

“La Trasformazione Digitale delle Aziende”

Gli smart products e la “servitization”



IBM oggi nel mondo



Fondata nel
1911

Presente in
175 Paesi

380.000
dipendenti

Ricavi 2014
92.8\$B



Sede centrale ad *Armonk, NY*
www.ibm.com

**In oltre 100 anni di vita, IBM ha contribuito
al progresso e all'innovazione di imprese,
istituzioni pubbliche e cittadini.**

Ricerca e Sviluppo

Centri di Ricerca IBM



5.4 B\$ in R&D (6% del fatturato)

13 centri di Ricerca in **5** continenti,

fra cui quello di **Zurigo** guidato dall'italiano Alessandro Curioni

Per **22** anni consecutivi l'impresa leader nei brevetti

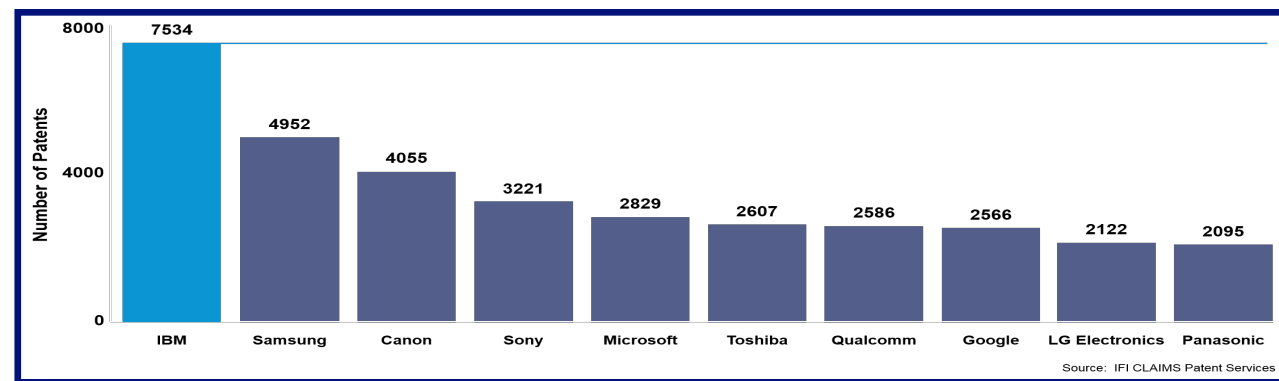
7.534 brevetti U.S. nel 2014

8.500 IBM inventori in 43 paesi

Concentrati in aree strategiche:

Cloud Computing, Analytics, Mobile, Social, Security e Cognitive Computing.

5 premi Nobel



Una tradizione di ricerca di altissimo livello

								
1944: Mark 1	1948: SSEC	1956: RAMAC	1957: FORTRAN	1964: System/360	1966: One-Device Memory Cell	1967: Fractals	1970: Relational Database	1971: Speech Recognition
								
1973: Winchester Disk	1979: Thin Film Recording Heads	1980: RISC	1986: Scanning Tunneling Microscope	Nobel Prizes: 1987: High Temperature Superconductivity	1990: Chemically Amplified Photoresists	1994: SiGe	1993: RS/6000 SP 1996,97: Deep Blue	
								
1997: Copper Interconnect Wiring	1998: Silicon-on-Insulator	1998: Microdrive	2002: Millipede	2004: Blue Gene the fastest supercomputer in the world	2006: 5-stage Carbon Nanotube Ring Oscillator	2008: World's First Petaflop Supercomputer		

IBM Watson inaugura l'era del Cognitive Computing

IBM Watson

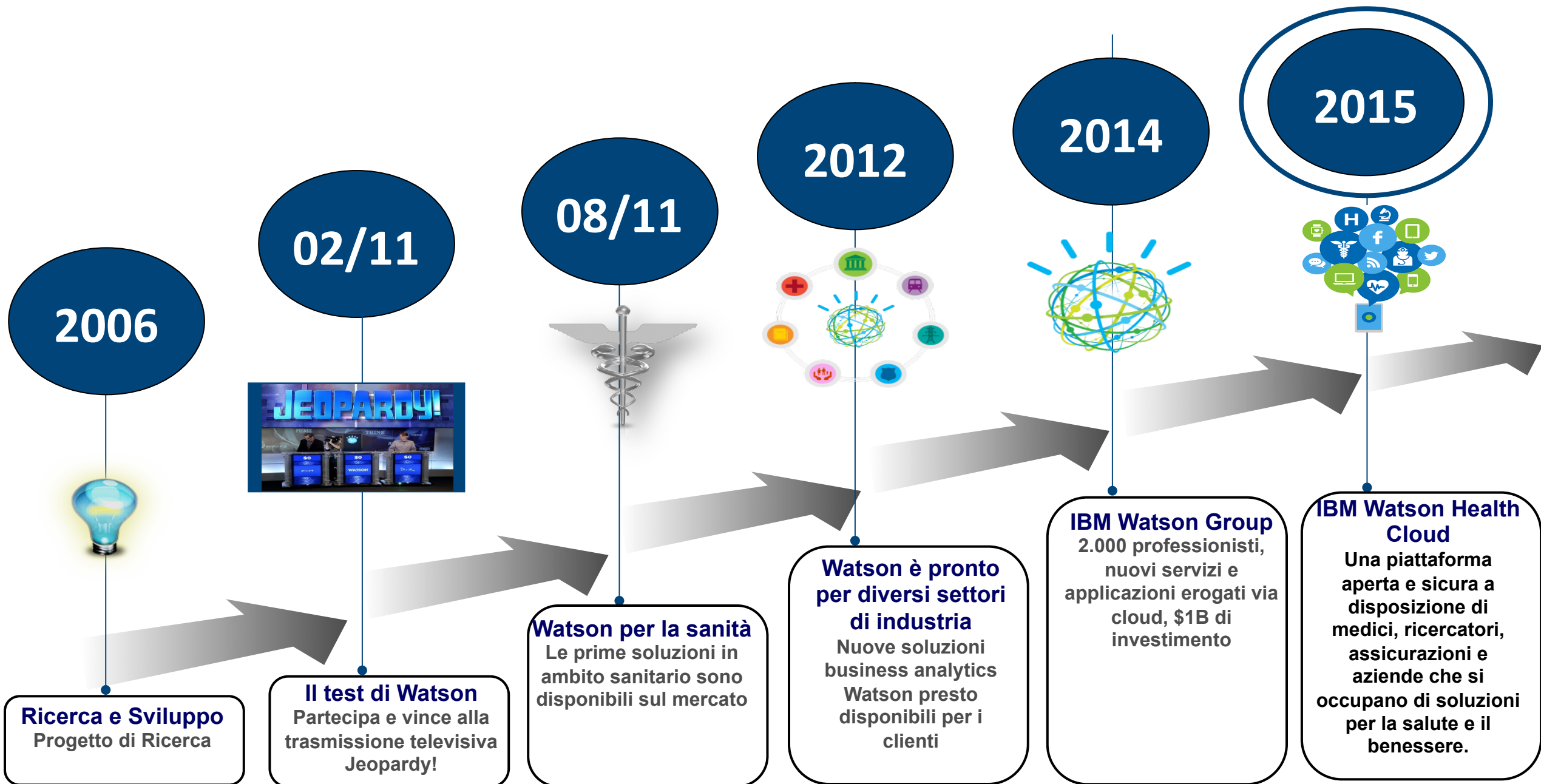
è il primo sistema che:

- 1 Capisce il linguaggio naturale e umano
- 2 Genera e valuta l'ipotesi migliore per ottenere la risposta giusta
- 3 Impara basandosi sulle selezioni e sulle risposte dell'utente



14 febbraio 2011: IBM Watson partecipa alla trasmissione televisiva statunitense Jeopardy! battendo due concorrenti campioni delle passate edizioni del programma rispondendo a domande fatte con linguaggio naturale con velocità e precisione.

Watson: dalla ricerca alla creazione di un nuovo mercato



IBM e i suoi clienti a livello globale



+90 tra le **100** banche più importanti del mondo utilizzano le soluzioni IBM per gestire le proprie attività



9 delle **10** più importanti compagnie petrolifere e del gas nel mondo sono clienti IBM



IBM lavora con **9** delle **10** più importanti aziende elettroniche del mondo



80% dei **50** rivenditori più importanti del mondo gestiscono il loro business su sistemi informatici IBM



92 delle **100** più importanti organizzazioni sanitarie al mondo lavorano con IBM



22 delle **25** più importanti aziende di largo consumo utilizzano soluzioni IBM per gestire il proprio sistema informatico



IBM lavora con **9** delle **10** più importanti aziende di telecomunicazione nel mondo



Più di **225** governi e enti locali in tutto il mondo si affidano a un mainframe IBM per supportare le Polizia, i Vigili del Fuoco, utility, servizi igienico-sanitari, parchi e ospedali

Innovation and Product Development, what's the trend?

1980



Promo Renault anni 80

<https://www.youtube.com/watch?v=v5naJtm0Eys>

2015



Promo Ford attuale

<https://www.youtube.com/watch?v=YKelrreOMfE>

Trend?



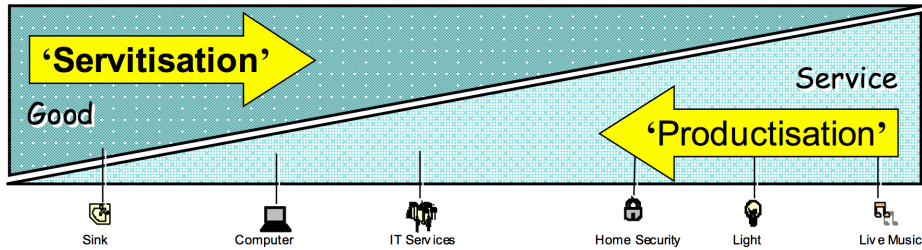
Promo Car2Go attuale

https://www.youtube.com/watch?v=o0AdDDv_IAE

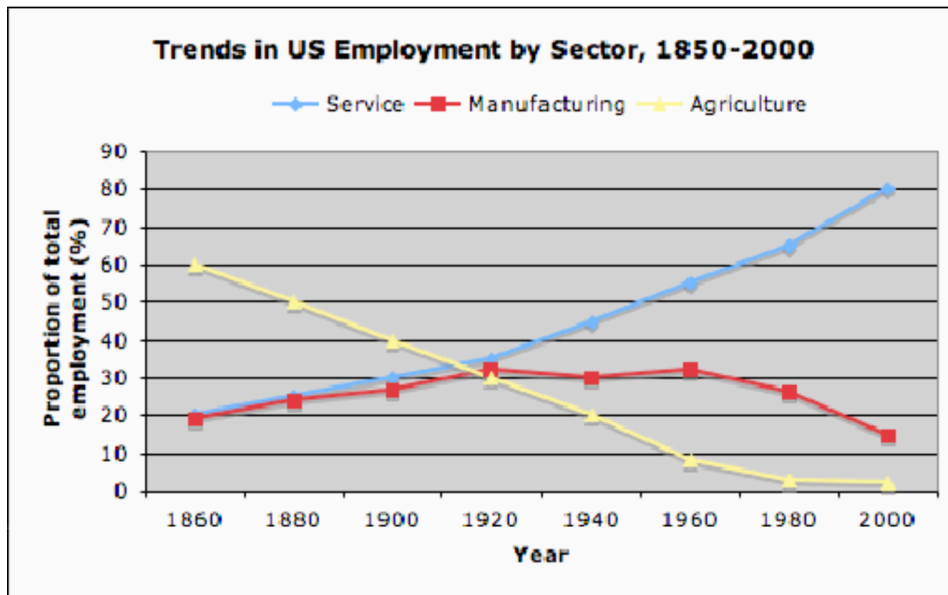
Product and Consumer (Client, Customer or User, perhaps Citizen)?

Innovation and Product Development, what's the trend?

