Innovation edge

JUNE 2013 6

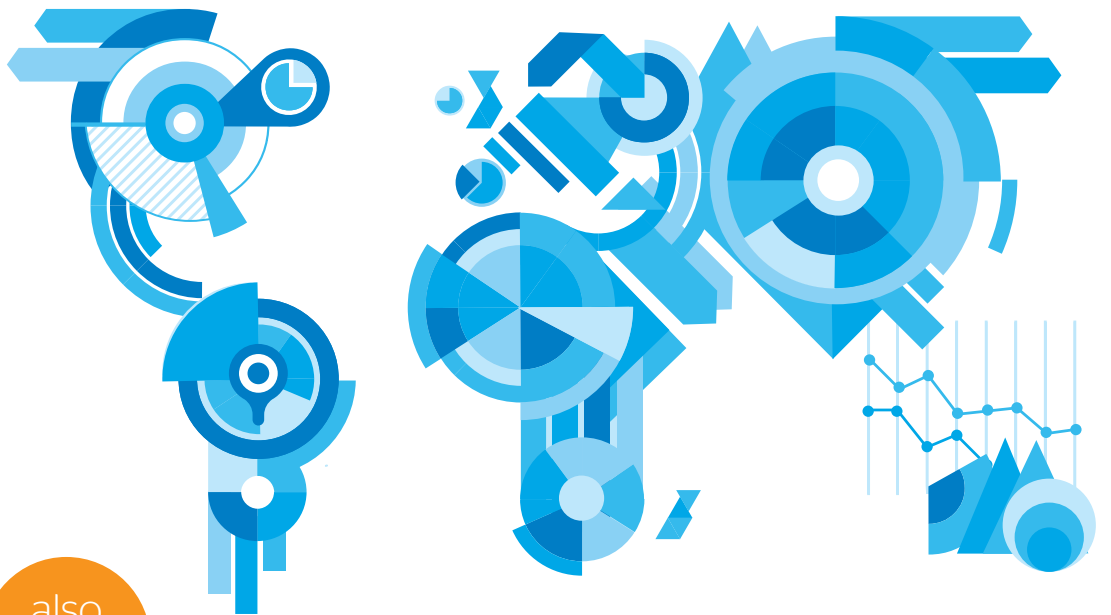
Big Data

Now's the time to create business value with data

Where we at?

A fly by

Big Data in financial services



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Trending Issues
Technology Trends

BBVA

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INNOVATION CENTER

Big Data:

"Where we at?"

Big Data is no longer a promise nor a trend. Big Data is here and is sparking profound changes in various industries. From a technological point of view, there are already many projects and products that have gained widespread adoption in certain industries. The analysis of all available information is becoming a disruptive element. Just like the Internet, it is a disintermediation factor that is affecting many value chains. The analysis of large volumes of information, from different sources, at high speed, and with unprecedented flexibility can be a differentiating factor for anyone who decides to adopt it.

Some real-world examples

RFID (radio frequency ID) systems generate up to 1,000 times the data of conventional bar code systems.

More than 5 billion people are calling, texting, tweeting and browsing websites on mobile phones.

Facebook has more than 901 million active users generating social interaction data.

340 million tweets are sent per day. That's nearly 4,000 tweets per second.

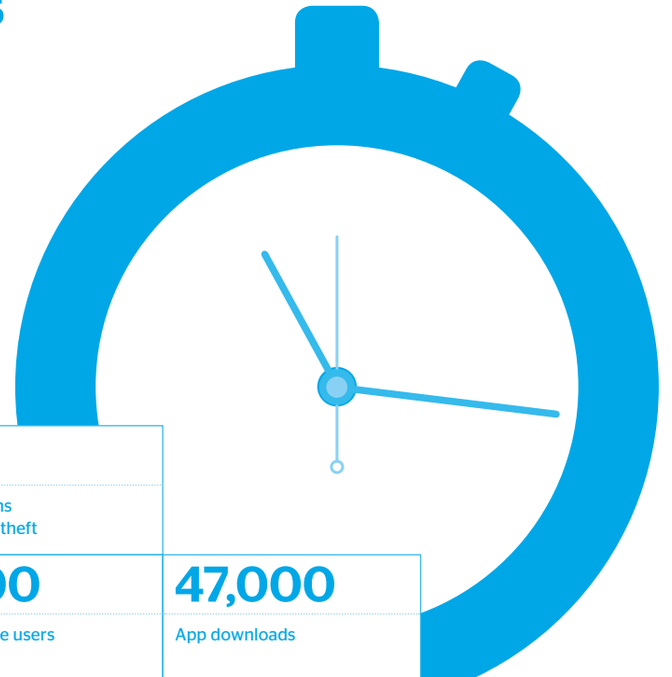
2,5 2.5 quintillion bytes of data are created each day, so much that 90% of the data in the world today has been created in the last two years alone.

Walmart handles more than 1 million customer transactions an hour.

10,000 payment card transactions are made every second around the world.

Sources:
SAS | Big Data: www.sas.com/big-data.
IBM | Big Data at the Speed of Business
McKinsey Global Institute | Big Data: The next frontier for innovation, competition, and productivity, June 2011.

Data growth >
What happens in an internet minute?



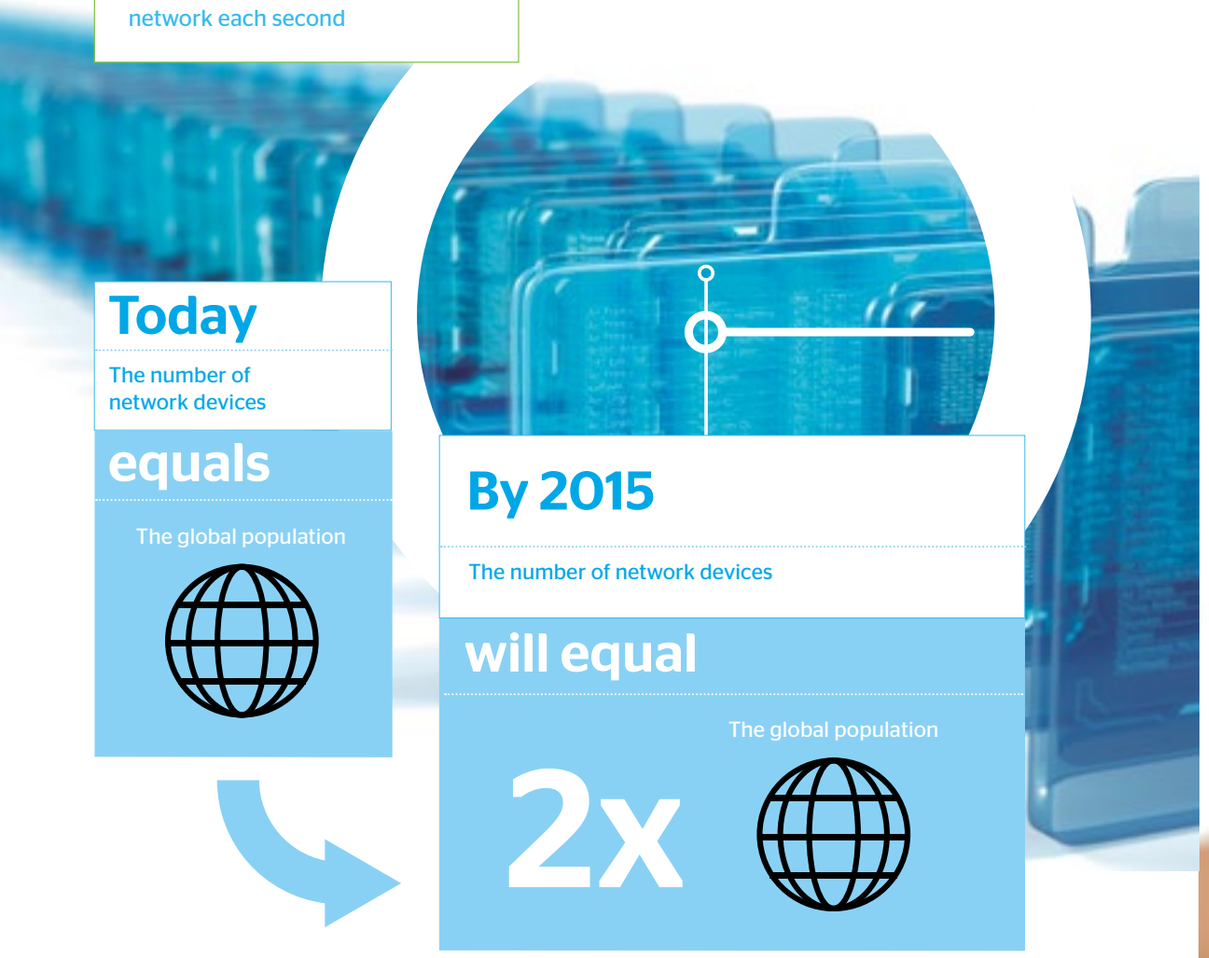
639,800 Gigabytes of global data transferred			
135 Botnet infections	**20** New victims of identity theft		
6 New wikipedia articles published	**1,300** New mobile users	**47,000** App downloads	
204 mill. Emails sent	**61,141** Hours of music	**100+** New linkedin accounts	**277,000** Facebook logins
$83,000 In sales	**20** mill. Photo views	**320+** New twitter accounts	**6** mill. Facebook views
	3,000 Photo uploads	**100,000** New tweets	**1.3** mill. Video views
		2+ mill. Search queries	**30** Hours of video uploaded

Source: Intel | What Happens in an Internet Minute?

