



Big Data

How Big Data is changing our World...

Varadero, Cuba
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Elín Martínez
Sr IT Business Executive Manager LATAM



Elín Martínez

Senior Regional IT Executive Manager

Senior IT Executive with 18+ years of experience within the IT industry helping companies to transform their businesses through the application of new technologies and best practices. His engagement into the Cloud Computing, Data Centers, Financial and Government Digital Transformations and Business Consulting practices has provided to Mr Martínez a strong experience on defining ICT solution strategies with proven business differentiators to his customers. Mr Martínez's main target: Positioning technology as a business partner instead of a costly investment.

Worldwide & International Keynote Speaker and Panellist at Gartner USA, CeBIT Germany, Futurecom and CIAB FeBraBan Brazil, DCC Summit and Data Center Dynamics across Latin America countries. EBG IT support and guidance for 26 countries with more than 15 years of cross-cultural experience in Asia, European and LATAM.

Relevant Experience

- 2014 – Present. Sr Regional IT Executive Manager – Huawei LATAM
- 2007 – 2014. Sr Advisory Consultant /IT Transformation Champion – EMC² LATAM
- 2000 – 2007. Infrastructure and Processes Consultant – General Electric USA
- 1999 – 2000. Infrastructure and Systems Admin. Mexican Government

Credential & Communication Skills

Executive MBA (ITAM, Mexico) – Graduated with Special Mention

Master on Global Management (Tulane University, US) – GPA 4

Over 16 World-wide company recognitions :

9 VoC (General Electric) from 2001-2007, Platinum Player and Excellence Award (EMC²) from 2007-2014 , 2 times Future Star and 3 Times Gold Medal Awards (Huawei) from 2014 - Present

Data Center Professional, Specialist and Operations Management Certified

ITIL Practitioner Certified

Spanish, English and Portuguese



Specialities:

- SDDC²
- XaaS Cloud Strategy
- Data Center Solutions
- IT Business Models
- Business Consulting
- Marketing Competition
- Information Lifecycle Management



Big Data

How our daily work has changed...?

**Data is the new oil. Data is just like crude.
It's valuable, but if unrefined, it cannot really be
used ...**

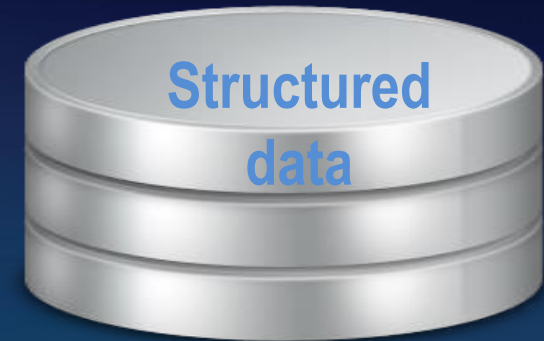
Why Big Data?



BIG, BIGGER, BIGGEST...

Source: IDC Digital Universe Study, May 2015

20%



Structured data

80%



Unstructured

Kilobyte, Megabyte, Gigabyte, Terabyte, Petabyte, Exabyte, **Zettabyte (1000⁷)**, Yottabyte

Where Does Big Data Come From?



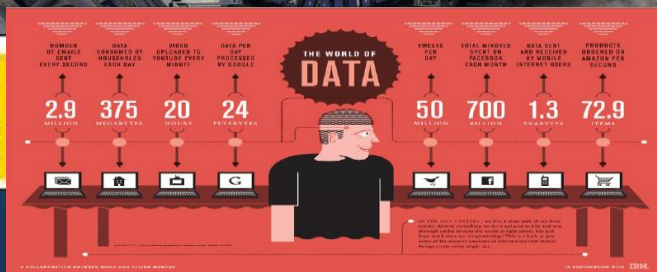
30 billion RFID tags until
now (1.3 billion in 2015)

4.6 billion
camera phones around the
globe



300 million
active users each day

Over 100
million
messages generated
each day



Social data

Over 25 TB
of log data
generated each day

76 million smart instruments in
2009...
200 million smart instruments in 2014

Machine data

Hundreds of
millions of
devices that
support GPS
sold each year
Over 3
billion netizens at
the end of 2014



Where Big Data can be applied?

What benefits should I foreseen?



National Vision

Poverty reduction

Harmony Creation

Country Modernization

Government Transformation

Social & Economical

Modern Agriculture



1. Water savings
2. Energy savings
3. Weed and disease reduction
4. Improved production on marginal land

Modern Industry



1. Improved productivity and higher value-added in firms
2. Agile responsibility according to market requirement
3. Sustainable industry transformation

Modern Service



1. Platform-as-a-Service will eliminate barrier for new services
2. Online-to-Offline model will reform the commerce of the country

Human and cultural

e-Education



1. Sharing experience from excellent teacher with high quality courseware
2. Centralized teaching management and assessment

e-Health



1. Boundary-less sharing of complete EMRs, achieving scientific, accurate, and in-time treatment
2. Patient-oriented front-desk improves the healthcare efficiency

Safe-City



1. Reduce crime with All-around Prevention
2. Improve detection rate by Accurate Combating
3. Shorten Response Time with efficient command center