Ipotesi nel 2008



- 'Servitisation' – moving on the continuum from 'good' to 'service'
Shift of companies from "Pure Product" towards delivering "Services with Product as platform" or "Pure Services"



- **Proporre e vendere auto come "flotte gestite" (fleet management)**
- Proporre Hardware/Computer come flotte gestite o "a consumo" (pay per use)
- Proporre Software/applicativi a consumo ("on demand")
- **Proporre il prodotto "polizza di assicurazione" a consumo (payasyoudrive)**
- Proporre il prodotto per il supermercato (CPG) come "scaffale gestito dal fornitore" (eventualmente anche con etichetta personalizzata=private labeling)
- **Proporre un aereo civile (ma anche militare!) attraverso "costo per ora di volo"(pay as you fly)**
- **Proporre una macchina movimento terra (o macchina utensile?) a "ore di utilizzo" (pay as you work)**
- Proporre il servizio di manufacturing invece della fornitura di impianti/macchine produttive (pay as you need)
- Proporre una centrale elettrica come "KWH erogati" (in funzione dell'utilizzo reale nel tempo) anziché una centrale più un contratto di manutenzione
- Proporre il "servizio" di potersi creare il prodotto personalizzato(prosumership).....
- Vendere il prodotto come "esperienza"(fashion, luxury...

Data is
transforming industries and
professions.

CONSIDER:

Data flows from every device, replacing guessing and approximations with precise information. Yet 80% of this data is unstructured; therefore, invisible to computers and of limited use to business.

By 2020,

1.7 MB

of new information will be created **every minute** for **every human being** on the planet.

HEALTHCARE DATA

99%
growth by 2017

88%
unstructured

Healthcare data comes from sources such as:



Patient
Sensors



Electronic
Medical
Records



Test Results

UTILITIES DATA

93%
growth by 2017

84%
unstructured

Utilities data comes from sources such as:



Utility
Sensors



Employee
Sensors



Location Data

GOVERNMENT & EDUCATION DATA

94%
growth by 2017

84%
unstructured

Government & education data comes from sources such as:



Vehicle Fleet
Sensors



Traffic
Sensors



Student
Evaluations

MEDIA DATA

97%
growth by 2017

82%
unstructured

Media data comes from sources such as:



Video
and Film



Images



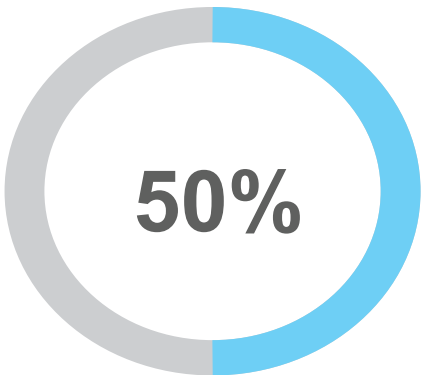
Audio

The world is
being reinvented
in code.

CONSIDER:

The world is being rewritten in software code, and cloud is the platform on which the new digital builders—from developers to business professionals—are reimagining everything from banking to retail to healthcare.

100,000,000
lines of code in a new car
5,000,000
lines of code in smart appliances
1,200,000
lines of code in a smartphone
80,000
lines of code in a pacemaker



of B2B collaboration will take place through web APIs next year.

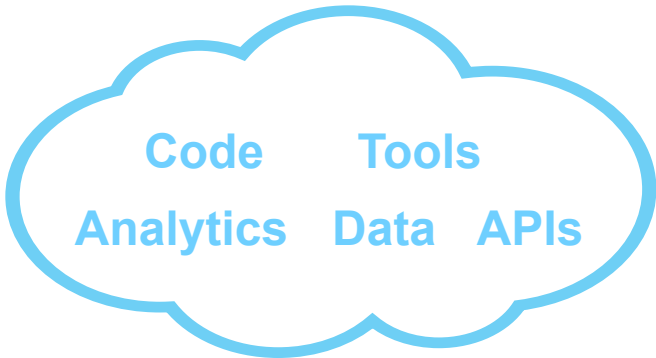
Smart TVs represented 27% of all TV sales in 2012; by 2018, they will represent 82%.



Sensors for industrial asset monitoring and management will grow from just over 15M units in 2014 to over 40M units in 2018



Smart LED lighting will grow from 6M units in 2015 to 570M units in 2020, used for safety communication, health, pollution and personalized services.



By 2020, there will be 925M smart meters installed worldwide, more than double the 400M in 2014.



By 2017, there will be 1B connected things in smart homes, including appliances, smoke detectors and cameras.



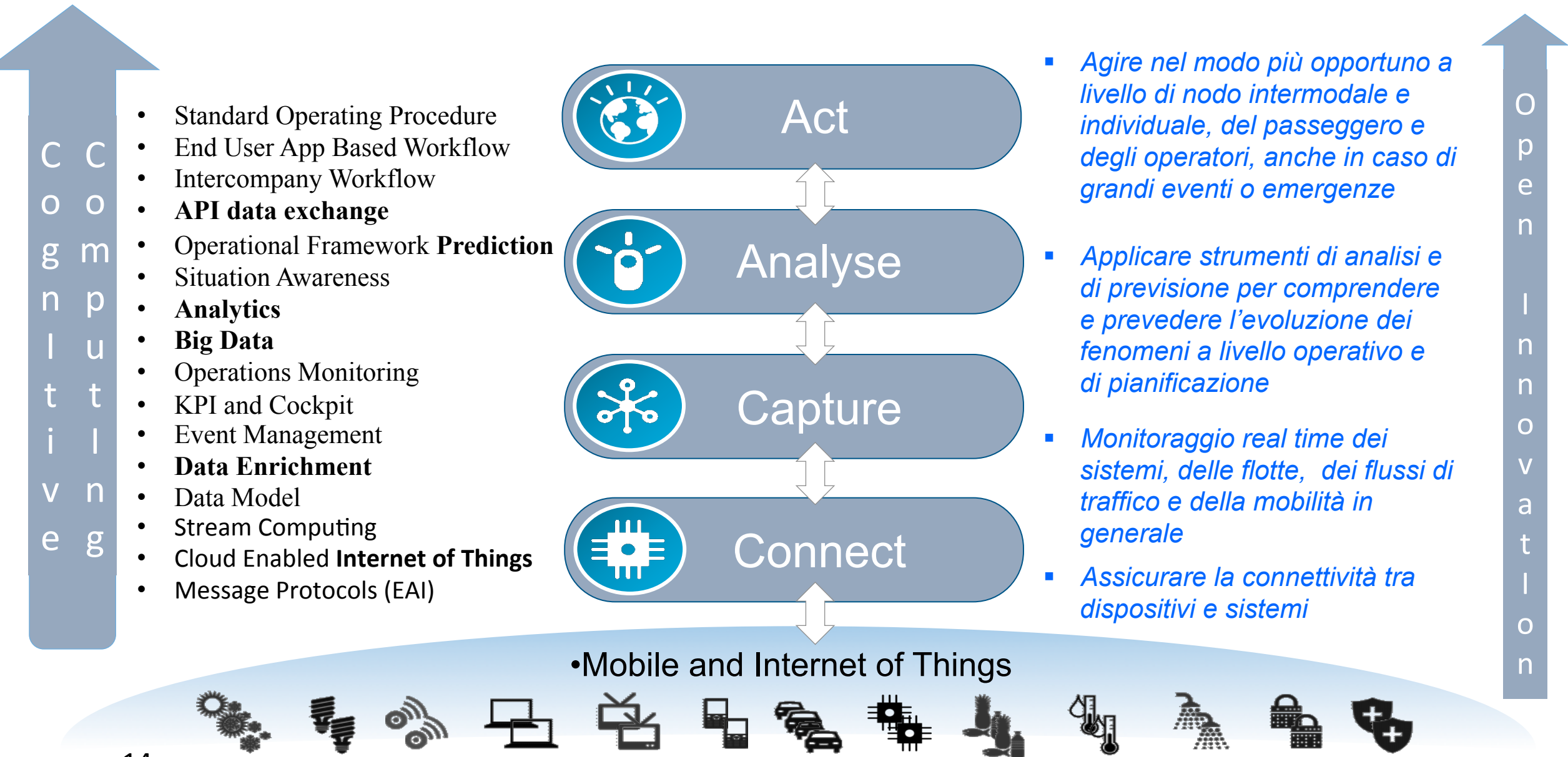
Smart traffic sensors and other devices installed in smart cities will grow from 237M units in 2015 to 371M in 2017.