And future growth is staggering

In 2015

It would take you 5 years to view all video crossing IP network each second



Today

The number of network devices

equals

The global population

By 2015

The number of network devices

will equal

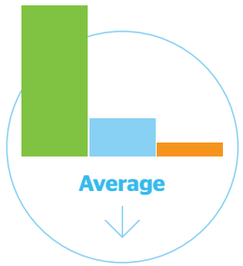
The global population

2x

Source: Intel | What Happens in an Internet Minute?

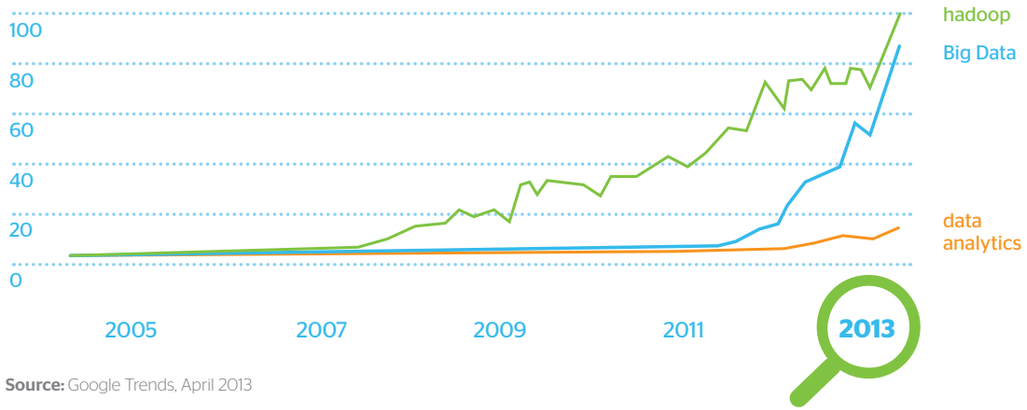
it's already caught a lot of people's attention

As search terms ... Hadoop, Big Data, and Data Analytics are all trending higher.



Interest over time

The number 100 represents the peak search interest)



Source: Google Trends, April 2013

The market opportunity

According to a recent Gartner presentation, "Top Technology Predictions for 2013 and Beyond":

Globally, companies will hire many business information experts to support growing volume, variety, and velocity of data.

The demand for Big Data services spending projected to reach 132.3B$ in 2015.

By 2015, Big Data demand will reach 4.4 million jobs globally, but only one-third of those jobs will be filled.

The demand for services will generate 550k external services jobs in the next 3 years.

Another 40,000 jobs will be created at software vendors in the next 3 years.

Source: Gartner | Top Technology Predictions for 2013 and Beyond, February 2013

A definition

Big Data is the term used today to describe the set of processes, technologies, and business models that are based on data and capture the value that the data contain. This value can be realized through by realizing efficiency improvements that can be achieved by analyzing the data (a more traditional view) and by the emergence of new business models that provides new engine of growth. Though much has been said about the technological aspect, but we must keep in mind that it is critical to find ways to add value to the data and to create new business models or helping existing ones.

Source: BBVA New Technologies

Source: Booz & Company | Benefitting from Big Data, 2012.

Big Data is generally characterized by the 3V's: **Volume, Variety, Velocity**

Characteristics

Volume

Volume of data stored in enterprise repositories have grown from megabytes and gigabytes to "petabytes"

E.g. volume of data processed by corporations grew significantly, e.g. Google processes 20 petabytes/day

By 2020, 420 Billion electronic payments are expected to be generated

New York Stock Exchange creates 1 terabyte of data per day vs. Twitter feeds that generates 8 terabytes of data per day (or 80 MB per second)

Variety

Data variety exploded from structured and legacy data stored in enterprise repositories to unstructured, semistructured, audio, video, XML, etc

Streaming data, stock quotes, social media, machine-to-machine, sensor data all drive increasing variety that needs to be processed and converted into information

Velocity

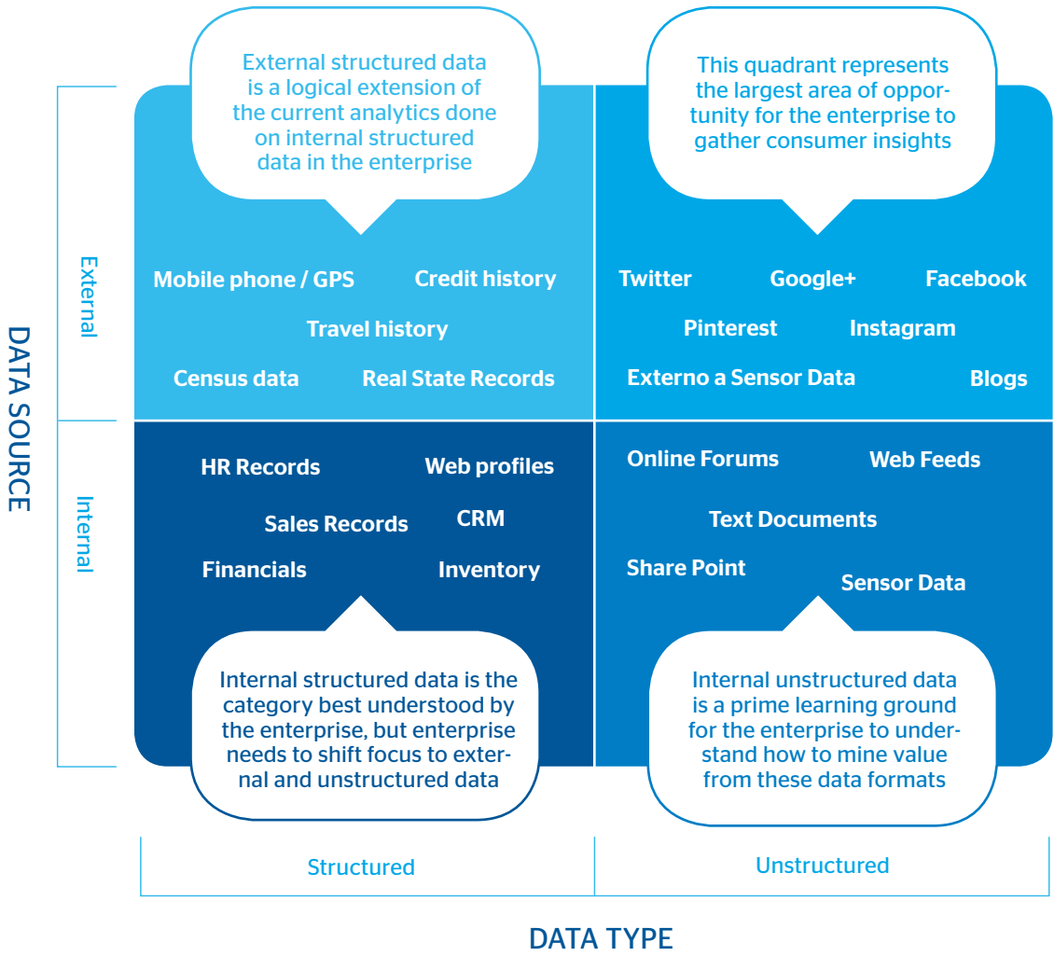
Speed of data movement, processing and capture in and outside enterprise went up significantly

Model based business intelligence models typically takes day for processing - compared to 'almost' real-time analytics requirements of today using incoming stream of high-velocity data

E.g. eBay is addressing fraud from PayPal usage, by analyzing real-time 5 million transactions each day

Sources & types

Sources of data are internal and external; and types of data are structured and unstructured.



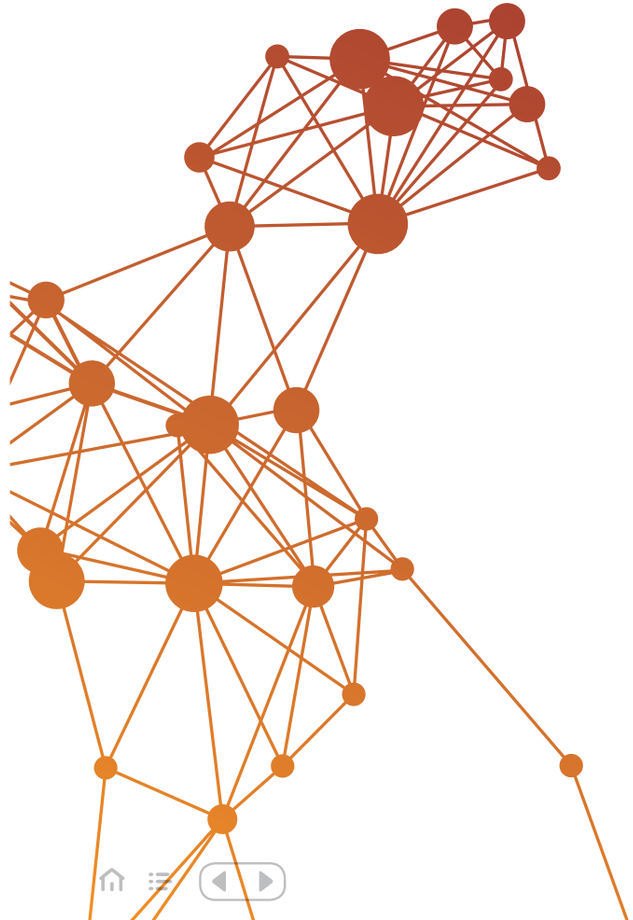
Source: Booz & Company | Benefitting from Big Data, 2012.

