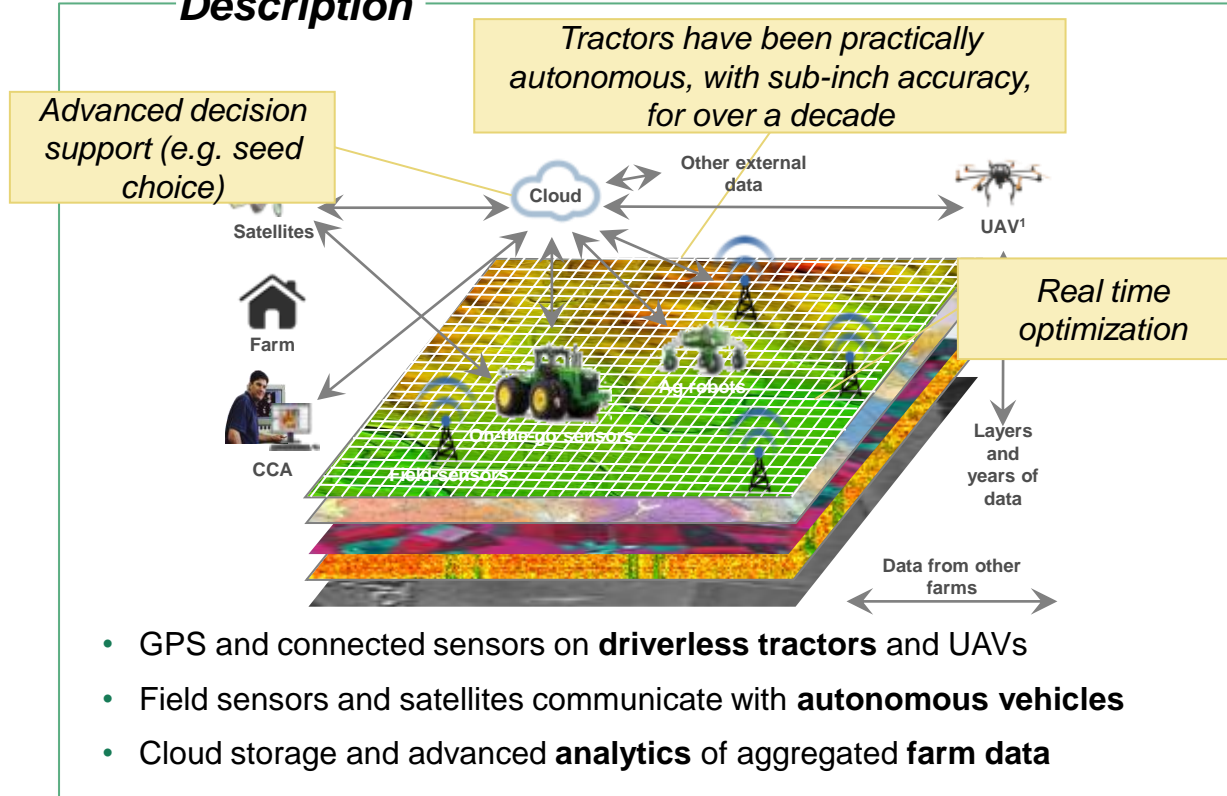
Customer DNA

- Pathways
- Habits/Preferences
- Social graphs
- Headroom
- Propensities

What behavior(s) do we want for THIS customer?

Offer DNA

- Type
- Product (s)
- Sequence, Timing
- Reward level

What is the right OFFER for THIS customer ?

What is the right curriculum?

Context & location

- Location
- Time/day
- Proximity
- Weather

John Deere digital service to enable precision farming in Agribusiness

JOHN DEERE

Industrial equipment manufacturer

Description

Tractors have been practically autonomous, with sub-inch accuracy, for over a decade

Advanced decision support (e.g. seed choice)

Real time optimization

Cloud · Other external data · UAV[1]

Satellites

Farm

CCA

Chemical sensors

Fleet sensors

Layers and years of data

Data from other farms

- GPS and connected sensors on **driverless tractors** and UAVs
- Field sensors and satellites communicate with **autonomous vehicles**
- Cloud storage and advanced **analytics** of aggregated **farm data**

Insight or Impact

- **Impact** for **OEMs**: additional **revenues** through new offering

- **Impact** for **farmers**: **increased productivity** and **yields**, improved safety outcomes, more efficient use of time

Technologies used

Autonomous vehicles

Cloud

Big data and analytics

Main Challenges

- Sales of high-end solutions to a very "old school" industry

Source: BCG Case Experience

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Komatsu use **real-time global monitoring** to improve construction equipment and customer service

Construction equipment traditionally comes with set operating guidelines and has a significant proportion of its maintenance conducted reactively