Revenues for smart grid sensors will grow ten-fold from 2014 to 2021.



Technology Trends have been applied to complex ecosystems management



Aircraft Engine Manufacturer - Analytics Case

An aircraft engine manufacturer uses predictive analytics to prevent costly engine events and operational disruption

100% prediction

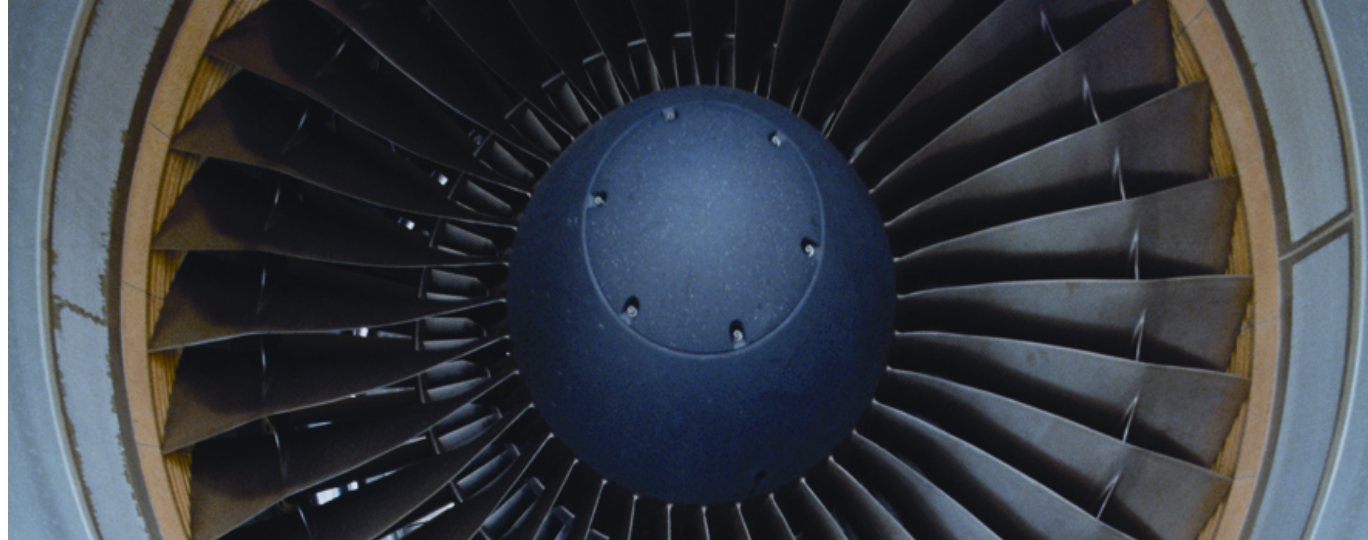
success of aircraft-on-the-ground events for high-risk engines

97% accuracy

in predicting engine events that lead to airline disruption

USD150 million

in extrapolated cost savings to airlines if prediction had been available in the previous year



Business challenge: This US-based aircraft engine manufacturer collects a vast amount of data about its engines through various databases and sensors, but it had no holistic way of integrating and analyzing the information to proactively address engine issues.

The smarter solution: An analytics platform creates predictive models that automatically alert the manufacturer to different types of impending engine events. These alerts, and a 360-degree dashboard visualization of engine-fleet health and risk status, enable the company to take proactive measures such as ordering and arranging preventive maintenance. These can help prevent a range of engine issues and potentially help the company's customers avoid millions of dollars in costs associated with grounded planes.