On the road towards productivity

Big Data is falling into the trough of disillusionment

"MapR, HortonWorks and Cloudera were debating the state of Hadoop. And I heard from the very core of the Hadoop movement that MapReduce has always been Hadoop's bottleneck or that Hadoop is "primitive and old-fashioned."

Watch the video to see signals which suggest "the beginning of disillusionment (and get a lot of useful information too). Congratulations, Big Data technology is maturing fast!"



It's really about business outcomes

In a sense, Big Data may have the answers to all of our questions. Some even say that it's the end of theory. Businesses and organizations that can ask the right questions (at the right time) will gain competitive advantage. From a business point of view, we currently are moving from "data analysis" to "data science":

From a point of view of trends, the next area for exploration is the search for business value and business outcomes with Big Data. In other words, show me the value for the business model: What can I do with Big Data to enhance my current business model? What can I do with Big Data to create new business models?

Big Data: a fly by

In this section, we'll see how Big Data is perceived, discuss the related opportunities and challenges, and glance at some emerging business models.

What is Big Data for business executives?

"Much of the confusion around Big Data stems from a misunderstanding about the definition itself. Rather than any single characteristic clearly dominating the view of Big Data as part of a recent poll by IBM, respondents were divided in their views on whether Big Data is best described by today's greater volume of data, the new types of data and analysis, or the emerging requirements for more real-time information analysis."

What do business executives think about Big Data?

- **7%** Social media data
- **8%** The latest buzzword
- **10%** Large volumes of data
- **13%** Data influx from new technologies / Non-traditional forms of media
- **15%** Real-time information
- **16%** New kinds of data and analysis
- **18%** A greater scope of information

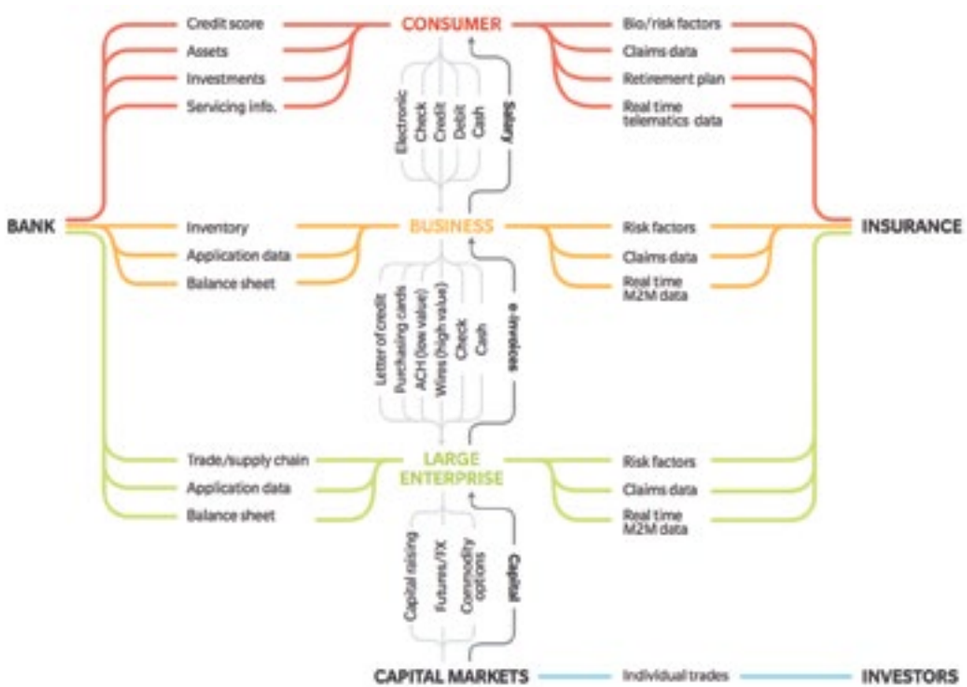
Source: The Financial Brand | Big Data: Big Opportunity in Banking ... or Big B.S.?, noviembre 2012 IBM | Survey Results

It's all about the information

A vast quantity of information is now available; ... The advantage financial firms can derive from their information asset is limited mostly by their imaginations.

Managers who have been successful in a data-starved environment may struggle to understand the potential value of data. They may lack the time and patience to explore change. And those who do understand data may be unable to identify the most valuable opportunities; they may not understand the economics of the business well enough. Only when these barriers are broken down can a firm understand the potential of its information assets.

The economy viewed through financial services data



Source: Oliver Wyman | State of the Financial Services Industry, 2013.

Path to value creation: 3 key aspects

1	2	3
Data must lead to action	**Hard to find resources are needed**	**Privacy/Security issues need to be worked out**
The inherent value of data can only be realized when consumers are able to act upon opportunities which are meaningful to them.	Finding experts in statistics with IT skills is hard to do because there aren't enough of them around. Putting together the right skills needed for Big Data takes discipline and rigor; and a few people will end up acquiring them.	Lots of discussions will need to take place amongst the stakeholders, such as: how to overcome "big brother" fears; data log issues; personal/public privacy issues; transparency of data centric companies; and legislation that supports innovation.

Source: The Financial Brand | Big Data: Big Opportunity In Banking... Or Big B.S.?, November 2012.

The opportunities:

Enterprises can benefit from Big Data in several areas including Customer Insights, Marketing, Operations and Risk Management.

Source: Booz & Company | Benefitting from Big Data, 2012

The opportunities: some examples

↓ Customer analytics

- Customer Driven Marketing: Targeting promotions and personalizing offers based on individual purchasing behavior, churn prevention.
- Product Recommendation: Collaborative filtering, multi-channel activity based recommendations.

↓ Marketing analytics

- Marketing Mix Modeling: Optimizing marketing mix and promotions by using econometric modeling to assess sales lift of different marketing tools and identifying most effective.
- Pricing Optimization: Using data to assess demand sensitivity to pricing to optimize pricing through various points of product life cycle.

↓ Web/mobile social analytics

- Customer Activity Analysis: Storing customer preferences to customize display, tracking usage to measure web metrics.
- Social Media Monitoring: Analyze consumer sentiments towards company and products on social media platforms.

↓ Operational effectiveness

- Operational data analytics leveraging large manufacturing data to improve process and product quality.
- Improved planning and forecasting leveraging large historic process, resource and product data.

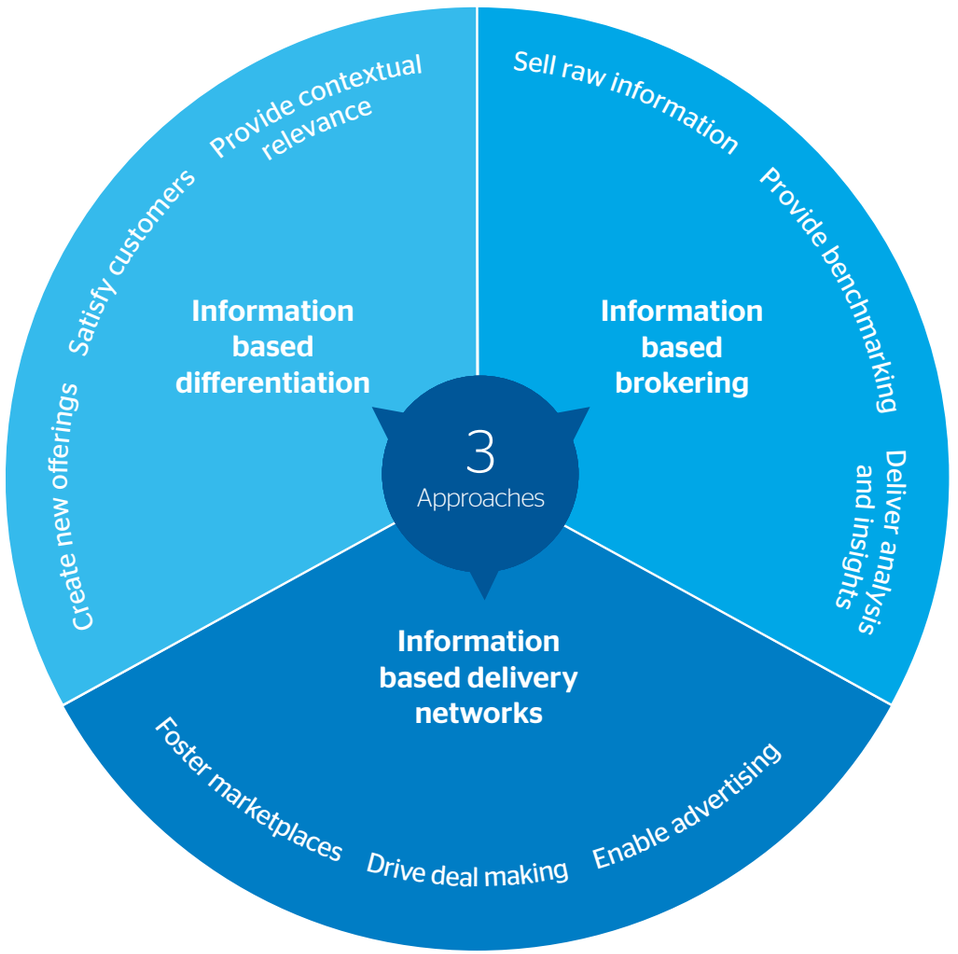
↓ Fraud and risks analytics

- Large customer, transaction and market data analysis for customer and product risk quantification.
- Real-time fraud detection leveraging data from POS, transactional and analytical systems.

Source: Booz & Company | Benefitting from Big Data, 2012

Emerging business models

There are a number of new business models emerging in the Big Data world. (There are) three main approaches standing out:



Source: Harvard Business Review | What a Big-Data Business Model Looks Like?, December 2012.