Political and administrative

E-Administration



1. Improving government processing
2. Cutting process cost
3. managing process performance

E-citizens



1. Broader remit like talking to citizens, listen to citizens
2. Improving public services

E-Society



1. Working better with business,
2. Developing communities
3. Building partnership within the country

Connected Environment, Shared Information

Reliable, Efficient, Sustainable and Secure ICT Infrastructure



1. Cost Reduction

Can bring significant cost advantages when storing large amounts of data

2. Faster, better decision making

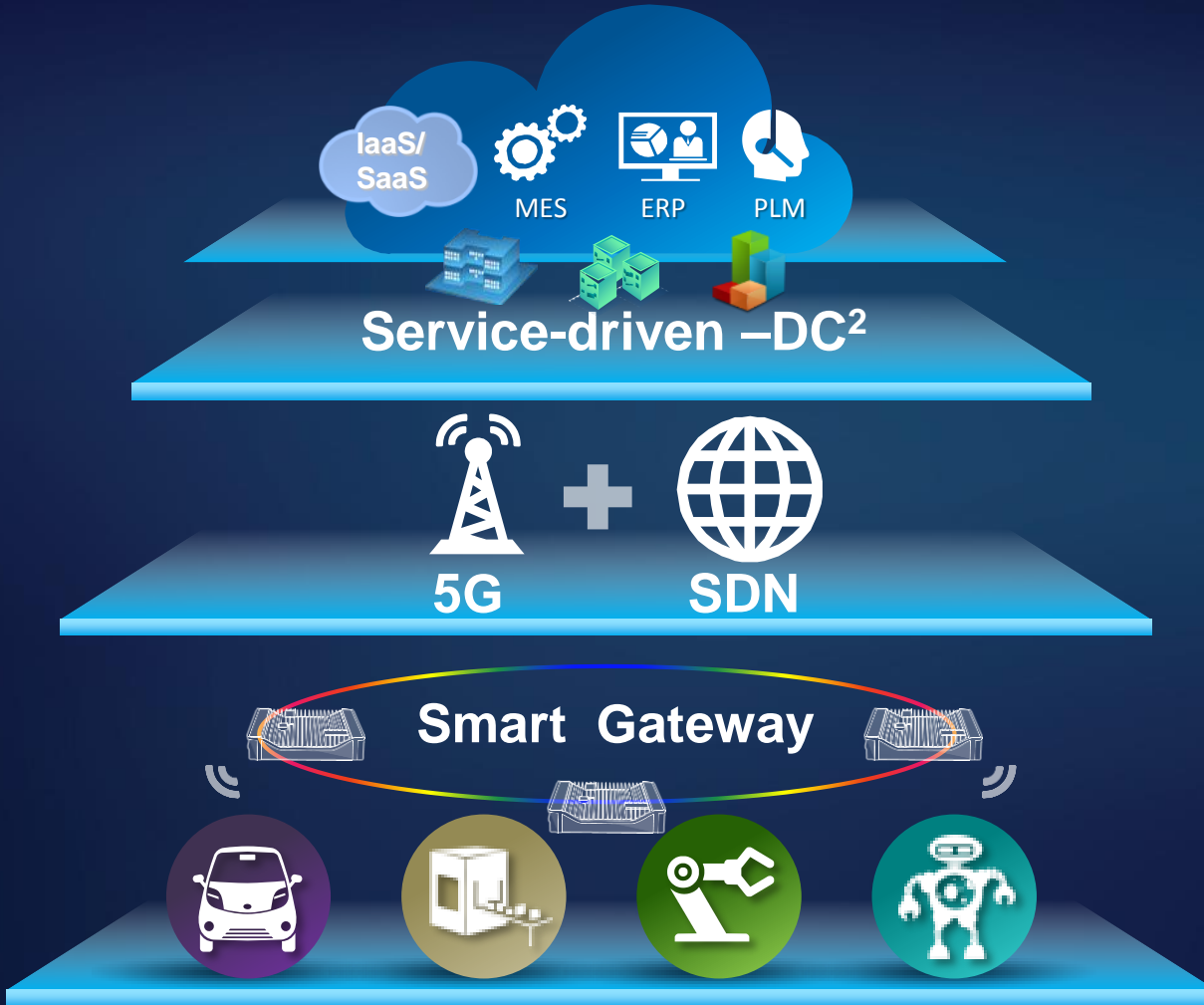
With the proper engine speed and in-memory analytics, a solution is able to analyze information immediately and make better decisions based on the result.

3. New products and services

With big data analytics, more companies are creating new products to meet customers' needs.

Where Big Data plays in a transformation?

Strategic Pillar



Cloud: DC² + Big Data

Software-defined, hardware reconfiguration, business-driven, and data innovation

Pipe: Low-latency, high-concurrency, and agile networks

5G and agile network

Device: Smart IoT gateway

The image features a vibrant blue background with a futuristic digital aesthetic. In the upper left, a glowing globe is surrounded by various data visualization elements like charts and graphs. A hand in a dark suit jacket is shown interacting with a transparent tablet that displays a 3D cityscape with greenery. The overall theme is the evolution of big data and digital technology.

Big Data Evolution

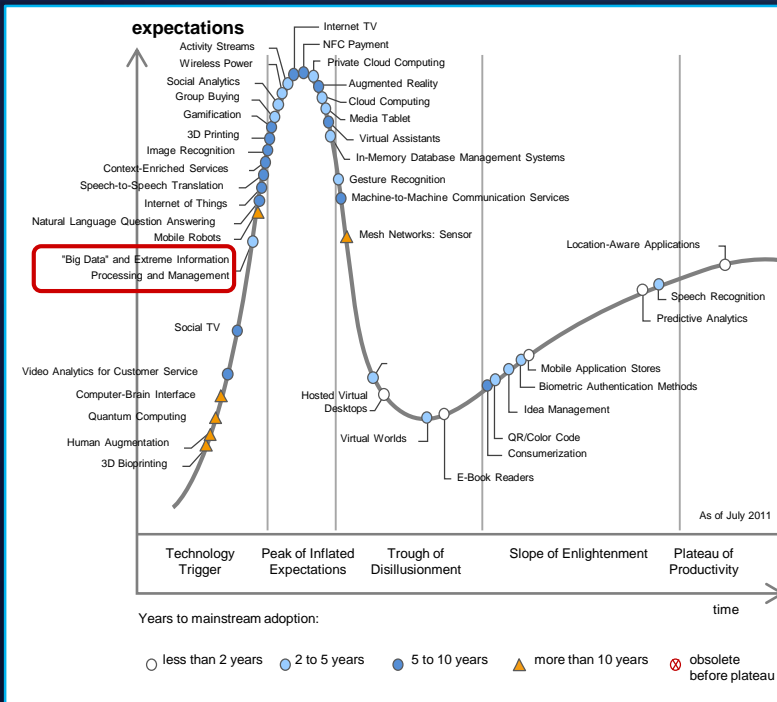
How did start? How is it going? Where is it go?