Airbus: Servitization is enabled by Internet Of Things, Analytics and Cloud

Mixed fleet services and solutions for

Airbus and OEMs



Maintenance



Engineering



Flight Operations



Monitor KPI

Data gathering

- A/C flight data
- A/L fleet information
- OEM knowledge

Data value extraction

- Filter & correlate
- Report & monitor
- Simulate & predict
- Optimize

Cross domain collaboration

- OCC
- MCC / engineering
- Maintenance & logistics

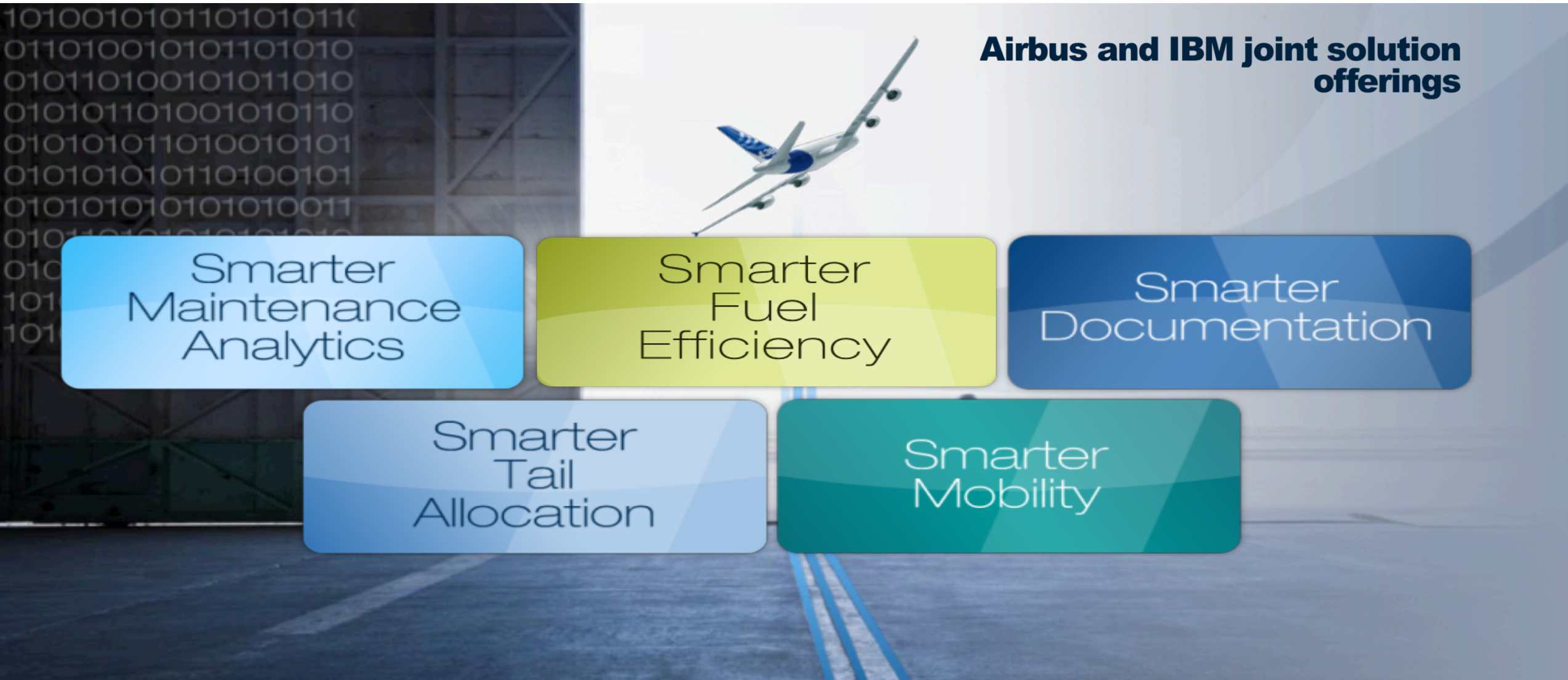
Smarter Fleet
Hosted by
Airlines

Smarter Fleet
Cloud / SaaS



Synergies and expertise sharing: We give value to your data

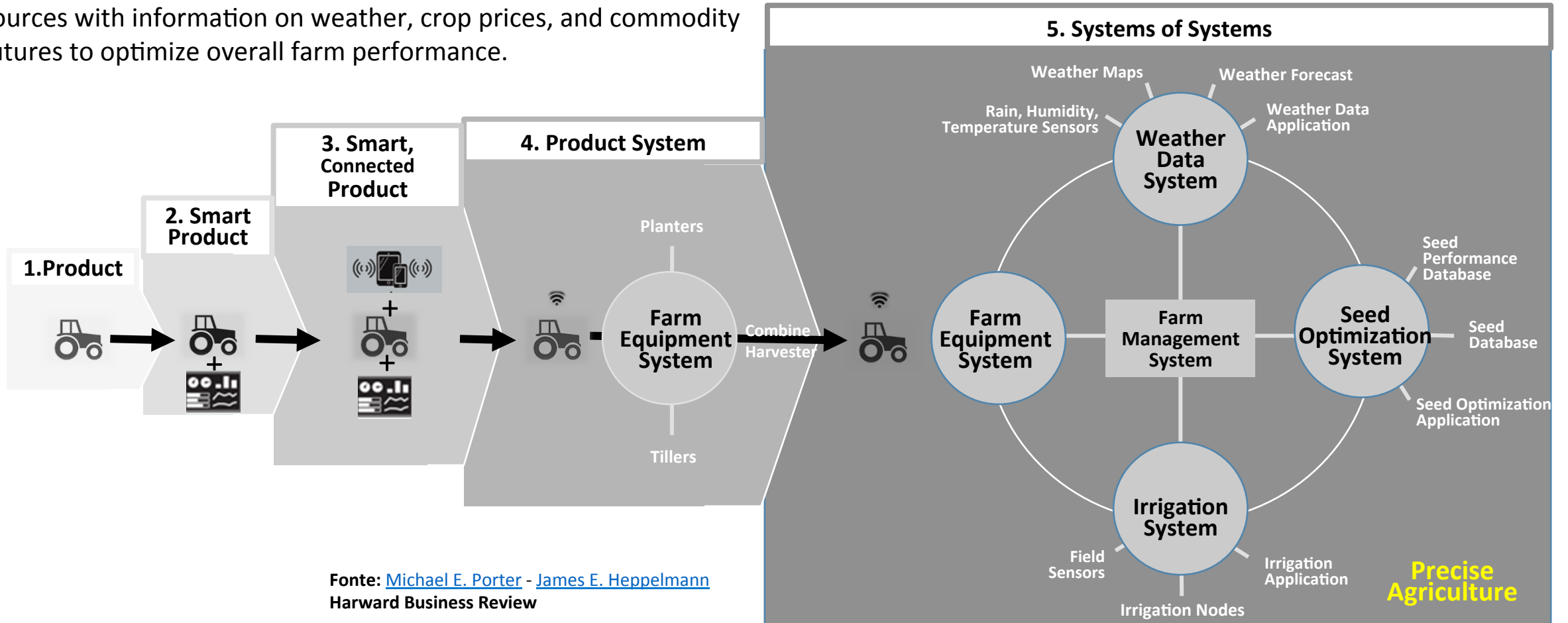
Airbus: what services to whom



„Connected Machinery“

Concept & Market

John Deere and AGCO, for example, are beginning to connect not only farm machinery but irrigation systems and soil and nutrient sources with information on weather, crop prices, and commodity futures to optimize overall farm performance.