Emerging business models (sector view)

Industries are using Big Data to transform business models and to improve performance in many areas.

Retail

- Customer Relationship management
- Store location and layout
- Fraud detection and prevention
- Supply chain optimization
- Dynamic pricing

Financial Services

- Algorithmic trading
- Risk Analysis
- Fraud detection
- Portfolio Analysis

Government

- Market government
- Weapon system and counterterrorism
- Econometrics
- Health informatics

Advertising and Public Relations

- Demand signaling
- Targeted advertising
- Sentiment Analysis
- Customer acquisition

Manufacturing

- Product Research
- Engineering analytics
- Predictive maintenance
- Process and quality analysis
- Distribution optimization

Media and telecommunications

- Network optimization
- Customer scoring
- Churn prevention
- Fraud prevention

Energy

- Smart grid
- Exploration
- Operational modeling
- Power-line sensors

Healthcare and life sciences

- Pharmacogenomics
- Bioinformatics
- Pharmaceutical research
- Clinical outcomes research

Source: A.T. Kearney | Big Data and the Creative Destruction of Today's Business Models

El Big Data in financial services: the essentials

The story of Big Data is unfolding everywhere, expressing itself in many different ways. In this section, we outline the essentials of Big Data as we understand it, from a financial services point of view.

Big Data was born out of necessity

Yahoo! and Google were trying to solve their business problems when Big Data (Hadoop) was born. A few years later, other web companies such as Amazon, Facebook, and countless others are now using Big Data to solve their current business problems and to explore new business opportunities.

The world just wanted a better open-source search engine

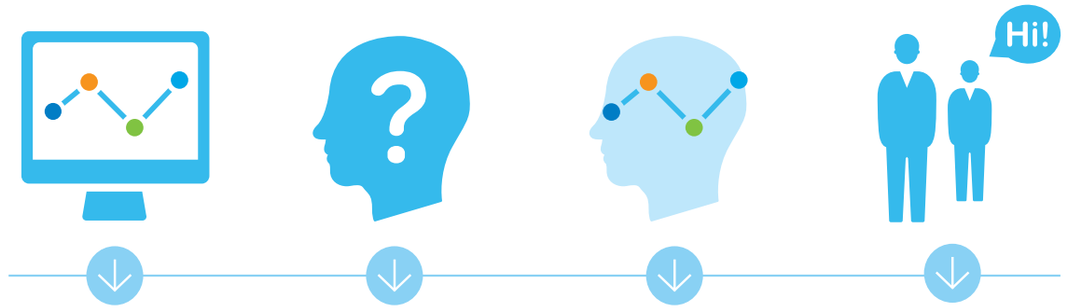
Source: GigaOm | The History of Hadoop: from 4 nodes to the future of data, March, 2013.

Intention vs. decision? Which data yields more value?

Financial services data are interesting, especially when it comes to making the current business models better or to creating new ones. While other data, such as Foursquare, offer visibility of the consumers' intentionality; financial services data express consumer buying decisions.

However, the value of such data cannot be realized unless they provide an opportunity for action. Companies must offer the customers the right product/service at the right time. In other words, they need to understand the current, real-time needs/wants of customers and have the ability to act on it.

As a result, rapid understanding of various data streams and subsequent communication extracted with Big Data are critical processes. It's no wonder that data visualizations are becoming more important as well, as they are becoming a part of many decision-makers' dashboards.



The challenges

Financial institutions should tackle five main challenge to capture value promised by Big Data. They are:

1

Cost Overruns
A vast majority of banks' traditional data governance and data management practices aren't capable of supporting Big Data requirements and can lead to costly and delayed data analytics projects.

2

Business Alignment
Banking CEOs and key stakeholders have very focused business objectives. Often times these business objectives aren't in alignment with Big Data ideas making this a top roadblock for financial services organizations.

3

Budget Constraints
Developing a true cost-benefit model may be difficult when significant upfront development costs with tools like Hadoop are common. New cloud-based and turnkey analytical platforms for Big Data make setting up a platform – and seeing a return on investment – more achievable than ever before.

4

The Aha Moment
Vendors and service providers must continue to provide more thought leadership, granular data modeling and specific templates to generate that "aha" moment for organizations, and provide a better model and visualization of how technology can solve a business problem in a more meaningful way.

5

Knowledge Gaps
IT strategies and business processes for Big Data are very different. Gaps in data storage and processing strategies, plus lack of CIO know-how or direction will cause banks to falter. Banking technology professionals may also still lack knowledge of Big Data management tools. Technical and end-user training may also prohibit banks from adopting Big Data.

By now, most industries recognize that 'Big Data' and analytics can boost productivity, make processes more visible, and improve predictions of behavior. 'Analytics will define the difference between the losers and winners going forward,'

says McKinsey
Director Tim McGuire.

Watch a video

Source: BMcKinsey | Making data analytics work: Three key challenges, March 2013.

BBVA and Big Data

BBVA is working to capture the value that data contains, not only to improve current business processes, but also to create new products based on data.

Financial data is dynamic, tangible, and measurable; all at the same time. They offer a unique perspective of society and its interactions. The goal is to find new perspectives to using such data and combine them in new ways so that BBVA and other institutions, companies, or individuals can make better decisions.

From the point of view of technology and information quality, BBVA has been working on a "Master Data Program" which we believe positions us as leaders in our industry in regards to information. Current initiatives are a continuation of this philosophy, incorporating more agile ways of processing information, access to diverse sources of information, and the addition of the analysis of large volumes of unstructured data.

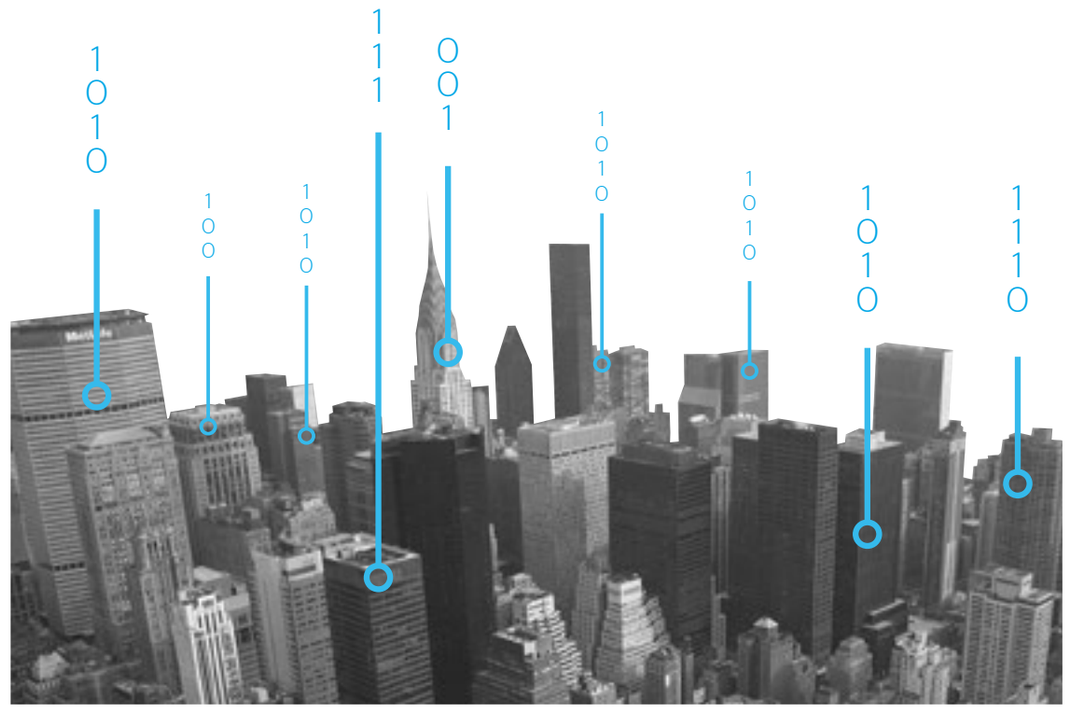
Some areas in which BBVA is implementing or investigating Big Data are:

Internal, the use data within the Bank:

- Risk Analysis: a SME example, where the idea is to get the broadest view of the clients, which includes accounting and financial data (along with other types of data).
- Optimal location of assets such as ATMs and branches, which are geared towards customer convenience.
- Appropriate product offer based real customer needs or "customer-centricity".

External, in such a way that others can benefit from the value of data:

- Help retailers better understand their performance, their customers, and their geographic and temporal context.
- Help city administrators to make better decisions based on better knowledge of the city.
- Measure the actual impact of events or specific decisions (www.mwcimpact.com).
- Allow 3rd parties to create new value-added services based BBVA data, anonymous and aggregated; which may even be the result of combining data from other sources.



Global Snapshots

The Big Data “players” can be divided into practitioners and technology providers. In the first part of this section, we take a quick look at Big Data practitioners from various industries, including banking and financial services. The technology providers covers a rather large footprint, as this trend is maturing. In the second part of this section, we do a fly-by of the technological terrain. This section concludes with a look at some companies which point towards the coming future of Big Data. Enjoy the view.

Big Data Technology Providers

3RD PARTY MANAGEMENT SOFTWARE

"Third parties also sell software for managing Hadoop clusters, and their products are typically agnostic as to what distributions they support."

DISTRIBUTION

"These are packaged software products that aim to ease deployment and management of Hadoop clusters compared with simply downloading the various Apache code bases and trying to cobble together a system."

OPERATIONAL DATABASES

"Operational databases are important for many, if not the majority, of web applications. And if you're doing big business on the web, finding one that can scale with your data volumes and still perform like you need it to is critical."