**Komatsu developed "KOMTRAX", a real-time global monitoring system, to provide up-to-date operating feedback**

- Gathers data from GPS and sensors, which have been installed on all Komatsu construction equipment since 2001
- Monitors location, engine running status, remaining fuel, run hours and other operating data

Provides real-time equipment data to improve operations for Komatsu as well as their customers and distributors

- _Komatsu:_ Identifies patterns in equipment failure to improve machine design and manufacturing quality
- _Customers:_ Identifies incremental operating efficiencies and predicts maintenance requirements, avoiding costly failures
- _Distributors:_ Predicts expected equipment demand

Komatsu machines are fitted with sensors to detect patterns in usage
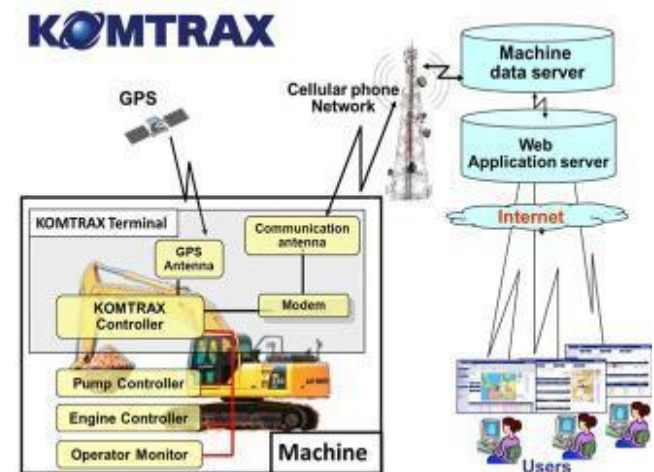
Uses real-time data to improve the operations of Komatsu, their customers and distributors
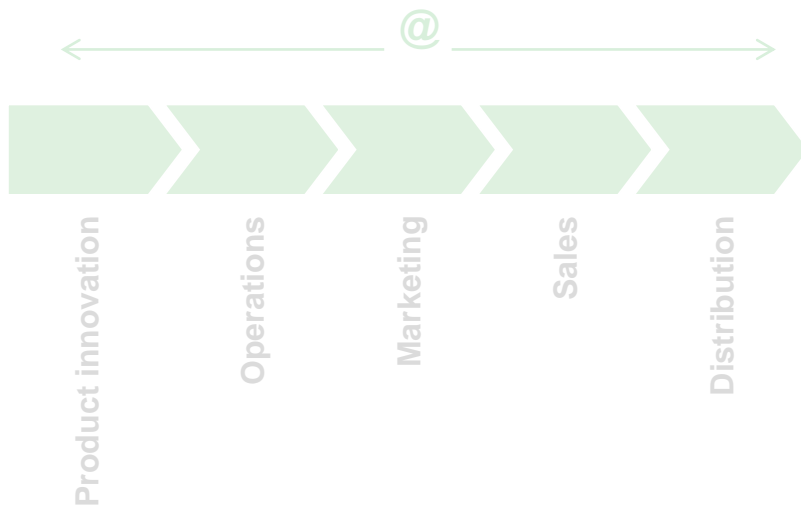
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Re-imagine ("*re-invent the core and/or new digital core*")