Big Data Trends

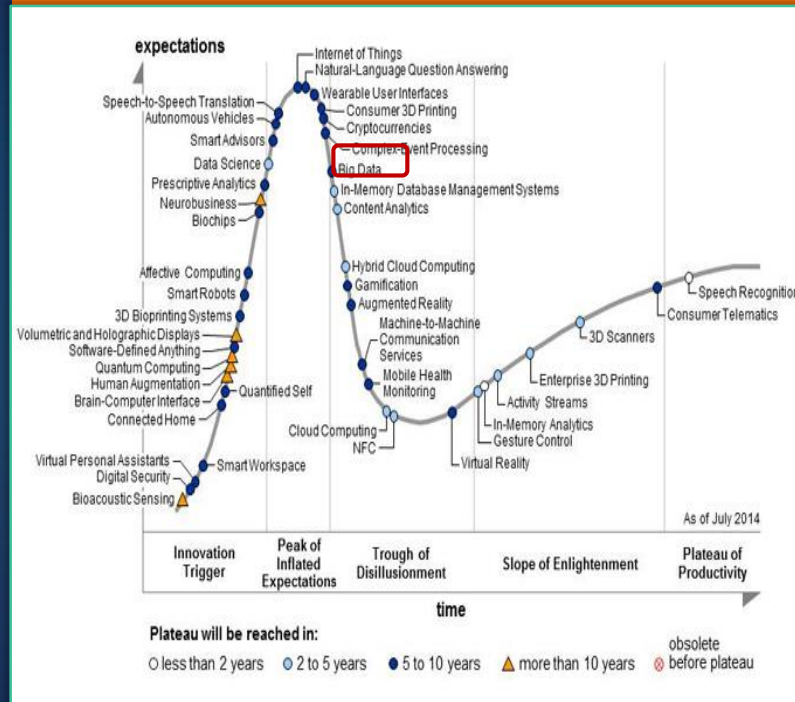
Overcoming disillusionment and becoming mature for large-scale commercial use



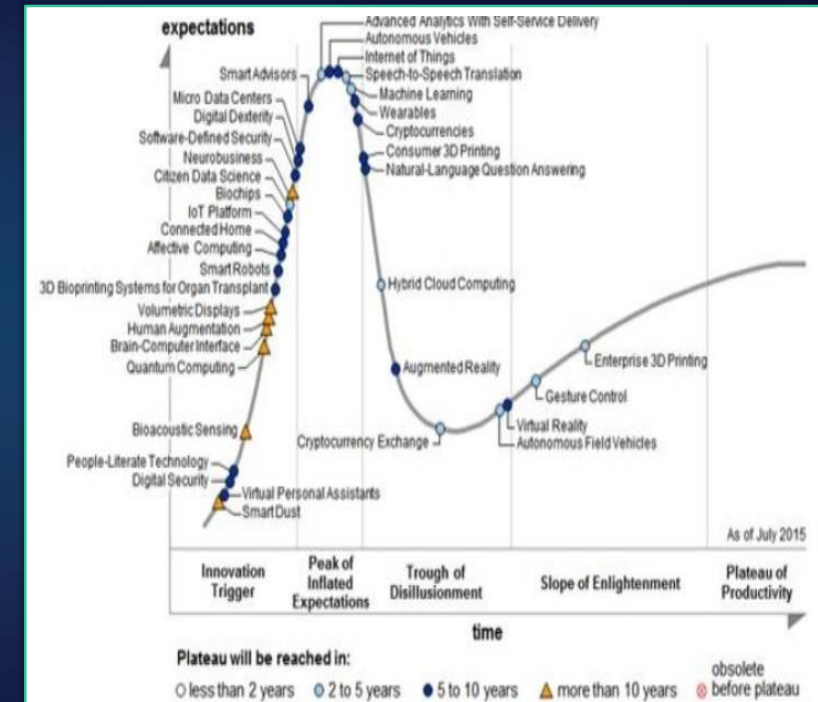
2011: New technology



2014: Cross the peak of inflated exceptions



2015: overcome disillusionment & become mature



50% of the enterprises have invested in and used big data, 33% of the enterprises are planning to use and continuously invest in Big Data to gradually promote the development of the Big Data industry. Cloud computing and Big Data are no longer displayed in the 2015 chart, indicating that they are not emerging technologies any more but become mainstream ones.

Big Data has crossed the peak of inflated exceptions and entered the practice and rapid development stage.

Big Data Integration into National Strategies



USA



2009

- **Transparency and Open Government** by President Barack Obama's administration

2013

- **Data to Knowledge to Action** by the White House, an important initiative for the United States to move to digital administration, economy, city, and national defense

2014

- **Big Data: Seizing Opportunities, Preserving Values** by Executive Office of the President, focusing on how the public and private sectors can maximize the benefits of Big Data while minimizing its risks

G8



2013

- **G8 Open Data Charter** by the G8, focusing on speeding up data openness and utilization

- **A European strategy on the data value chain** advocated by the European Union, aiming to use Big Data to reconstruct conventional governing modes, reducing public sectors' costs while promoting growth in economy and employment

- **Seizing the data opportunity: A strategy for UK data capability** by the UK government, aiming to fully utilize business value created by data to boost economic growth, and promising core databases in traffic, weather, and medical care to be available before 2015

- **Declaration to be the World's Most Advanced IT Nation** by the Abe Cabinet, aiming to develop IT national strategies centralized on open Big Data

China



2015

- At the two conferences (NPC and CPPCC) held in March 2015, Premier Li Keqiang made it clear that **governments should make non-confidential data as open as possible** to make the data better serve the public and facilitate governments' decision-making and supervision.