SQL ON HADOOP

"SQL-on-Hadoop solutions ... increase the accessibility of Hadoop and allow organizations to reuse their investment learning in SQL"

FRAMEWORKS

Thanks to frameworks, developers and data scientists can take advantage of of Hadoop, both cheaper and easier. Frameworks allow for the expansion of data sources and repositories it supports.

HADOOP AS A SERVICE APPS/ANALYTICS

"The cloud model lets users leverage a service provider's infrastructure investment and subject-matter expertise without having to build them in-house."

3RD PARTY MANAGEMENT SOFTWARE

- Apache Mesos
- Corona
- Stack IQ
- WANdisco
- Zettaset

DISTRIBUTION

- Cloudera
- EMC Greenplum
- Hadoop
- Hortonworks
- IBM
- Intel
- MapR

OPERATIONAL DATABASES

- Apache Accumulo
- Apache HBase
- Drawn to Scale
- Lily
- Splice Machine
- Sqrrl
- TempoDB

SQL ON HADOOP

- Apache Drill
- Apache Giraph
- Citus Data
- Hadapt
- Impala (Cloudera)
- Lingual (Cascading)
- Phoenix (Force.com)
- Pivotal HD (Greenplum)
- RainStor
- The Hive
- The Stinger Initiative (Hortonworks)

FRAMEWORKS

- Apache Hama Project
- Apache Pig
- Apache Tez
- Cascading (Concurrent)
- Mortar
- Scalding (Twitter)

HADOOP AS A SERVICE APPS/ANALYTICS

- Birst
- Cetas (VMWare)
- Kontagent
- Packetloop
- Qubole
- Treasure Data

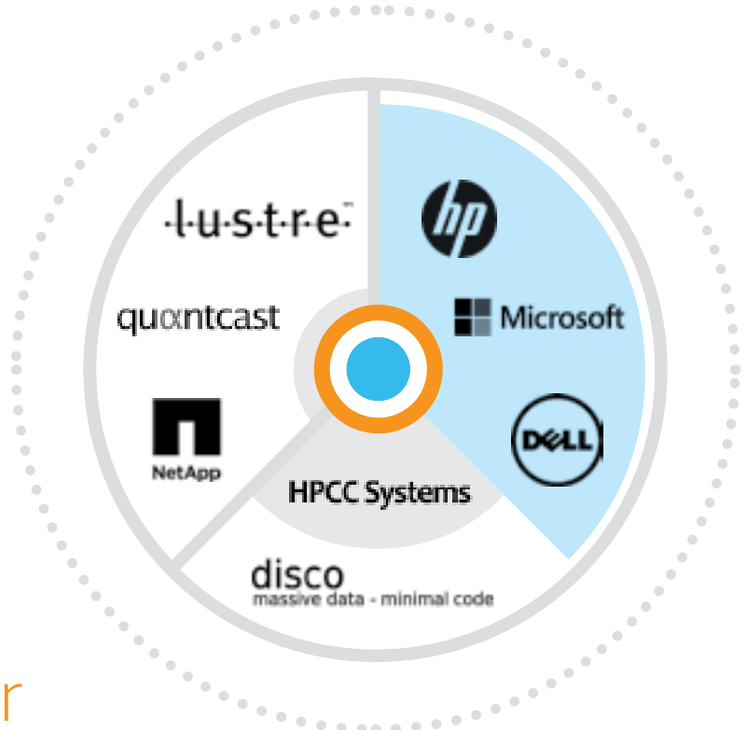
HADOOP AS A SERVICE INFRASTRUCTURE

"What the Market really needs is something like a Dropbox for Big Data BI (Business Intelligence). ... removing some of the hassle at the infrastructure layer when it comes to implementing Hadoop."

ANALYTIC APPLICATIONS & PLATFORMS

We are "moving toward a more unified platform for Big Data analytics. With the introduction of real-time query, Hadoop has taken a major step toward unifying the majority of Big Data analytic applications onto one platform."

GOGRID · SUNGARD Availability Services · mahout



Other notables

HADOOP AS A SERVICE INFRASTRUCTURE

- Amazon Elastic MapReduce
- GoGrid
- Infochimps
- Infosphere BigInsights (IBM)
- Joyent
- Mortar Data
- Skytap
- Sungard
- VertiCloud (Beta)
- Windows Azure (Microsoft)

ANALYTIC APPLICATIONS & PLATFORMS

- Oxdata
- Apache Mahout
- Continuuity
- Datameer
- HStreaming
- Karmasphere
- NGData
- PacketPig (Packetloop)
- Platfora
- Radoop
- Tresata
- WibiData

HDFS ALTERNATIVES

- Cassandra (via DataStax Enterprise)
- Ceph
- Cleversafe (Dispersed Storage Network)
- EMC (Isilon)
- IBM (GPFS)
- NetApp (NetApp Open Solution for Hadoop)
- Lustre
- Red Hat (Red Hat Storage/ GlusterFS)
- Quancast File System

ALTERNATIVE PLATFORMS

- Disco
- HPCC Systems
- Pervasive Software (DataRush)
- Spark/Shark

HADOOP REPACKAGED

- Data Direct Networks
- Dell
- HP
- Microsoft
- Nutanix
- SGI
- Teradata/Aster Data

Innovation Forecast

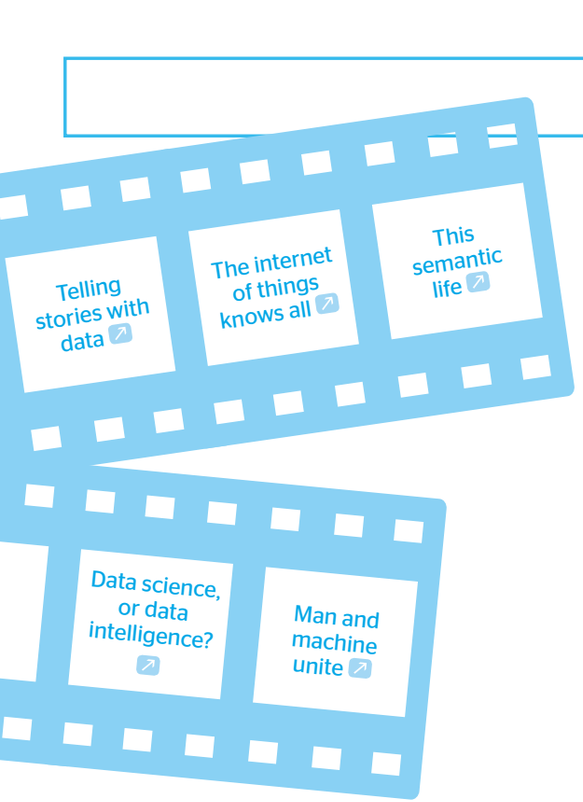
It's time to get up and become active with Big Data as "sitting around" is no longer a viable option. In this section, we'll get some advice from Big Data professionals who share some of the learnings acquired along the way.

Doing Nothing May Not Be an Option

"With many institutions building a Big Data strategy, the ability to pick off your best customers from a current competitor is an increasing threat. Beyond that, there are many alternative providers that are building pseudo-banking strategies, collecting vast amounts of insight that can be used against you in the future. Google, PayPal, Amazon and other organizations are building a wealth of data on purchasing patterns.

While the data within your firewalls provides a distinct competitive advantage, the unstructured insight available online, through mobile channels and through social media are equally valuable. In the new world, knowing that a purchase was made may not be enough. Knowing what was purchased may be the incremental difference needed to create loyalty."

Source: The Financial Brand | Big Data: Big Opportunity In Banking... Or Big B.S.?, November 2012.



The coming future of Big Data

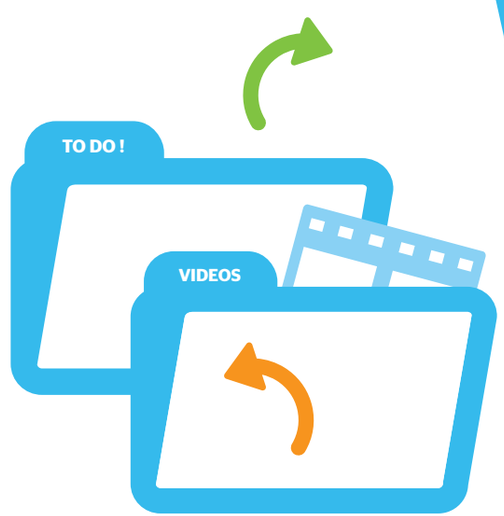
Imagination and technology are on a collision course that will change the world in profound ways:

At BBVA, we would add:

- Look forward to a "personal data locker," which will help consumers to manage personal data.
- Mix the data up for additional value; combining data may yield new insights.
- Big Data will give rise to a new type of company, a data-centric company.

What to do in general?

Enterprises and professionals should target acquiring skills in data analysis of real-time streams across multi-structured sources and with high-volume data tools:



- ✓ The IT workforce is gaining new roles bridging IT and the business.
- ✓ Big Data roles include business analysts, chief data officers, data scientists, legal/IT professionals, and in IT information architects, data stewards, etc.
- ✓ Advanced information management/analytics skills and business expertise are needed.

Source: Gartner | Top Technology Predictions for 2013 and Beyond, February 2013

Getting to the “win”

Enterprises and professionals should target acquiring skills in data analysis of real-time streams across multi-structured sources and with high-volume data tools:

Source:
The Financial Brand | From Science To Art: Big Data Can Paint A Clear Picture For Banking CMOs, CIOs, March 2013.

Don’t boil the ocean

Prioritize technology investments.