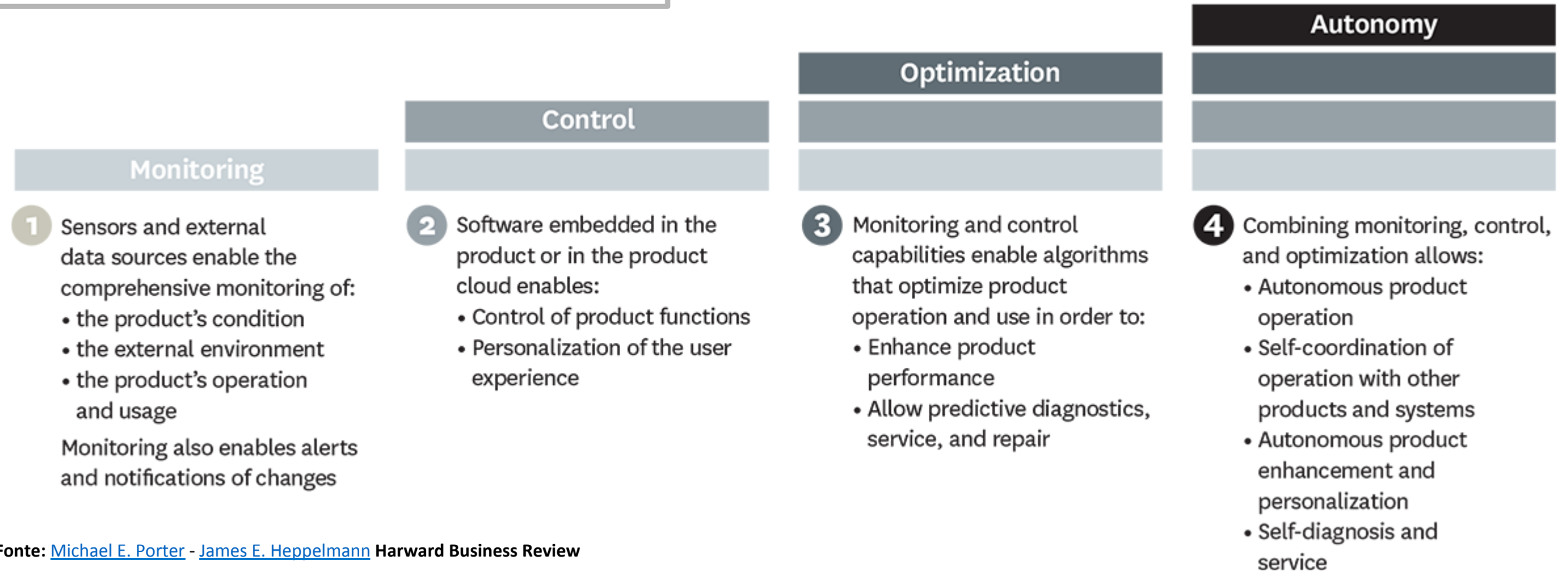


Fonte: [Michael E. Porter](#) - [James E. Heppelmann](#)
Harvard Business Review

IoT - le nuove possibilità offerte dai prodotti connessi

I benefici per le aziende manifatturiere

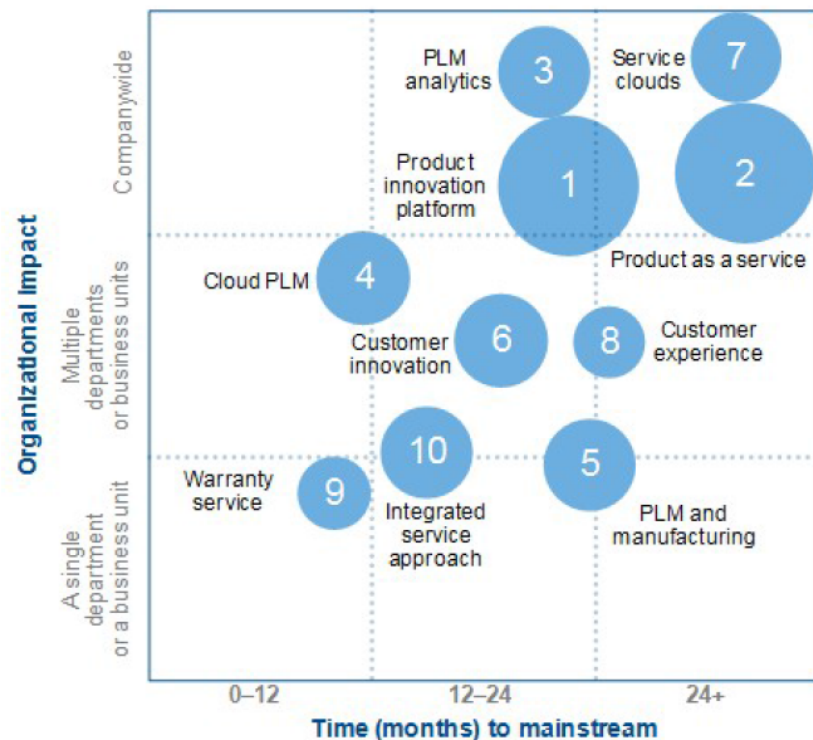
1. Nuovi Modelli di Business – “Servitization”
2. Customer Intimacy
3. Sviluppo Prodotto
4. Leadership dell’ ecosistema