1 ~~Re-engineer~~

~~To digitize the core~~

Optimize **current value chain** to drive economics and **transform the core**
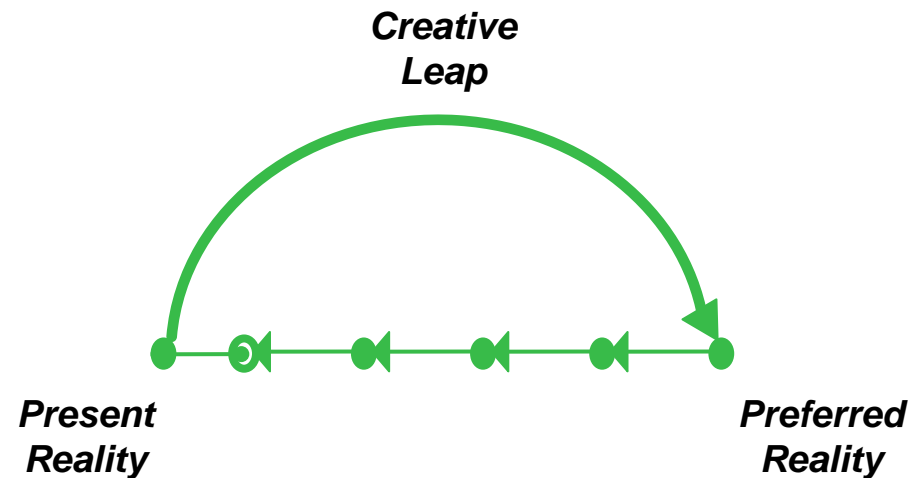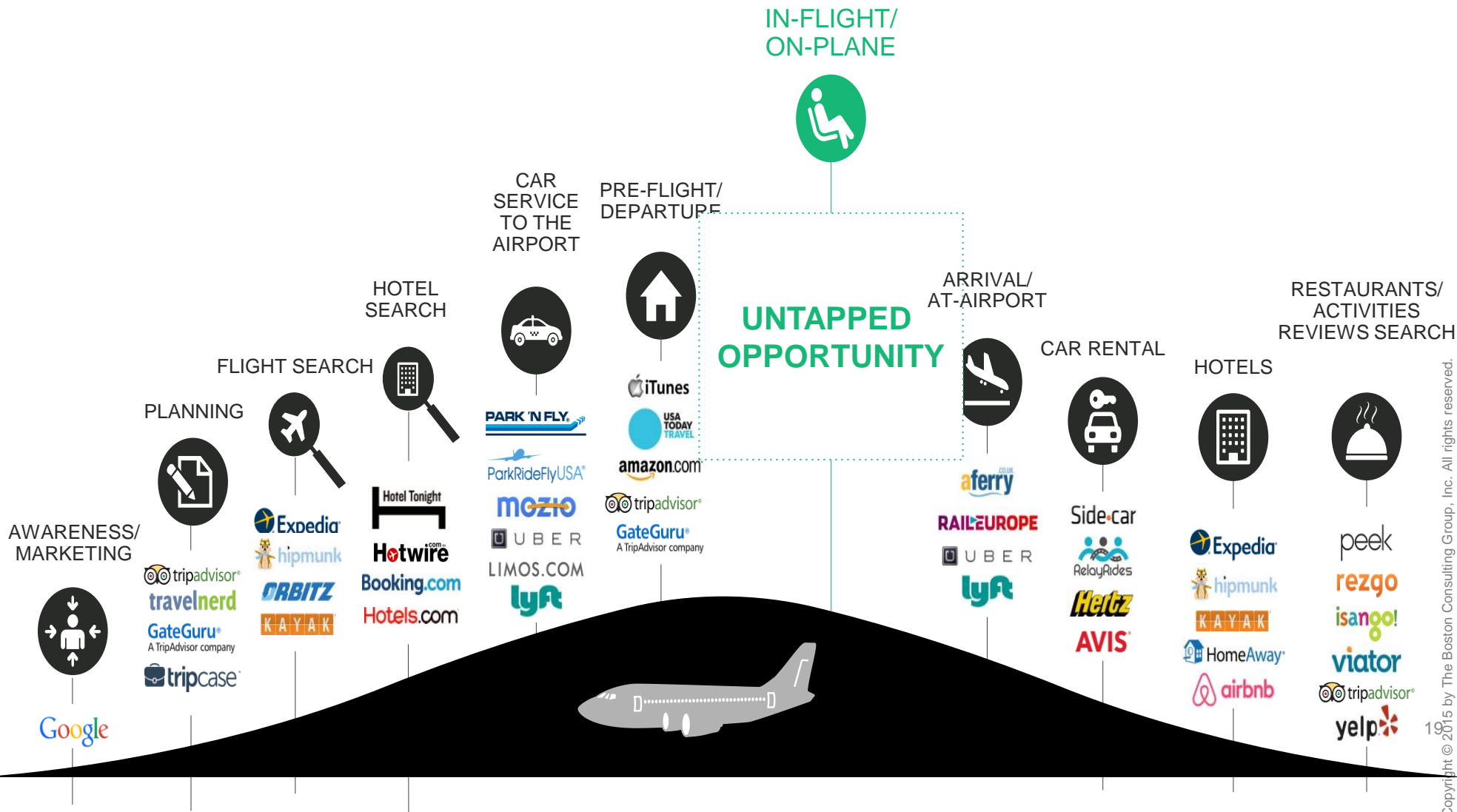
2 **Re-imagine**

To develop new business models

Expand into **new businesses** to leap-frog competition or **enter new markets** – building **on existing assets**