Develop a roadmap

Look for guidance on what technologies are the best investments based on current business strategies and existing investments.

Find value from within

Audit and leverage information that already exists in corporate data sources, understanding existing data assets can help drive more streamlined Big Data use cases.

Be a leader in the social revolution

Look for data in new sources, going beyond traditional structured data sources drive more streamlined Big Data use cases.

Enable a competency center

Build a team of stakeholders that promote collaboration, open communication and alignment of business and technology.

Change management is critical

Banks need to ensure that standardized methods and procedures are used to minimize impact on the organization.

Manage risk

Staff projects with data analysts that have a business focus and ensure that they have the support of IT and data stewards in the enterprise to help align the business needs with Big Data initiatives.

In Depth

A list of links to other useful tools and resources that you may find useful as a supplement to the information offered on the 'Big Data' report.

Books & Publications

A.T. Kearney | Big Data and the Creative Destruction of Today's Business Models

Bain & Company | Navigating the "Big Data" challenge, November 2012

Bank Systems & Technology | 7 Big Data Players to Watch, 2013

Booz&co. | Benefitting from Big Data: Leveraging Unstructured Data Capabilities for Competitive Advantage, 2012

Booz&co. | Getting Results from Big Data: A Capabilities-Driven Approach to the Strategic Use of Unstructured Information, 2012

Boston Consulting Group | The Value of our Digital Identify, 2013

Boston Consulting Group & World Economic Forum | Unlocking the Value of Personal Data: from Collection to Usage, 2013

Economist Intelligence Unit | Big Data: Lessons from the leaders, 2013

Gartner | Big Data Hype Cycle, 2012

GigaOm Pro | How to use Big Data to make better business decisions, 2013

IBM | Understanding Big Data: Analytics for Enterprise Class Hadoop and Streaming Data, 2012

Jason Lanier | Who Owns the Future?

Viktor Mayer-Schonbeger & Kenneth Cukier | Big Data: A Revolution That Will Transform How We Live, Work, and Think

McKinsey Global Institute | Big Data: The next frontier for innovation, competition, and productivity, 2011

McKinsey Quarterly | Big Data in the age of the telegraph, March 2013

McKinsey Quarterly | Big Data: What's your plan?, March 2013

Evgeny Morozov & Allen Lane | To Save Everything, Click Here: Technology, Solutionism, and the Urge to Fix Problems That Don't Exist

Olivery Wyman | A MONEY and INFORMATION Business, 2013

PricewaterhouseCoopers | Capitalizing on the promise of Big Data, 2013

Rick Smolen | The Human Face of Big Data, 2013

On the Web

All Things D | Big Data, Soft Sell: Netflix Pitches a Hand-Off Approach to Hollywood, March 2013

BCG Perspective | Unleashing the Value of Consumer Data, January 2013

Business2community | Big Data in Retail Banking - The Opportunities and Challenges, March 2013

CIO | Forget Big Data, the Value Is in Big Answers, March 2013

CrunchBase.com

Daily Beast | IBM CEO Rometty Says Big Data Are the Next Great Natural Resource, March 2013

Fast Co.Exist | The Promise of Peril of Big Data, March 2013

Forbes | Big Bets on Big Data, June 2012

Forbes | How Big Data Is Transforming the Hunt for Talent, March 2013

Forbes | 3 Keys to Monetize Big Data, February 2013

Forbes | Top 10 Most Funded Big Data Startups, March 2013

Forbes | Tresata Offers Big Data For Financial Firms To Act On, julio 2012

Forbes | Why Big Data Is Getting The Bully Treatment, February 2013

Gartner | Big Data is Falling into the Trough of Disillusionment, March 2013

Gartner | Top Technology Predictions for 2013 and Beyond, February 2013

GigaOm | European governments agree to open up public data, April 2013

GigaOm | Forget data transparency: options grow for letting you hid your data, April 2013

GigaOm | Selling your Big Data initiative to your c-suite, April 2013

GigaOm | Stucture: Data event coverage, March 2013

GigaOm | The history of Hadoop: From 4 nodes to the future of data, March 2013

Google | Google Trends

Harvard Business Review | The Companies and Countries Losing Their Data, March 2013

Harvard Business Review | Insight Center - Big Data: Beyond the Hype

Harvard Business Review | The Case of Crafting a Big Data Plan, March 2013

Harvard Business Review | What a Big Data Business Model Looks Like, Decembre, 2012

IBM | Big Data at the Speed of Business

IDC | Big Data/Analytics

InfoWorld | Big Data Channel

Intel | What Happens in an Internet Minute? 2013

J W T Intelligence | Big Data ushers in new ways to determine creditworthiness, March 2013

McKinsey & Company | Making data analytics work: Three key challenges, March 2013

McKinsey & Company | Putting Big Data and advanced analytics to work, September 2012

MIT Technology Review | The Problem with Our Data Obsession, February 2013

New York Times | The Mayor's Geek Squad, March 2013

NPR | Explaining Big Data: NPR, March 2013

Pando Daily | Nate Silver to startups: Go for the low hanging fruit, March 2013

PSFK/Guardian | Big Data: For the Greater Good or An Invasion of Privacy? March 2013

Register | The Big Data Revolution: Big Bang or loud noise?, March 2013

SAS | Big Data section

Skoll World Forum | Debate: How Can Big Data Have a Social Impact?

Smart Data Collective | Analytics, Graph Search, APIs: Is Facebook Struggling with Big Data?, March 2013

TechCrunch | Payment Startups Take The Data, Design And Development Route To Route To Reengineer The Credit Card Business, March 2013

TechCrunch | Big Data Right Now: Five Trendy Open Source Technologies, March 2013

The Financial Brand | Big Data: Big Opportunity in Banking ... Or Big B.S.?, November 2012

The Financial Brand | From Science to Art: Big Data Can Paint a Clear Picture For Banking CMOs, CIOs, March 2013

The Financial Brand | Is Banking Really Ready for Big Data?, November 2012

The Financial Brand | The Empty Promise of Big Data, January 2013

Total Customer | Kleenex Jumps into Selling Direct to Consumers in Search for Big Data, March 2013

Venture Beat | Why everyone needs to care about data, February 2013

Venture Beat | Big Data section

Venture Beat | 'Big Data' is dead. What's next?, February 2013

Wall Street Journal | Banks Using Big Data to Discover 'New Silk Roads', February 2013

Wall Street Journal | Big Data is Here - Now the Real Work Begins, March 2013

Wall Street Journal | Moneyball, VC Style, March 2013

Wall Street Journal | Tracking Sensors Invade the Workplace, March 2013

Wall Street Journal | When More Trumps Better, March 2013

Wall Street Journal: CIO Report | Do You Really Have a Big Data Problem?, Decembre 2012

Wired | Does Big Data Mean the Demise of the Expert -- And Intuition?, March 2013

Yahoo | Big Data Generaates Big Returns: Q&A; With VC Roger Ehrenberg, March 2013

YouTube: Kate Crawford | Algorithmic Illusions: Hidden Biases of Big Data, February 2013

ZD Net | Big Data section

ZD Net | Big Data analytics can help gamemakers be 'next Angry Birds', March 2013

ZD Net | Big Data: How the revolution may play out, November 2012

ZD Net | Real-time Big Data in government: Big Data or Big Brother?, March 2013

Trending issues

In this section, readers will find summaries of the most relevant news of selected topics that have been published over the course of the month based on its relevance to the Banking industry. The summaries were prepared by the editorial board. Further information is made available for each given topic.

Core Banking Platforms

And the Winner is ... Celent selects Accenture Client as 2013 Model Bank of the Year for executing one of the successful core infrastructure replacement

"Accenture helped BBVA Companss to implement Alnova Financial Solutions, its core banking software platform, ... Alnova has helped the bank reduce the time it takes to open a new deposit account from more than 40 minutes to as little as five, and reduced its time to market with new products by up to 75 percent."

"Innovation in core technology is a major differentiator in today's financial services marketplace," said Richard Lumb, group chief executive, Financial Services, Accenture.

New Formats

Meet the iPad, a swiss army knife for bank branches

Potential use for iPads as in-branch tablet kiosks:

- Demos, training, and troubleshooting.
- Onboarding new customers into digital banking.
- Digital brochures for product review and comparison.
- Customer check-in device to create a waiting systems.
- Interactive forms for online account opening, load applications.
- Other options include financial calculators, video libraries, branch locations, etc.

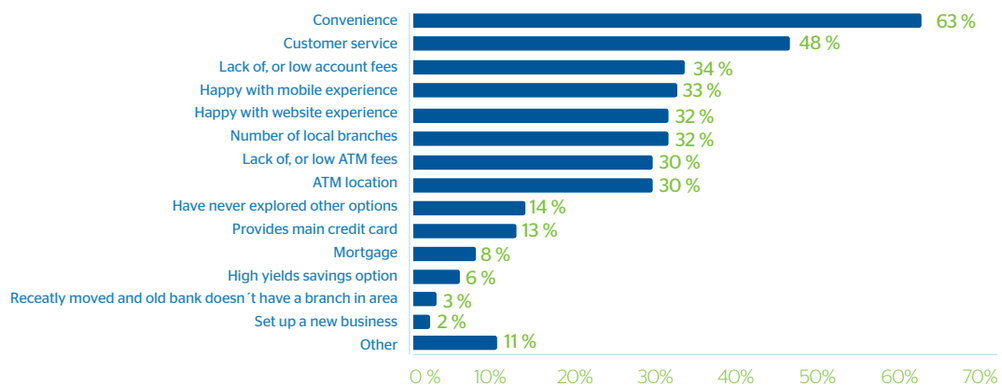
Mobile Banking

Mobile Banking Critical to Customer Loyalty

A new online study conducted by Harris Interactive shows that banking convenience 'dominates' all options amongst reasons to stay with banks.