Trend di innovazione nei prodotti e servizi industriali

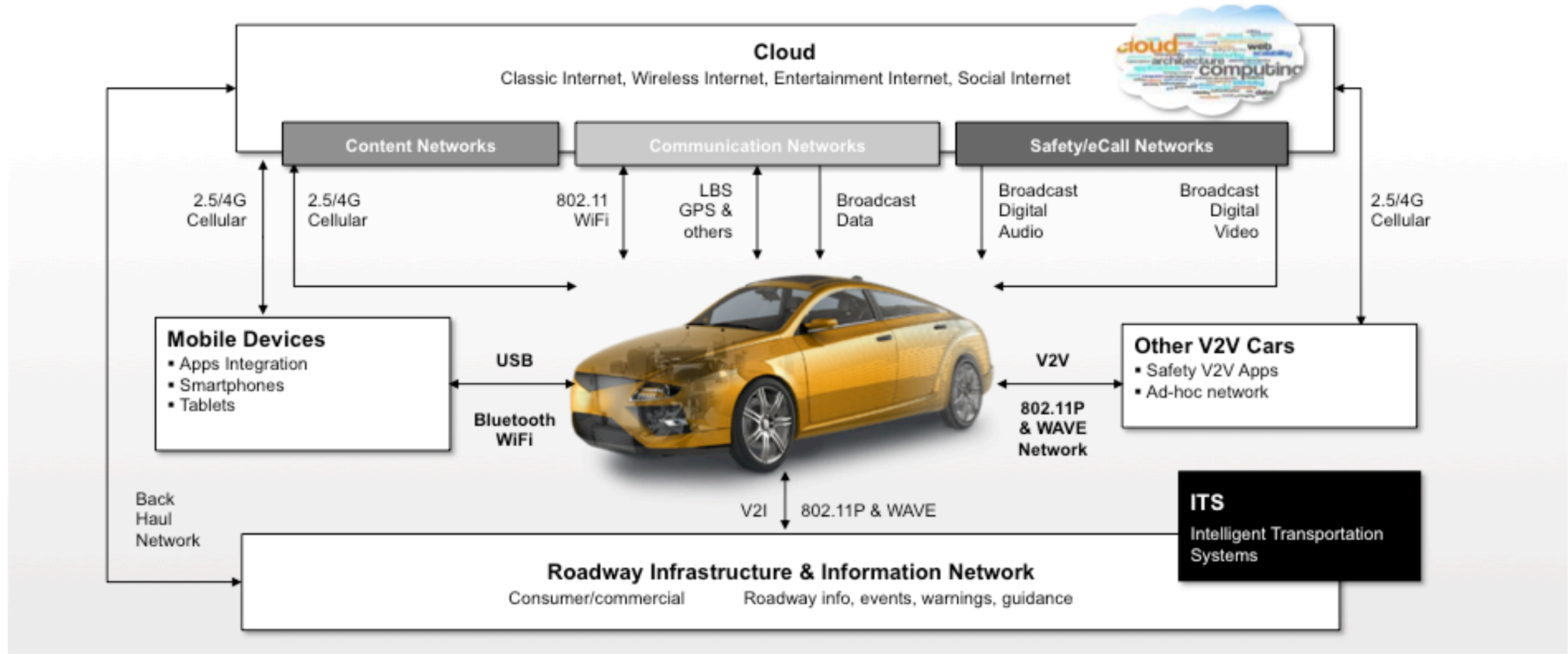
Worldwide IDC Manufacturing Insights' Product and Service Innovation 2015 Decision Imperatives

1. By 2017, 70% of global manufacturers will offer connected products, driving the need for systems engineering and a cross-enterprise product innovation platform.
2. By 2018, 40% of the top 100 discrete manufacturers and 20% of the top 100 process manufacturers will provide product-as-a-service platforms.



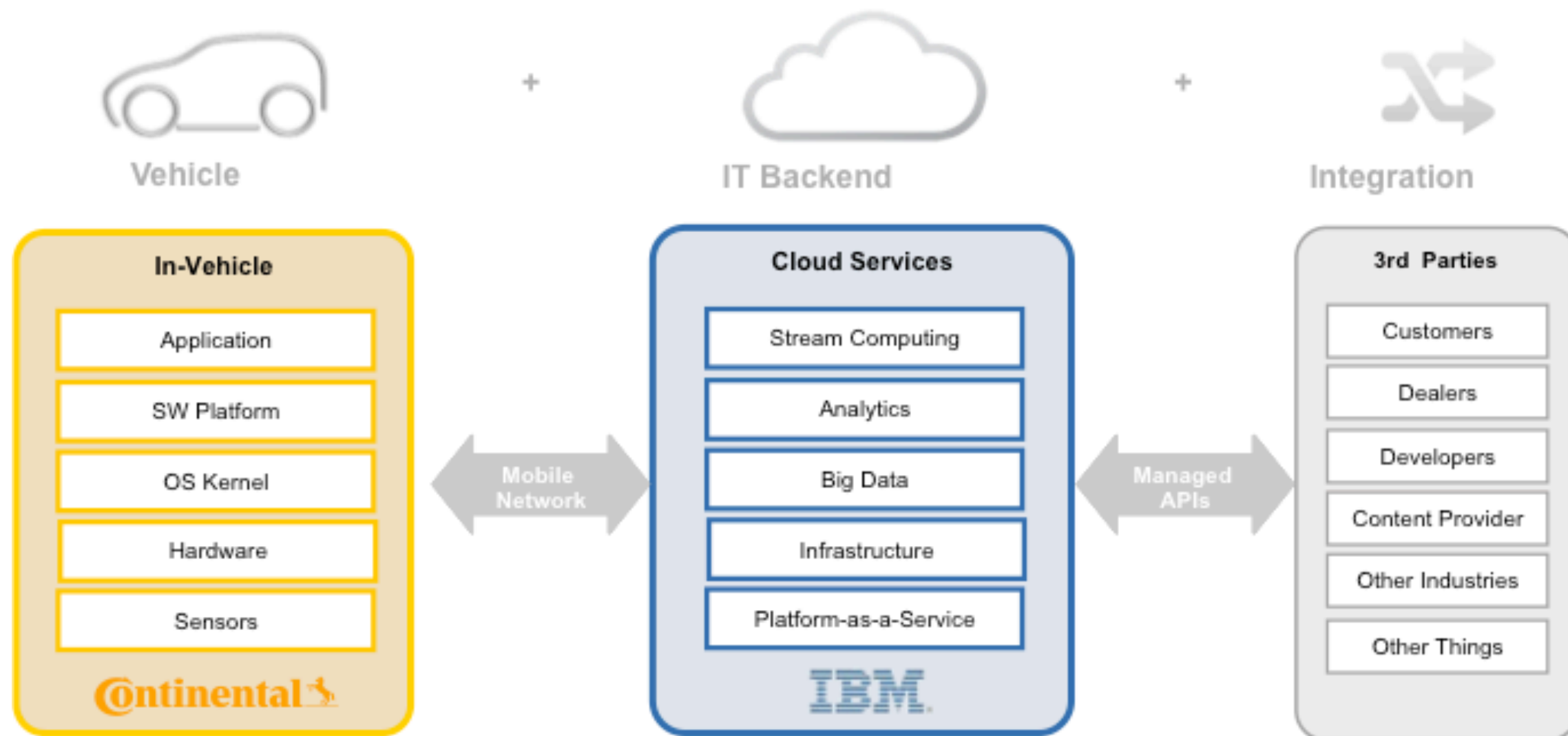
3. By 2017, 40% of global manufacturers will make analytics a top PLM investment, driven by product complexity, systems engineering, and multidisciplinary PLM.
4. By 2016, 50% of new product life-cycle management (PLM) initiatives will be cloud and subscription models because of the need to collaborate globally and respond more quickly to customer demand.
5. By 2017, 60% of discrete manufacturers will leverage manufacturing process planning and MES data in PLM systems to ensure product and process quality.
6. By 2017, 75% of global manufacturers will use ideation and social media tools in PLM systems to extend innovation across the value chain to customers.
7. By 2016, only 20% of manufacturers will have an integrated approach to delivering service that allows them to directly measure its impact on customer loyalty and revenue.
8. By 2017, 75% of leading manufacturers will respond to a rise in customer centricity by increasing standards for customer service excellence and doubling investment in aftersales, customer-facing technology.
9. By 2015, warranty service will rise to strategic importance as manufacturers use warranty and service touch points to boost profit margins by 5 percentage points.
10. By 2018, 65% of leading manufacturers will be leveraging information shared in the service clouds to improve service effectiveness and resolve channel conflict.