Product innovation · Operations · Marketing · Sales · Distribution

Creative Leap

Present Reality

Preferred Reality

Digitalization: Inflight still unconquered

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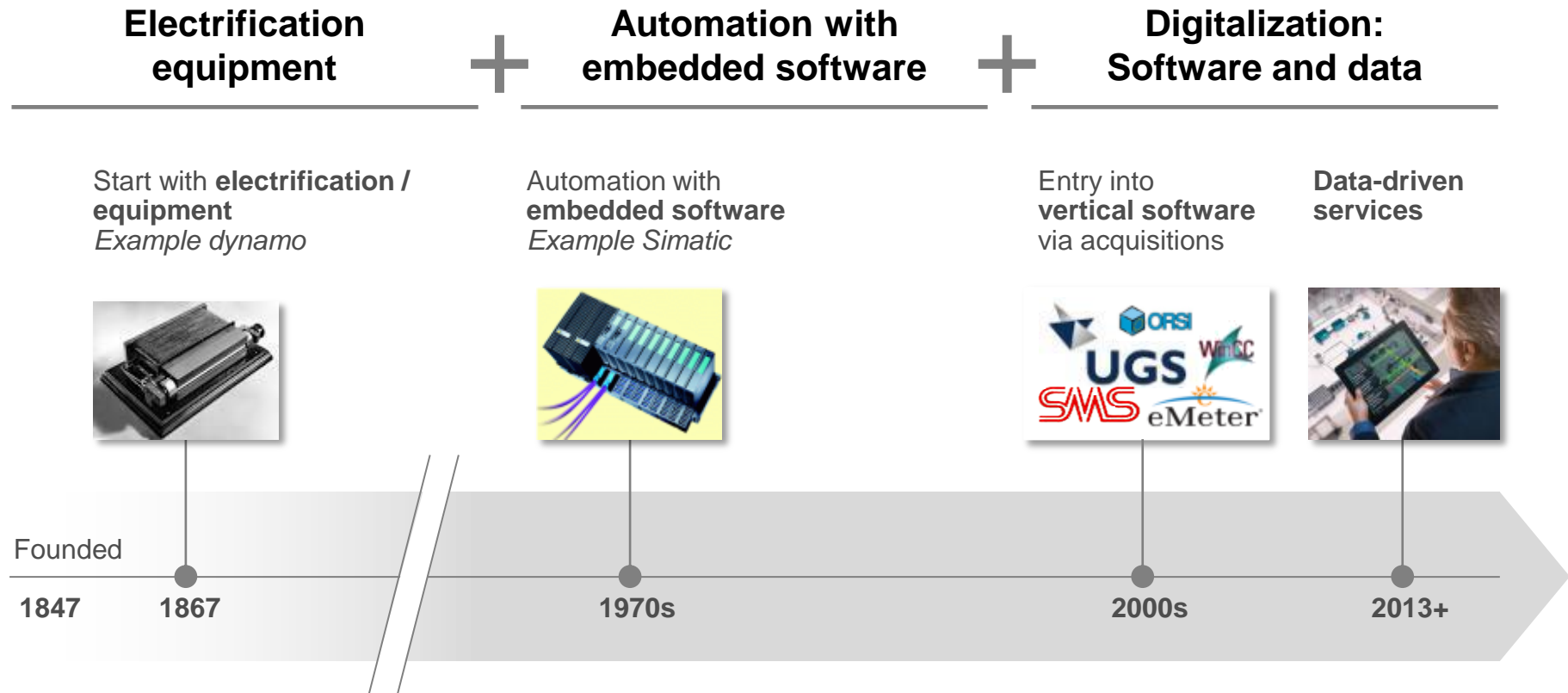# 360° connected experience innovation concept

Core features:

- Personalized content and service offering throughout experience
- Targeted offers on flights, retail, on-board & destination services
- Real-time customer service & dialogue via social networks
- "Insider" community development
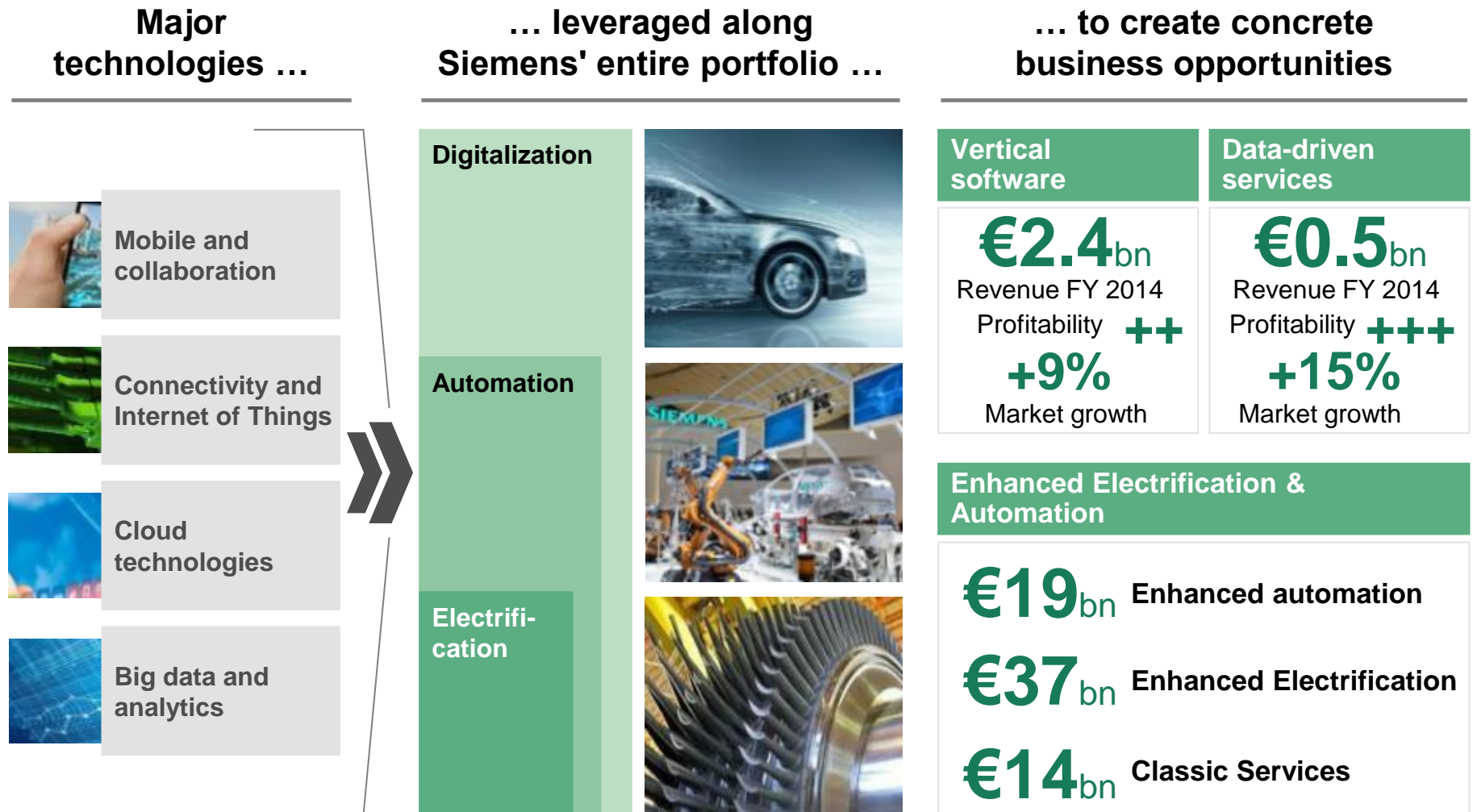
Personalization through:

- Seat, food & media preferences
- Historical behavior & choices
- Demographic profile data
- Social network connections
- Destination breadcrumbs & tags
- Geographic location history
- Stored payment information

A clear **journey towards digitalization** with new digital service lines of business

Electrification equipment	+	**Automation with embedded software**	+	**Digitalization: Software and data**	

Start with **electrification / equipment**
Example dynamo

Automation with **embedded software**
Example Simatic

Entry into **vertical software** via acquisitions

Data-driven services

Founded

1847	1867	1970s	2000s	2013+

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Sizeable digital business and ambition today

Major technologies …	… leveraged along Siemens' entire portfolio …	… to create concrete business opportunities

Major technologies …

- Mobile and collaboration
- Connectivity and Internet of Things
- Cloud technologies
- Big data and analytics

… leveraged along Siemens' entire portfolio …

- Digitalization
- Automation
- Electrification

… to create concrete business opportunities

Vertical software	Data-driven services
€2.4bn	**€0.5**bn
Revenue FY 2014	Revenue FY 2014
Profitability **++**	Profitability **+++**
+9%	**+15%**
Market growth	Market growth

Enhanced Electrification & Automation

€19bn Enhanced automation

€37bn Enhanced Electrification

€14bn Classic Services

Source: Adapted from Siemens Capital Market Day 2014

160317 The Innovation Group BCG Preez SENT.pptx

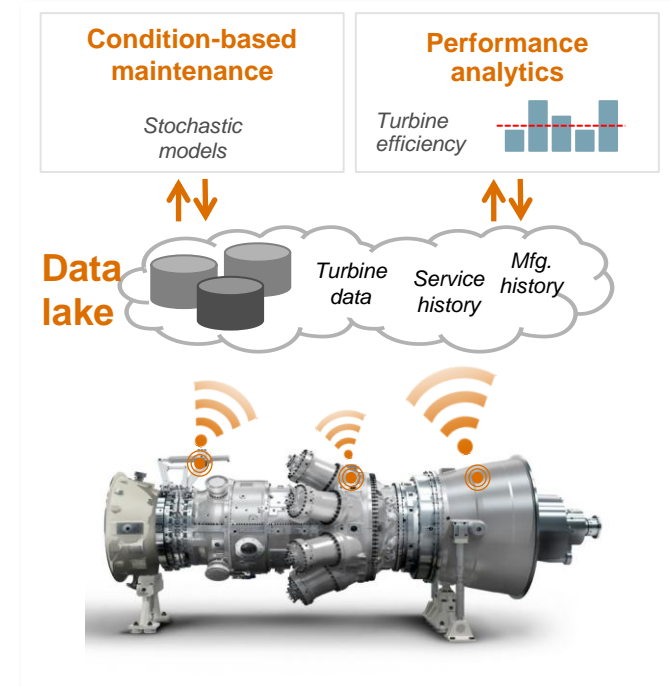# Data-driven services example: Gas turbine