- Executive Meetings of the State Council held on June 17, **focus on using Big Data to optimize government services and supervision capabilities while improving administrative efficiencies**, and developing government Big Data to remove barriers between various units, improve government efficiencies, overturn conventional thinking modes, and accelerate the move towards the smart government.

Major economies around the globe have already integrated data openness into their national strategies to boost economic developments in the future. In addition, the Chinese government starts to deploy the Big Data industry from the very top.

Big Data Characteristics: Four Vs



Variety

- Various sources: enterprises, Internet, and IoT
- Various formats: structured data and unstructured data such as audios, images, and videos



Velocity

- Rapid growth: The amount of data is growing at an unprecedented speed. IDC expects the data volume to be 50 times larger in the next 10 years.
- Rapid process speed: Data must be quickly identified and processed to fit service needs.



Volume

- Large storage volume: various types of data, most of which contains PB-level (1024 TB) information
- Large computing volume: Massive data sets must be extracted and analyzed in real time.



Value

- Data even though sporadic can generate surprisingly large value.

Gartner:

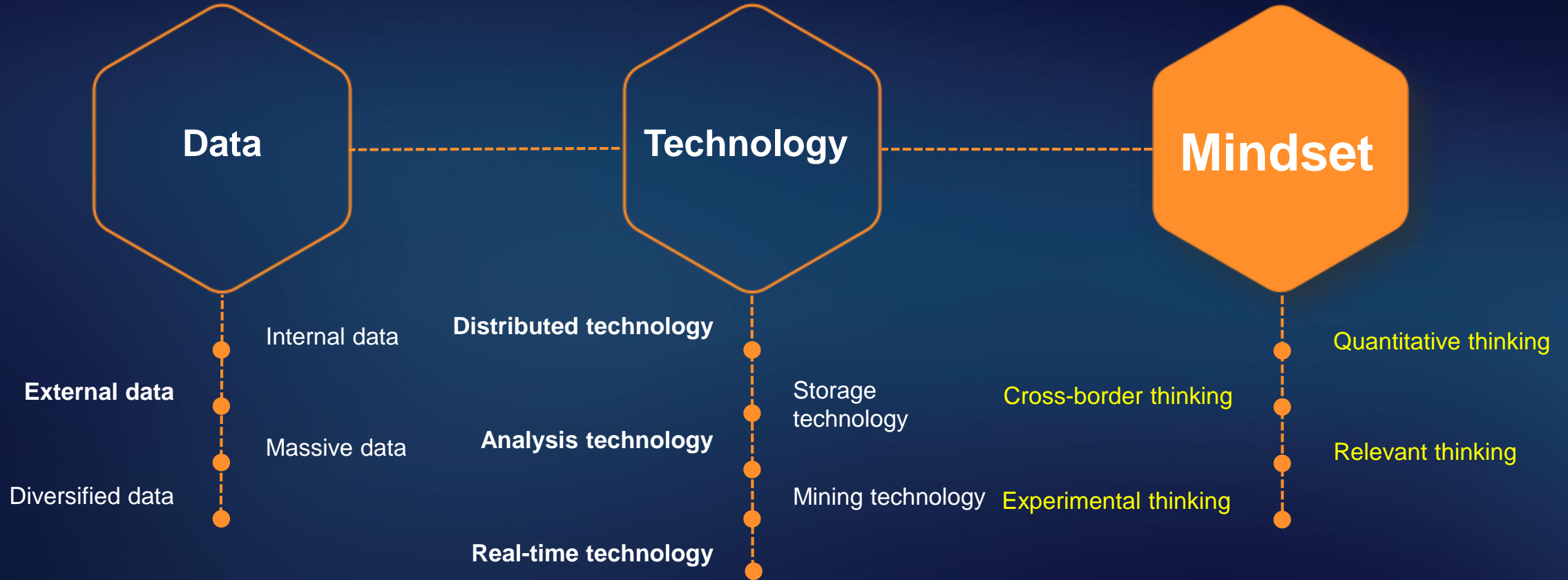
Big Data is high-volume, high-velocity and/or high-variety information assets that demand **cost-effective, innovative forms of information processing** that enable enhanced insight, decision making, and process automation.

The four Vs of Big Data determine difficulties in tapping into data value while indicating great potential business opportunities ascribed to data.

Huawei's Understanding of Big Data



Huawei's ideas about how Big Data is used



Big Data requires the change of conventional thinking patterns. Data collection and analysis become critical components of the business process, which is intelligent as well as optimized and automated by drawing strength from data. Data assets enable cross-border expansion.

Changing conventional thinking patterns is a key for transformations in traditional fields!