- 31% of US adults with a bank account use mobile banking.
- 1 in 3 US smartphone owners access banking information via a mobile app.

Reasons For Staying with Current Bank



Social Business

What's next in Social Business? It is the Collaborative Economy

Brands will rent, lend, provide subscriptions to products and services to customers, or even further, allow customers to lend, trade, or gift branded products or services to each other."

Mobile Payments

Amazon patents a Mobile Payment System that keeps transactions anonymous, entering into the payment intermediary space

"If Amazon were to implement this, they could become a competitor for payment intermediaries like PayPal. Given that its online marketplace already competes with PayPal owner eBay, and that it already has millions of user accounts with active credit cards on file, it's not too much of a stretch for the company away from its core business."

Customer-Centricity

Airline let passengers choose own meals

The Latvian airline airBaltic will soon be allowing passengers to customize their on-board meals. During the pre-order process, passengers can choose from a range of meal options that cover the culinary traditions of different parts of the world. People can then virtually drag and drop their preferred meal items, from a choice of 20 main courses, three salads, bread, desserts and drinks, onto a digital airline tray. Health-conscious passengers can also check out the nutritional information to help them make an informed inflight meal decision.

Brands & Branding

Vimeo connects brands and creative minds

The video service Vimeo has launched a new tool called "Brand Creative Fund" which puts brands in contact with creative people in order to come up with original advertising material. Each project is specially adapted to the wishes of the brand and makes the most of the Vimeo community. The resulting content can be shared via the platform and thereby embedded in other websites. The first project emerged in partnership with the car manufacturer Lincoln, with four film-makers being asked to produce short films for the "Hello Again" campaign.

Crowd Finance

A marketplace for crowdfunded products

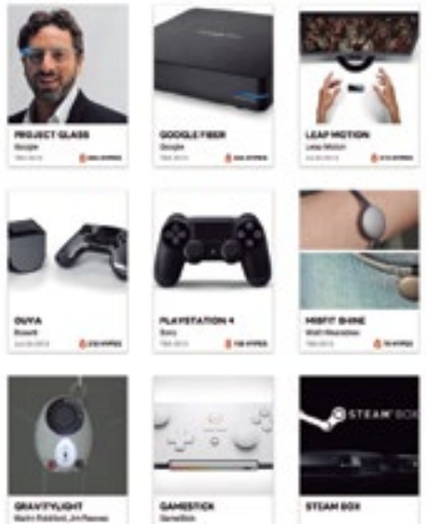
Swish is a marketplace for pre-orders. We aggregate the best pre-orders from across the internet. Most of the products you see are being sold by other websites. If you see something you like, you can click through and purchase on that website. Swish has no particular relationship with these sites, we just link to them. Sometimes they write us thank-you notes.

App Ecosystem

Why are there only two app stores?

"There are billions of app-hungry consumers and there is an abundance of app developers investing in new products," but we really have only two app stores.
Today's app stores are great distribution platforms and they are trusted by consumers, but as walled gardens, they impose too many restrictions on the developers.
We must allow the market to drive innovation and development of the app ecosystem and not let it be dictated by today's app store policies.
To succeed, a new ecosystem would need to be open in the sense that it should not restrict developers or consumers to one store with one set of rules.

Gadgetology



Platfom for unreleased cool stuff

Hypejar.com collects all the latest rumours about unreleased products and devotes new gadgets, films, software and so on a page of their own on the platform, where the latest information about them is automatically updated. Users can also create their own "Hypes", add useful details to the articles, rate them on a "Hypemeter" and find out more about the products' release dates. The platform rewards users with points for their activities.

New Banking Experience

ING - Ode to Orange

This branch's interior has been divided into three access areas (self-service banking, the customer service zone and support areas) significantly facilitating orientation of customers in the bank.

Highlights include:

- Teller Pods.
- Meeting Rooms.
- Cool Lamps.
- Floor Signage.

Big Data

Can Big Data offer a glimpse of your (or your child's) academic performance in the future?

A new analytics engine from education technology company Desire2Learn uses Big Data to predict and improve student performance in higher education ... based not on the experiences of others but on their own past performance.

The company's CEO states,"It provides deeper insights to teachers on how to achieve better outcomes, what's working and what's not working."

Future of Work

The era of screens & assistants

Work is conducted on, and through, screens. This makes possible an unprecedented breadth and depth of connectivity with others, and we are now inundated with new data about the world. This will change the organization of work and our workspaces in substantive ways.

Algorithms embodied as robots or avatars provide solutions to problems, facilitate decision-making, measure performance, and in general, take care of most routine tasks. In this future, more and more work focuses on the non-routine, which requires collaboration.

DIY

The rise of the makers, a community driven by sharing inspiration and ideas across the web

Welcome to the Maker Movement, an evolution of millions of people who are taking big risks to start their own small businesses dedicated to creating and selling self-made products. In a world of mass-produced products, modern technology has made it easier than ever for a single individual to create and distribute items that are customizable and unique without having middlemen like manufacturers. This growing shift will continue to affect the economy and will likely have big implications on large retailers. It is a special time in history that will have a transformative impact on our future.

The following section outlines the upcoming technologies that will change everything, with predictions on what may come of them in financial industry.

Help me decide or do it for me?

The most difficult task we face in our day is the "decision making", about everything, at what time we wake up taking to account the early daily meeting with our team, what clothes we should wear according to the weather and the people we are going to meet today, what should we eat, which book should we read now, which movie should we watch in the cinema after having dinner (and in which restaurant?).. every day is decision making task!

And what about apps? I'm sure that only a few of the apps we use day by day are "smart" enough to help in making this task easier in real life. There are apps that recommend what to do or buy based on our tastes and preferences, most online stores offer personalized product recommendations, to help us make decisions to buy something (Amazon), watch something (Netflix, Youtube) or eat something (Alfred, Ness, Foodspoting, Yelp, or even Foursquare). However, there is little to help us decide where to buy and how to pay. Here we review two of them:

Glyph: This app will tell you the best type of credit card of your wallet (not which one of user's cards exactly) to use in order to earn the most valuable rewards (cash back, travel or hotel loyalty points, discounts) or any other type of credit card-activated reward. The company supports over 250 credit cards, including the top 18 credit issuers in the U.S., representing over 90% of today's credit cards transactions (that's a lot of them!)
The app also pushes real time alerts to your phone based on your location, with information about the shops nearby where you should buy, and which one of your cards use to obtain the best rewards.

Walla.by: Is a cloud-based digital wallet that works quite similar. Using this app you will pay with the right credit card to obtain the maximum rewards of it. However, Walla.by has a universal credit card linked to the app that, when the user pays with it, the transaction will be routed to the appropriate card based on the consumer's preference (to obtain travel miles or cash back, or any other card reward). Based on these rules, Walla.by will make a real-time decision about where to route the payment. So, this is not another digital wallet, but a swipeable card itself, that the consumer can use as any other card.

WHICH ONE OF THESE SOLUTIONS DO YOU PREFER?

The differences between the two apps are obvious and have been already explained here, but it is worth stopping to think about the concepts that each solution involve.

The "help me to decide" feature is what we've been seeing so far in the digital world, as the personalized recommendations mentioned before. However, we are gradually moving from the recommendation to the action. We all are dreaming with the next virtual assistant to perform actions based on our behavior, context, everything that we would find in our way, would be completely customized and adapted to our needs and preferences, but ... is that what we really want, or do we want to continue using our freedom of choice?

Turning a Facebook "Like" into a "Buy"

Purchases through Facebook are not successful at all yet, despite all the efforts of brands to reach their customers through this social network. Currently there are pages for stores in Facebook, f-stores, where merchants can upload a product catalog as a storefront, see the customer reviews in comments, and set up a page tab where customers can buy directly the product. There are also external store applications for facebook that the user has to install and manage, as any other Facebook app.

It seems to be easy for customers to interact with the store, they would not need anything else...apparently. However, the simple fact of "being on Facebook" and give the ability of buying your products from the platformdoes **not mean it will work out**.

SO, WHAT'S MISSING?

We have already talked about the trend of seamless payment processes, and how information and actions in Facebook are shown frictionless, allowing the interaction with some apps without leaving the timeline, either hear a song, see a pic or a video from youtube: everything now is directly embedded in the newsfeed.

Ribbon unifies both concepts launching (yesterday) a solution to make purchases frictionless, directly from the Facebook newsfeed, by credit card payments. The operation is also seamless since, once the first purchase is done, the data is saved to make the next payment in just one-click, completing the transaction as fast as you press the Like button on a picture of a cute kitten. In this way, Facebook users can see product photo, title, description, inventory level indicator, price and a "buy" button without abandon their newsfeed, saving the extra steps of trying to drive traffic to another web page out or shopping site.

Before this recent launch, the company was focused on making digital payments easier by introducing a one-page checkout system that can be linked to from web, email and social media sites like Facebook, Twitter, YouTube, Pinterest or anywhere else. The extra point of Ribbon is that they have not developed a different solution for each platform but only one which detects from where the user comes and adapt the experience accordingly.

See video:

LET THE FIGURES SPEAK ...

Will it be the solution to the "failure" of f-commerce? Seems that Tim Draper's (Draper Associates), Siemer Ventures, Emil Michael (Klout COO), Naguib Sawiris, Winston Ibrahim (Hydros) and MicroVentures trust them to solve part of the problem, recently closing $1.6 million seed round (previously raised $120,000 from AngelPad, Gokul Rajaram, Sierra Ventures, and InterWest Partners).