What: Objective

Improve gas turbine performance and maintenance cost

- *Condition-based maintenance*: Setup flexible, performance based maintenance agreements with turbine OEMs

- Contract dependent on turbine efficiency, number of starts, operating hours and load profile

- *Performance analytics:* Evaluate turbine performance improvement potential and identify measures

How: Potential implementation path at a customer

1 Conduct **pilot with turbine OEM** - Make operating data & maintenance records available

2 Select **retrofitting** of turbine with **sensors**

3 **Benchmark** own turbine's performance with OEM's fleet

4 Identify **improvement measures** on continuous basis

➡ **Maintenance**

➡ **Performance**

5 If successful, **roll-out pilot** – potentially requiring **harmonization of data** from different DCS' and Historians

Condition-based maintenance

Stochastic models

Performance analytics

Turbine efficiency

Data lake

Turbine data *Service history* *Mfg. history*

Impact

~2% efficiency improvement
Reduced maintenance cost

Multiple accelerators to boost the journey

Digital transformation accelerators

	Our perspective	**Examples**

Digital change management

- ▶ **Driven from the top by CEO or CTO/CDO**
- ▶ **Leadership involvement from entire org**
- ▶ **Ongoing program setup**

J. Kaeser, CEO:
"Immense opp'ties
offered by digitalization"

Lighthouses & Prototyping

- ▶ **Select major organic R&D bets**
- ▶ **Rapid experimentation and prototyping**
- ▶ **Leveraging design thinking and agile methodologies**

Common remote service platform

Start-up incubation, VC & M&A

- ▶ **Major M&A, though targets getting rare in some industries**
- ▶ **Incubation and external investments**

SIEMENS → UGS *The PLM Company*
$3.5bn

Siemens Venture Capital
>180 projects
LAGOA TENDRIL AVENTURA
Powerit Solutions

Digital talent acquisition

- ▶ **External senior hires from digital players as catalysts for digital transformation**
- ▶ **Build-up and stringent development of internal digital talent pools**

17,500 software engineers
Pool of analytics, cloud, networks, security specialists

Senior leadership development on digitalization

Source: BCG

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KSFs in digital transformations

1 **Take a holistic view of the transformation process**

- Understand each initiative in the **context of the "digital endgame/roadmap"**

2 Confirm a business case for each initiative, do not start by technologies

- Avoid implementing tech for tech's sake; make a clear case for return on each digital initiative
- Drive adoption by customers / users through ad hoc strategies / action plans

3 Recognize and account for interdependencies with other stakeholders

- Winning buy-in can be a long process, but is crucial as stakeholder interests merge
- Invest in strategic partnerships / eco-system

4 Don't forget the people / change management / organizational side

- Building an agile organization that can adapt with new developments, and the human capital / capabilities to enable those developments, ensures proper implementation and long-term viability
- Start by quick wins (e.g. owned digital media) to fund the overall journey

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Focus on **a few big bets**

Deliverable example: Prioritization funnel

Prioritization funnel

Mapping of existing initiatives + new ideas generation
~54 projects

1st Prioritization (value vs feasibility)
~25 projects + enablers

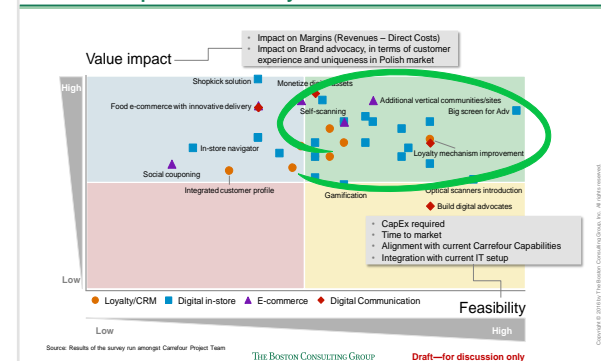**Priority #1**
Value potential & Action plan
6 projects
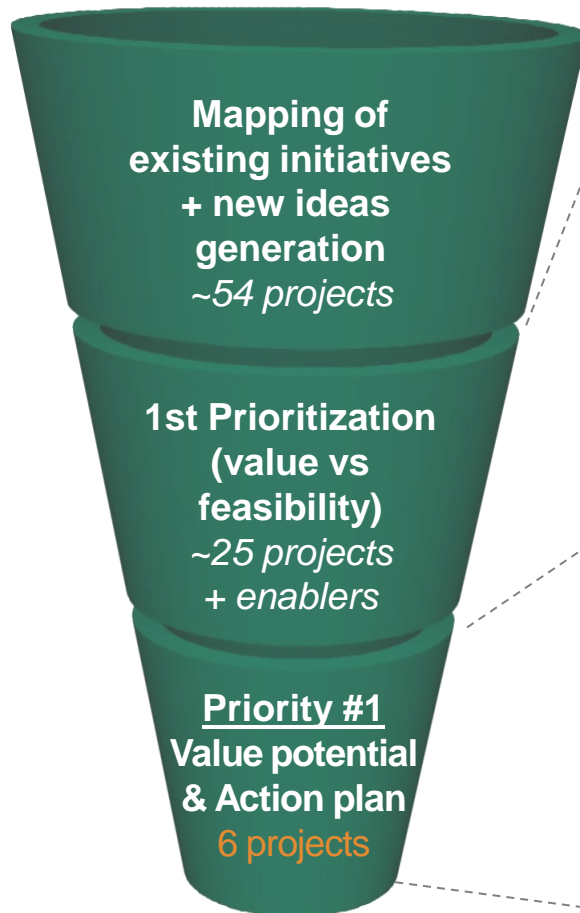
How did we drive final prioritization?