Big Data vs. Conventional BI Analysis

Full Data, Multi-Dimensional, and Self-Learning



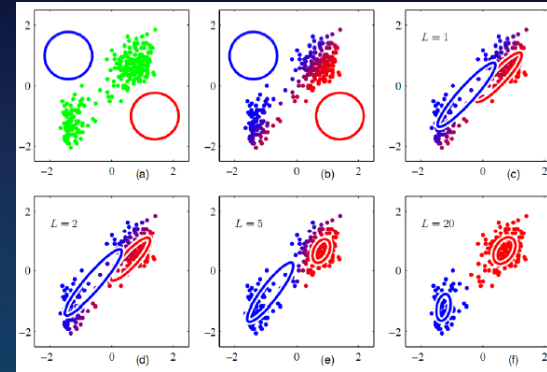
Conventional BI analysis



Singular data source



Manual processing with a few characteristics



Simple model with low precision

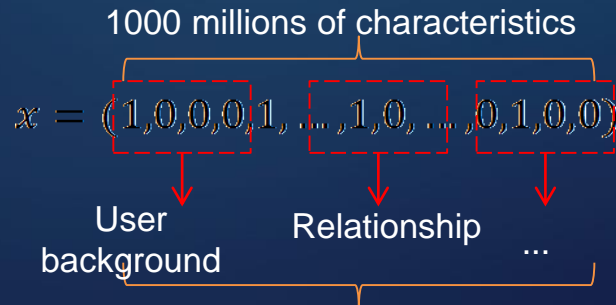


Low precision with unsatisfactory effect

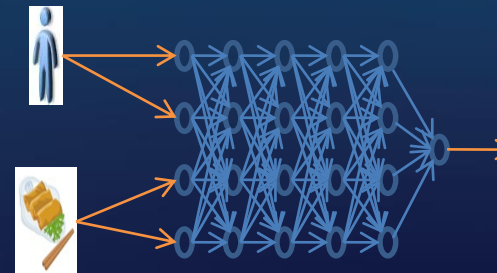
Big Data analysis



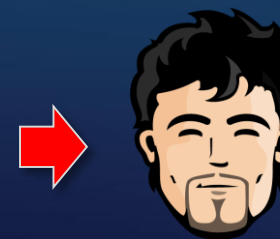
Wide-ranging data sources



Machine learning with full characteristics



Large-scale parameter learning and cross-domain analysis

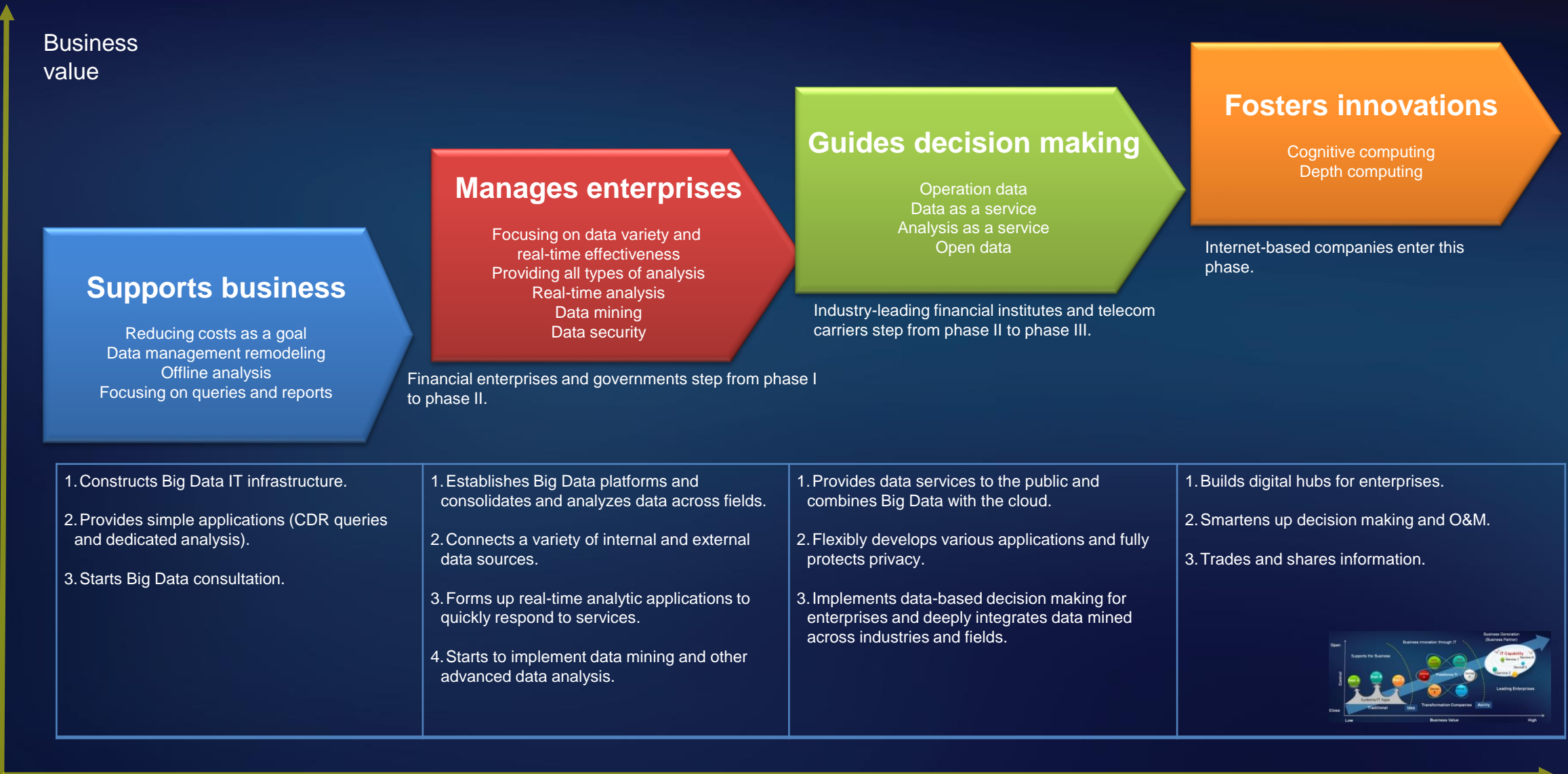


High precision with satisfactory effect

Compared to conventional BI analysis, Big Data analysis features cross-domain full data and machine learning and can more precisely analyze users' behavior.