Let's see the numbers in 2013, maybe we find out that what we need is easier automated and instinctive purchase processes instead of being a matter of the content and what the users want to see (and do) in their own Facebook pages and timelines.

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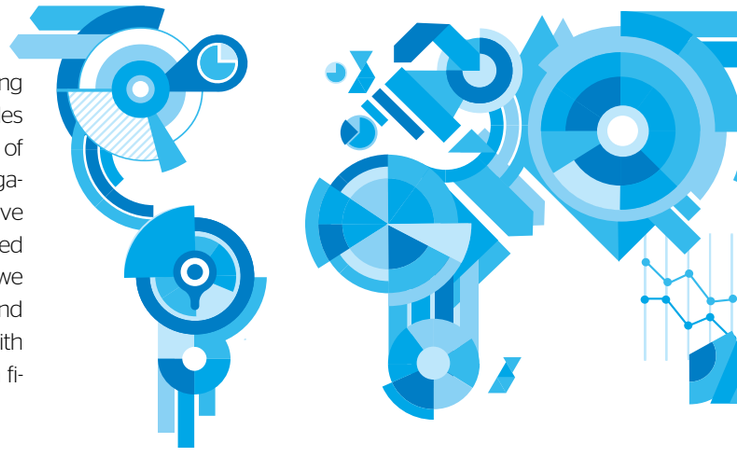
Event

Big Data



BBVA Innovation Center is host to Banking Trends, a quarterly event which coincides with the presentation of the latest issue of Innovation Edge, a multi-platform magazine. At the event, the most innovative trends in banking are presented, discussed and analyzed. In this particular issue, we focus on the Big Data phenomenon and how it is affecting the business world, with a special emphasis on its application in financial services.

Speakers include:

Esteban Moro, professor at the Universidad Carlos III de Madrid and technical director at the Instituto de Ingeniería del Conocimiento.

Miguel Luengo-Oroz, data scientist, focused on global challenges in the fields of international development and biomedical investigation.

Javier de la Torre, founder of Vizzuality, a company specialized in analyzing large quantities of information; which, once processed, turns into stories and intelligible narrations.

Come and join us at Banking Trends to listen to leading subject matter experts

More info

On June 19th, the BBVA Innovation Center's Banking Trends will discuss Big Data.

The event will be held at Plaza de Santa Bárbara 2, Madrid 28004; from 9:30 to 14:00 o'clock.

You will be able to follow all the conferences via streaming at BBVA Innovation Center's website. After the event, you are invited to visit the archives to find the best interviews, highlights, and photographs from the event.

www.centrodeinnovacionbbva.com

BBVA and Madrid's City Hall present an innovative survey based on Big Data

Tourism Dynamics in the city of Madrid, a survey of real commercial activity through 2012 analyzes tourists' behavior from their commercial activities, using massive data technologies or Big Data. The study is the first tangible result of the collaboration between Madrid City Hall and BBVA to promote innovation and smart cities.

BBVA Innovation Center held the presentation of the survey, ***Tourism Dynamics in the city of Madrid,*** a study on real commercial activity through 2012. The work is a result of the year-long collaboration between the bank and the Oficina de Turismo Madrid, Visitors & Convention Bureau.

Hugo Nájera, Chief Innovation Officer at BBVA, along with Dolores Flores, General Coordinator of Economy and Employment at Madrid's City Hall; and **Mar de Miguel**, Managing Director at Madrid Visitors & Convention Bureau intervened in the presentation.

"To BBVA, the concept of Big Data focuses on the intelligent management of digital information, which upon analysis can help to take decisions which can affect positively to the living conditions of the people", Nájera stated. Some of the conclusions of this report describe how visitors from the United States of America spend more money in Madrid, followed by those coming from France, United Kingdom, Italy, and Brazil."

Use this QR code to download the report

Upcoming events

NEXTBANK Madrid

Next Bank Madrid is a collaborative conference that discusses **innovation, transformation, and disruption that startups** are provoking in the financial services industry. In NextBank Madrid, traditional actors such as banks, consultants, and technology suppliers meet alternative actors like startups, digital ecosystems, or companies from other industries to form a **new and innovative fintech community**. The collaboration aims to discuss the real future of financial services and explore great ideas that may change the industry.

Date: **June 25th**

InnovaData

First Data Journalism challenge. InnovaData is an international challenge, organized by BBVA in partnership with Fundación Ciudadana Civio. The first edition aims to give data journalism a boost, within a framework of a global, technological society.

Date: **June 26th**

The Api Hour

The API Hour aims to be a **forum where API professionals come together to divulge the characteristics, utilities and the future of APIs (Application Programming Interface)**; sharing experiences, both in Spain and other countries, and seeing them through different lenses.

Date: **July 11th**

BBVA expands the MIT's Innovadores Menores de 35 to Latin America

Thanks to a renewed partnership with BBVA, *MIT Technology Review* is now also looking for Young entrepreneurs in Mexico, Colombia, Peru, Chile, Brazil, Central America, Argentina and Uruguay, in addition to Spain

BBVA has announced a new and reinforced agreement with the Spanish edition of *MIT Technology Review*. According to the partnership, BBVA becomes a global partner for the Innovadores Menores de 35 (formerly known as TR35) and will be present in key Latin American countries.

The Massachusetts Institute of Technology (MIT), one of the main promoters of innovation worldwide, have been hosting the awards for over a decade. The *MIT Technolgy Review's* Innovators Menores de 35 has become a reference for discovering and supporting emerging talent.

The aim is to acknowledge Young researchers and entrepreneurs who carry out creative and inspiring Project that offer solutions to real problems with technology. The philosophy fits perfectly with BBVA view point: interacting with entrepreneurs is one of the pillars of its innovation strategy.

With this alliance, BBVA supports the creation of an international community of innovators who will be in the vanguard of technological and business development in the future," declared Ignacio Deschamps, Director of BBVA Retail Banking, while announcing the agreement with *MIT Technology Review* at the Emtech convention in Mexico.

The award cover all areas of technology: biomedicine, energy, materials, telecommunications, computing, and the Internet. The only necessary requirements for the awards are: be a legal resident of the country of where the awards are given and be less than 35 years of age.

The EmTech event in Mexico was the first scene chosen to present this agreement between BBVA and *MIT Technology Review.*

800 attendees representing **10 different countries,** attended the event. Discussion 8 panels were held, which included topics such as Internet, education, cities of the future, climate change, healthcare and the entrepreneur ecosystem.

AN OPEN INNOVATION MODEL

BBVA Retail Bank Director, Ignacio Deschamps, concluded, "undoubtedly, the inspiration provided by these ecosystems is essential, where big ideas that seem crazy can become the next Google or Facebook."

Along with Mr. Deschamps, Sergio Salvador, the Director of Operation and Information Systems at BBVA Bancomer, was given the task of delivering the prizes to the 10 young innovators under 35 years of age in Mexico this year. He added, "Technology is changing our behaviorial patterns."

In this regard, he pointed out BBVA's commitment to open innovation; which in his opinion is "what helps us listen to what's happening globally on the ecosystem."

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Innovation edge

BBVA Innovation Edge is the result of a collaborative work done by all the people who are involved in innovation at BBVA Group.

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BBVA Innovation Edge is the first corporate magazine focused on innovation. Innovation Edge aims to explore new trends and technologies that may impact the financial industry, especially retail banking.

APP: Available on the App Store...

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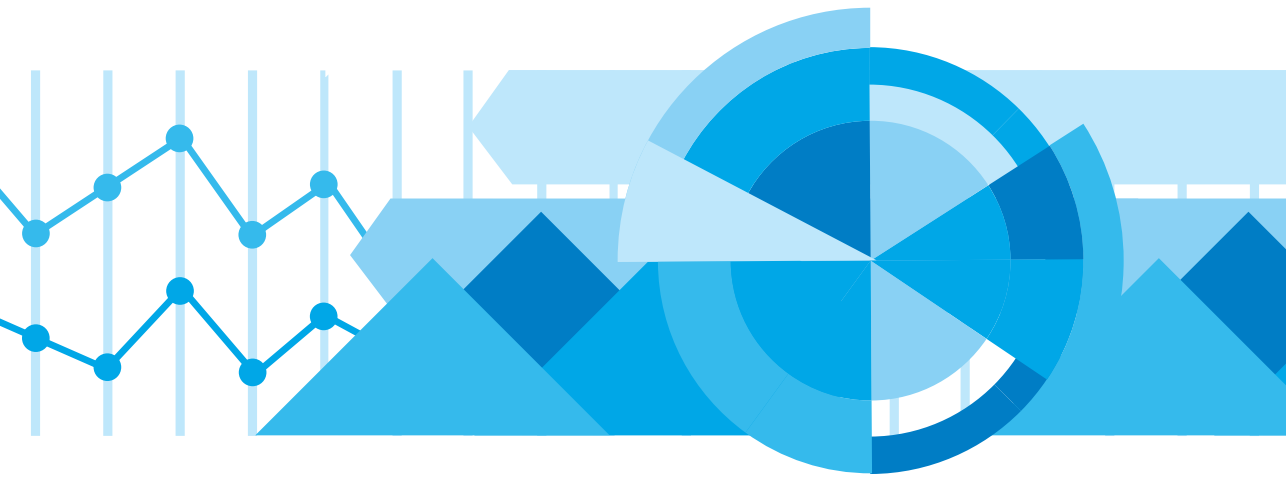

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