Initiatives were assessed during **joint workshops**

Key prioritization criteria were **value impact** (profit, brand advocacy, ...) and **feasibility** (Capex, time to market, ...)

Initiatives assessed during joint workshops looking at Value impact vs Feasibility

- Impact on Margins (Revenues – Direct Costs)
- Impact on Brand advocacy, in terms of customer experience and uniqueness in Polish market

Value impact

- CapEx required
- Time to market
- Alignment with current Carrefour Capabilities
- Integration with current IT setup

Feasibility

Loyalty/CRM   Digital in-store   E-commerce   Digital Communication

Source: Results of the survey run amongst Carrefour Project Team

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💡	**Business model innovation and Best Practices review**	🏃	**Feasibility/ Speed to market**
☑	**Consistency with roadmap (IT/assets)**	⬛	**Operating Model required**
⚙	**BCG case experience and Experts interviews**	🔗	**Bundle complementary initiatives for bigger value**

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Select and prioritize your initiatives based on value/ time and complexity to achieve

①	Additional sales	③	Improved customer experience
②	Additional profit	④	Support to uniqueness / differentiation

Value impact
(Financial and Advocacy)

High

Low

Important Investments

Initiative B

Initiative C

Initiative A

Initiative I

Initiative N

Initiative E

Initiative F

Initiative D

Initiative O

Initiative P

Initiative K

Quick wins

Initiative H

Initiative M

Initiative L

Follow-on priorities

Initiative G

Initiative J

Initiative Q

Feasibility

Low — High

◯ Size of bubble = Financial impact[1]

1. Impact on Margins = Δ Revenues − Δ Direct Costs

⑤	CapEx / Investments required	⑦	Alignment with THY capabilities and assets
⑥	Time to market	⑧	Consistency with current IT roadmap

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Mobilizing the organization is key in digital transformations

Installation of lighthouses

- Creation of examples – "made it"
- From workshop to app in one month
- Immediate customer feedback and iteration

4 apps in first 6 month

Integration with start-up scene

- 'Import' of startup culture into the company
- Cooperation with startup incubators
- Assessment of deals with start-ups