Evolution Courses of Enterprise Big Data Application

Data Becomes Core Enterprise Assets and Promotes Business Innovations



Big Data Service Models

Government and Public Security Sectors

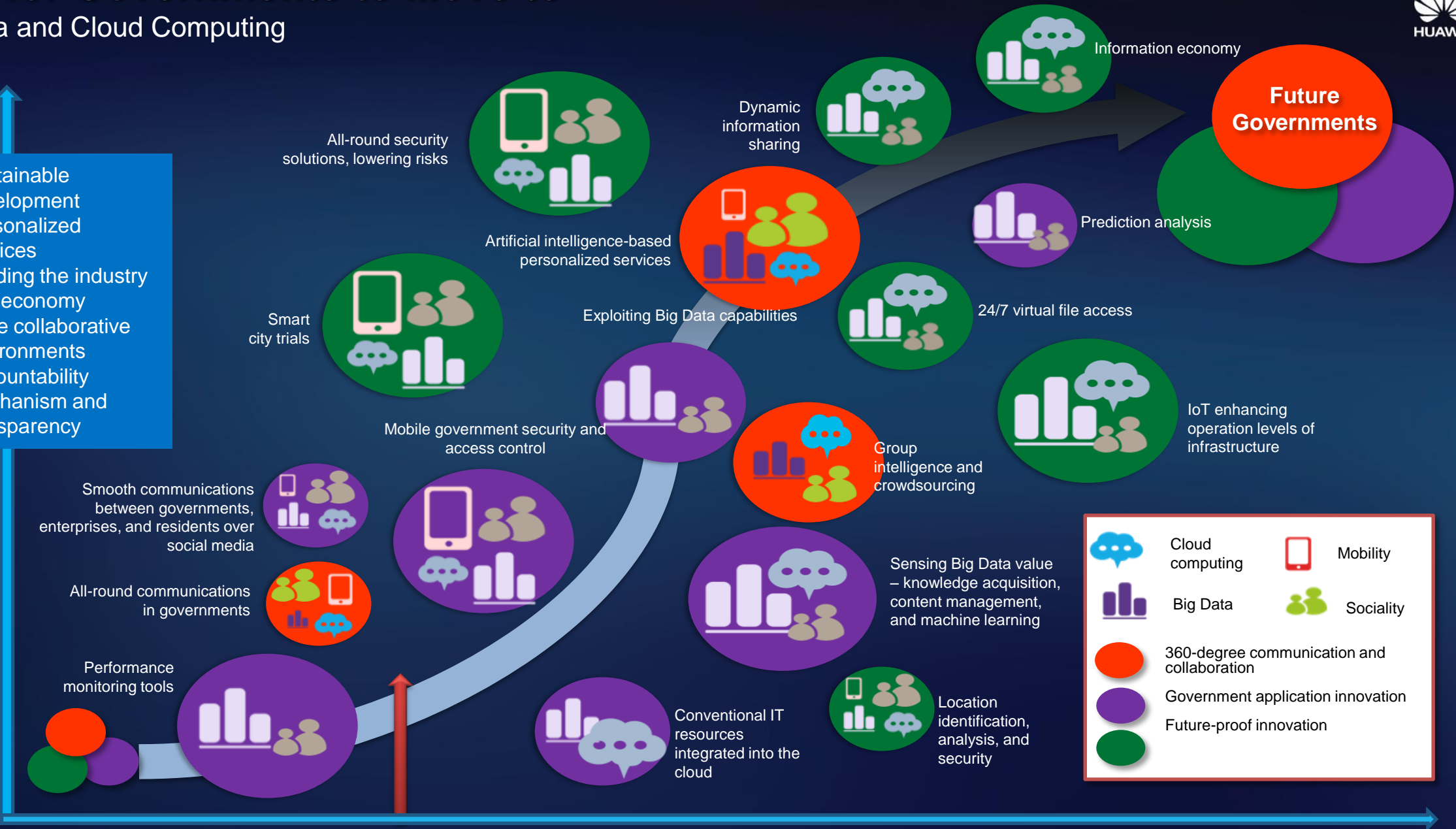


Service field	Big Data service value					
Intelligence analysis	Traveling record analysis	Accompany accommodation analysis	Online behavior analysis	Internet public opinion monitoring	Property analysis	Water and power use analysis
	Event security protection	Emergency control				
Case solving	Case statistics	Crime-committing pattern mining	Crime-committing means mining	Call record statistics	Suspect control	Criminal gang monitoring
	Lead qualification	Case comparison	Suspect monitoring			
Traffic police service	Suspected vehicle analysis	Vehicle tracing analysis	Traffic road update	Suspected vehicle monitoring	Non-local vehicle monitoring	Checkpoint picture analysis
Policeperson office	Archive transfer monitoring	e-archive retrieval	Service processing tracing	Policeperson workload statistics	Report information qualification	Surveillance video retrieval

Path for Governments to Move to Big Data and Cloud Computing



- Sustainable development
- Personalized services
- Leading the industry and economy
- Wide collaborative environments
- Accountability mechanism and transparency



	Cloud computing		Mobility
	Big Data		Sociality
	360-degree communication and collaboration		
	Government application innovation		
	Future-proof innovation		

A hand in the bottom right corner points towards a paper airplane flying in a bright blue sky with scattered white clouds. The sun is visible in the top left corner, creating a lens flare effect. A semi-transparent purple rectangular box is overlaid on the center of the image, containing the title and subtitle.