Connected Car



Source: Infotainment: Thinking Outside the Center Stack How Much Connectivity? Egil Juliussen, Ph.D. Principal Analyst, Infotainment & ADAS, IHS Automotive Sept. 20, 2012

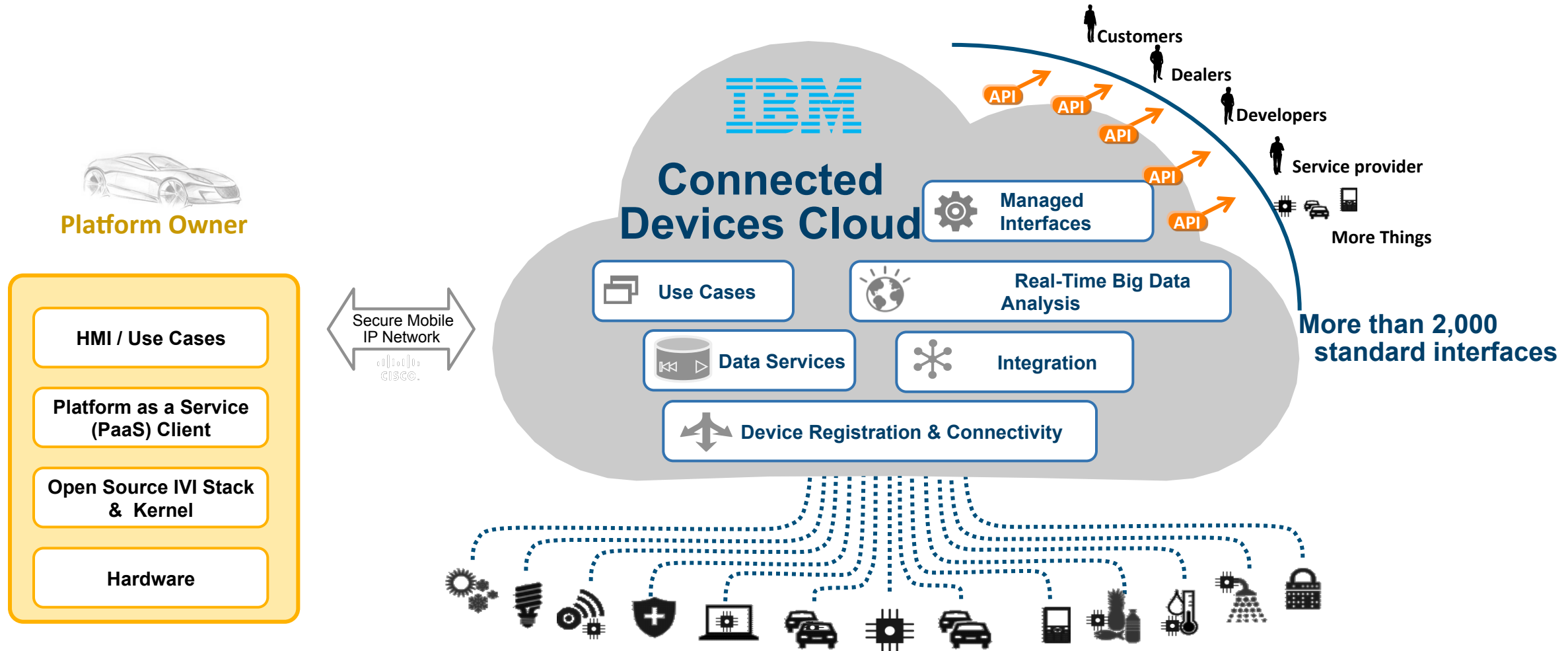
Platform and ecosystem



Three Keywords: IoT, Analytics, Cloud

Daimler Interview on Car2Go technologies

<https://www.youtube.com/watch?v=70HLQ-17WAg>



What PSA Says



Today, PSA Peugeot Citroën is seeking to bring telematics units into widespread use, so that all its vehicles are able to communicate. To meet the expectations of increasingly connected consumers, the Group is developing a new generation of open-ended telematics platforms.... the new platforms are designed to deliver real digital continuity with a smartphone or tablet. This technology will make it possible to quickly roll out new services along with an **app ecosystem**.

From 2017, PSA Peugeot Citroën will launch innovative solutions to position Peugeot, Citroën and DS vehicles at the heart of the internet of things. For example, a technology such as Qeo could enable a dialogue with domestic appliances and remotely control, for example, the heating or television.