START-UP

Cooperation with start-ups in market

Building the digital culture

- Employee journey
- BYOD - dedicated usage of apps for information
- 'Emotional' information on progress of projects
- Make organization to stand behind lighthouses
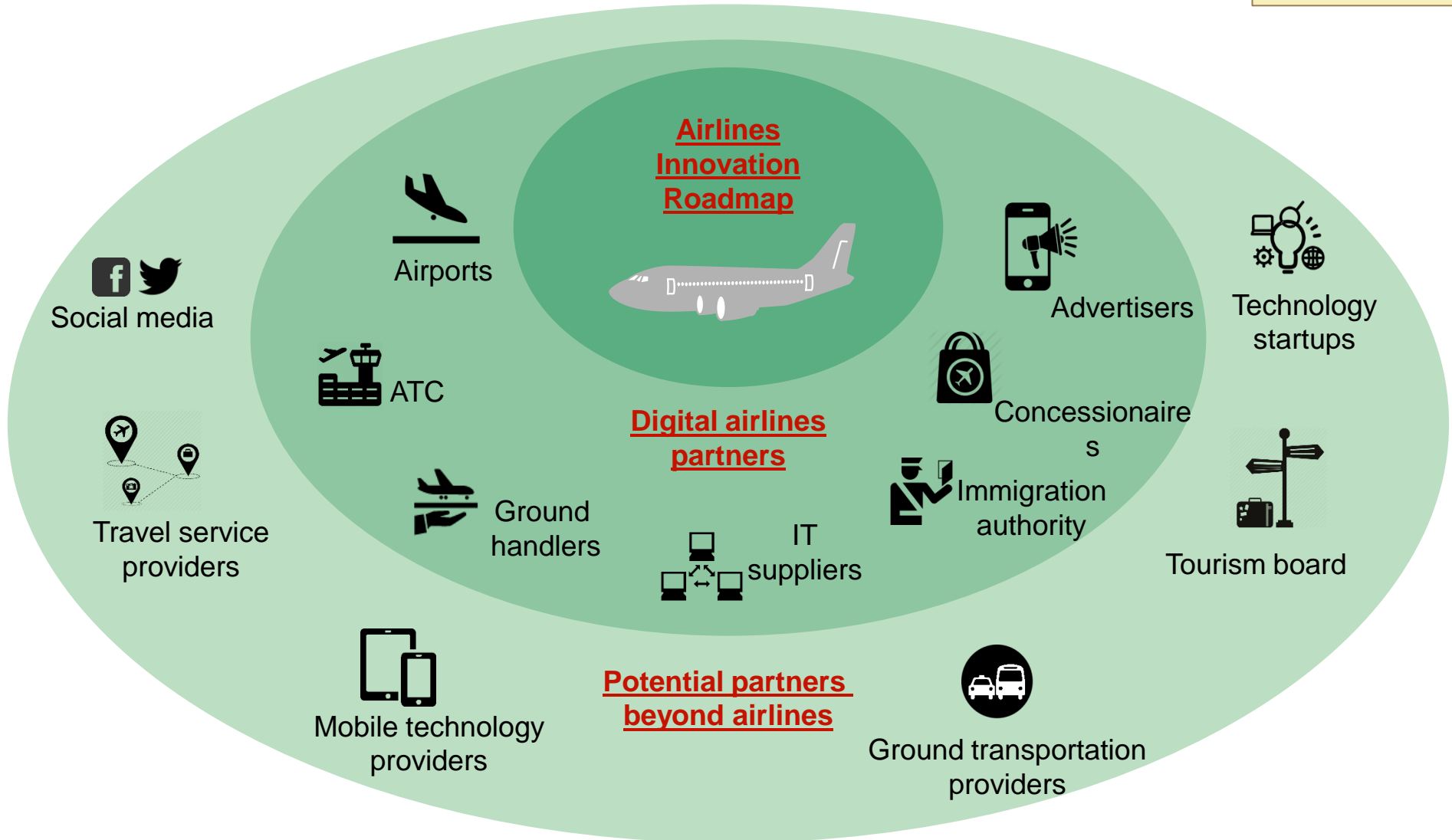
Online and offline information

Support the management

- Foster expertise and skills of managers
- Delegate to lab// campus/ start-up for learning

Vision for entire unit

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Need to develop an eco-system vision and partnerships

Illustrative

Airlines Innovation Roadmap

Airports

Social media

ATC

Travel service providers

Ground handlers

Digital airlines partners

IT suppliers

Advertisers

Technology startups

Concessionaires

Immigration authority

Tourism board

Mobile technology providers

Potential partners beyond airlines

Ground transportation providers

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Organising for digital innovation involves a broad spectrum of choices & considerations

Key design choices

1 **Structure**

Fully embedded in BUs / geographies	**Centralised** corporate Digital **CoE**
Led by **junior mgmt**	**C-level** representation/mgmt
Integrated into actual organization	**Stand-alone** digital org

2 **Governance**

De-central **BU control**	**Activist centralised** control
BU-driven budgets & investments	**Corporate** driven budgets & investments
BU-led execution	Corporate/**central-led execution**

3 **Capabilities & People**

In-house capability	**Out-sourced** capabilities innovation **Partnerships**
Innovative, fast paced culture with **ad hoc incentives**	**Corporate** homogeneous Same **shared incentives**

Examples of leading Innovation Labs

Nike innovation kitchen

- "… an island apart from the daily grind of production, marketing, and selling. **We're not so much tied into the sales of shoes. We're here to improve athletic performance**."
- New products launched
  - Nike FuelBand : Digital activity tracker
  - and ancillary business line
  - Nike FlyKnit: New materials allowing
  - for better fit and breathability

- **"Building the next generation of e-commerce"**
- Walmart acquired Kosmix, a small WC-based start-up for their "social-genome" tech
- **New products** launched
  - Lout, Joi, Flod, Mupd8, Lumbar, Thorax
  - Products are mainly frameworks, plugins and tools for building large scale e-commerce applications

- **Innovation factory** at Google run by "Captain of Moonshots" dedicated to **making major technological advancements, which will graduate to become important key businesses**"
- Projects include:
  - Driverless cars
  - Google Glass: eyewear with screen and camera
  - High-altitude WiFi balloons
  - Glucose monitoring contact lenses

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