Correlation with IoT

Data Integration, DBs correlation, Real Time results and Analytics

IoT Strategy: 1+2+1



Transportation



Manufacturing



Oil & Gas



Smart Grid



Telco



Cloud Data Center

Device Management Platform

Operation Platform

1 IoT Platform

NB-IOT/3G/4G

2 Access Modes

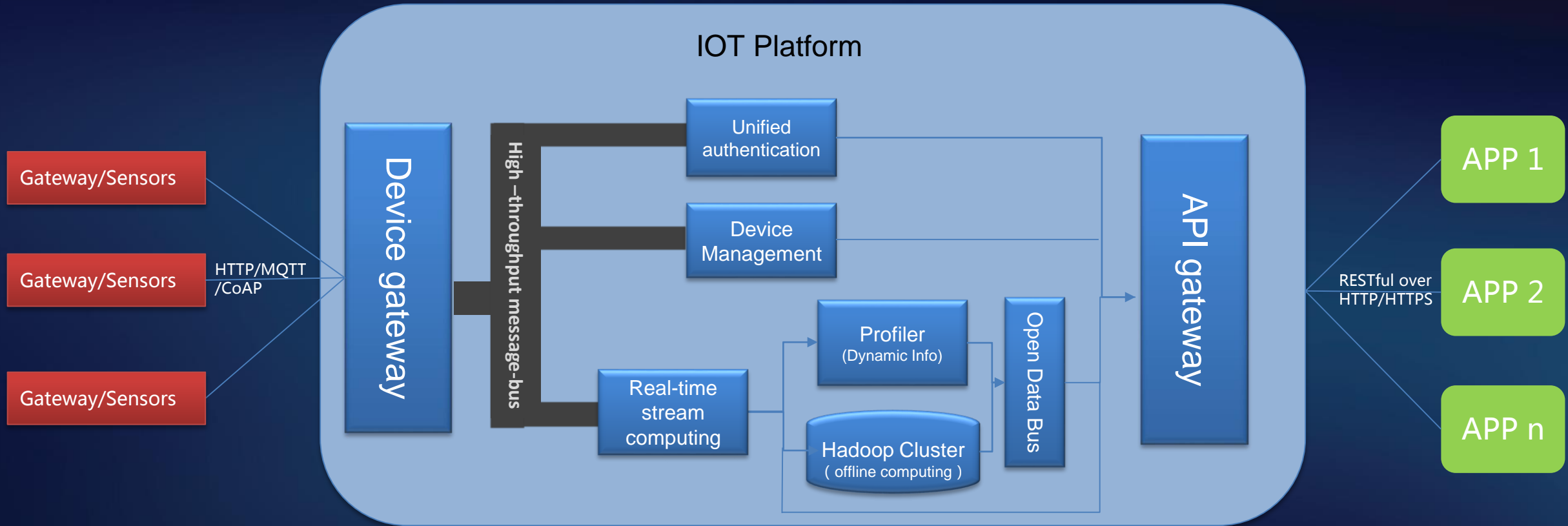
IoT Gateway

1 Interface Specification

LiteOS/IoT Agent



IoT Platform with Big Data Analysis



- All the messages reported from sensors will be first detected by Stream Computing according to the pre-defined rules and trigger to notifications to destination application when conditions are met.
- Thing's Profile, keeping its dynamic information, will be refreshed when relative reports comes
- All the reports are kept in Hadoop Cluster for future offline analysis.

Huawei Solution & Main Takeaways

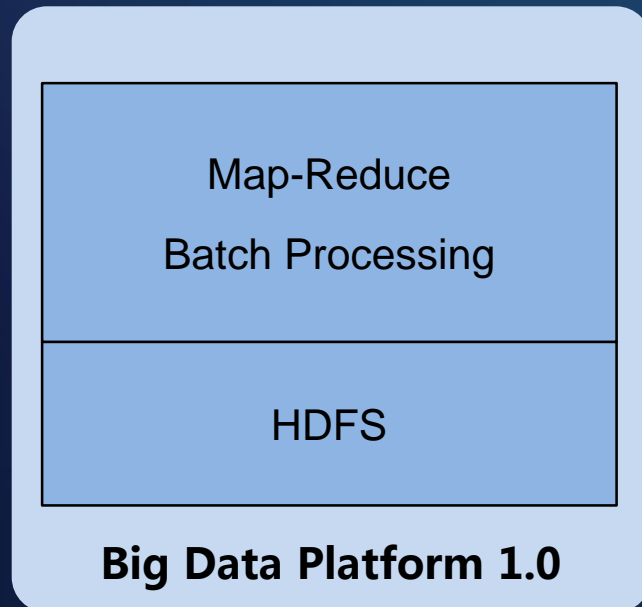


Big Data Trends and Huawei's Offerings



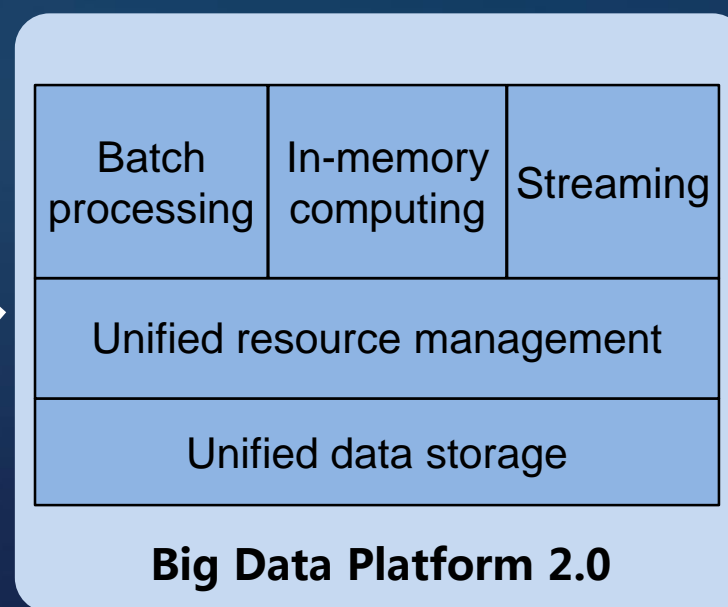
Data Integration

- 2012



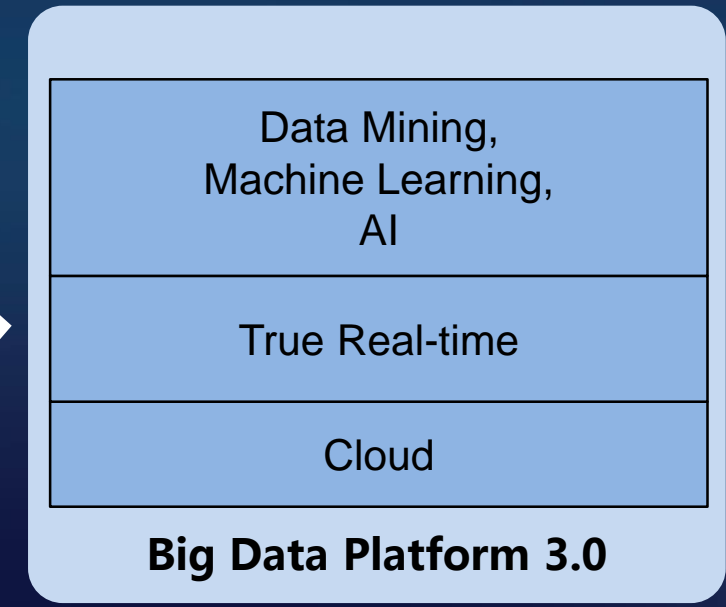
Data Analytics

2012 - 2017



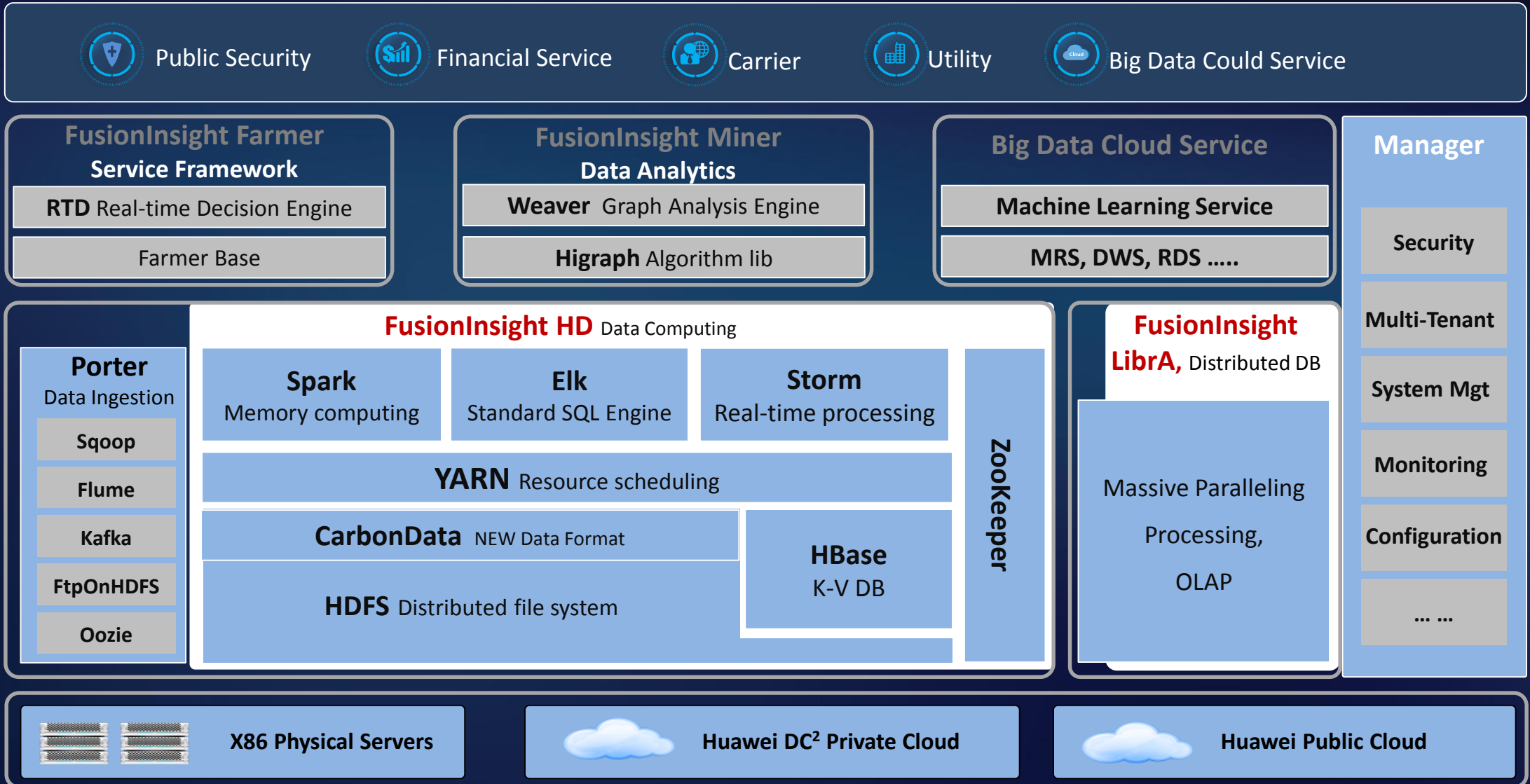
Data Intelligence

2017 -



Integrated Solution

Open Source based



In Summary



A Transformation solution such as Big Data should have the following considerations:

New **Consumption** Models

- Service Catalogues (product offerings)
- Financial Charge and Measure (visibility)
- Flexible and Fast Capacity (TTM/TTD)

New **Technology** Models

- Optimized Connectivity
- X as a Service Model ($\xn)
- Standardization and Integration (a better life)
- Converged Infrastructure (openness/aggregation)

New **Operational** Models

- Service based roles and responsibilities
- Automation (failure detection and orchestration)
- Re-defined processes (a more agile business)

A much competitive and better Society!



THANK YOU

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