SNS Research
Market Intelligence & Consultancy Solutions

The Big Data Market: 2014 – 2020

Opportunities, Challenges, Strategies, Industry Verticals & Forecasts

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1 Chapter 1: Introduction

1.1 Executive Summary

"Big Data" originally emerged as a term to describe datasets whose size is beyond the ability of traditional databases to capture, store, manage and analyze. However, the scope of the term has significantly expanded over the years. Big Data not only refers to the data itself but also a set of technologies that capture, store, manage and analyze large and variable collections of data to solve complex problems.

Amid the proliferation of real time data from sources such as mobile devices, web, social media, sensors, log files and transactional applications, Big Data has found a host of vertical market applications, ranging from fraud detection to R&D.

Despite challenges relating to privacy concerns and organizational resistance, Big Data investments continue to gain momentum throughout the globe. SNS Research estimates that Big Data investments will account for nearly $30 Billion in 2014 alone. These investments are further expected to grow at a CAGR of 17% over the next 6 years.

The "**Big Data Market: 2014 – 2020 – *Opportunities, Challenges, Strategies, Industry Verticals & Forecasts***" report presents an in-depth assessment of the Big Data ecosystem including key market drivers, challenges, investment potential, vertical market opportunities and use cases, future roadmap, value chain, case studies on Big Data analytics, vendor market share and strategies. The report also presents market size forecasts for Big Data hardware, software and professional services from 2014 through to 2020. Historical figures are also presented for 2010, 2011, 2012 and 2013. The forecasts are further segmented for 8 horizontal submarkets, 15 vertical markets, 6 regions and 34 countries.

The report comes with an associated Excel datasheet suite covering quantitative data from all numeric forecasts presented in the report.

1.2 Topics Covered

The report covers the following topics:

- Big Data ecosystem
- Market drivers and barriers
- Big Data technology, standardization and regulatory initiatives
- Big Data industry roadmap and value chain
- Analysis and use cases for 15 vertical markets
- Big Data analytics technology and case studies
- Big Data vendor market share
- Company profiles and strategies of 90 Big Data ecosystem players
- Strategic recommendations for Big Data hardware, software and professional services vendors and enterprises
- Exclusive interview transcripts of 4 players in the Big Data ecosystem
- Market analysis and forecasts from 2014 till 2020

1.3 Historical Revenue & Forecast Segmentation

- Market forecasts and historical revenue figures are provided for each of the following submarkets and their subcategories:
  - Hardware, Software & Professional Services
    - Hardware
    - Software
    - Professional Services
  - Horizontal Submarkets
    - Storage & Compute Infrastructure
    - Networking Infrastructure
    - Hadoop & Infrastructure Software
    - SQL
    - NoSQL
    - Analytic Platforms & Applications
    - Cloud Platforms
    - Professional Services
  - Vertical Submarkets
    - Automotive, Aerospace & Transportation
    - Banking & Securities
    - Defense & Intelligence
    - Education
    - Healthcare & Pharmaceutical
    - Smart Cities & Intelligent Buildings
    - Insurance

- Manufacturing & Natural Resources
- Web, Media & Entertainment
- Public Safety & Homeland Security
- Public Services
- Retail & Hospitality
- Telecommunications
- Utilities & Energy
- Wholesale Trade
- Others

- Regional Markets
  - Asia Pacific
  - Eastern Europe
  - Latin & Central America
  - Middle East & Africa
  - North America
  - Western Europe

- Country Markets
  - Argentina, Australia, Brazil, Canada, China, Czech Republic, Denmark, Finland, France, Germany, India, Indonesia, Israel, Italy, Japan, Malaysia, Mexico, Norway, Pakistan, Philippines, Poland, Qatar, Russia, Saudi Arabia, Singapore, South Africa, South Korea, Spain, Sweden, Taiwan, Thailand, UAE, UK, USA

1.4 Key Questions Answered

The report provides answers to the following key questions:

- How big is the Big Data ecosystem?
- How is the ecosystem evolving by segment and region?
- What will the market size be in 2020 and at what rate will it grow?
- What trends, challenges and barriers are influencing its growth?
- Who are the key Big Data software, hardware and services vendors and what are their strategies?
- How much are vertical enterprises investing in Big Data?
- What opportunities exist for Big Data analytics?
- Which countries and verticals will see the highest percentage of Big Data investments?

1.5 Key Findings

The report has the following key findings:

- In 2014 Big Data vendors will pocket nearly $30 Billion from hardware, software and professional services revenues
- Big Data investments are further expected to grow at a CAGR of nearly 17% over the next 6 years, eventually accounting for $76 Billion by the end of 2020
- The market is ripe for acquisitions of pure-play Big Data startups, as competition heats up between IT incumbents
- Nearly every large scale IT vendor maintains a Big Data portfolio
- At present, hardware sales and professional services account for more than 70% of all Big Data investments
- Going forward, software vendors, particularly those in the Big Data analytics segment, are expected to significantly increase their stake in the Big Data market as it matures

1.6 Methodology

The contents of this report have been accumulated by combining information attained from a range of primary and secondary research sources. In addition to analyzing official corporate announcements, policy documents, media reports, and industry statements, SNS Research sought opinions from leading industry players within the Big Data ecosystem to derive an unbiased, accurate and objective mix of market trends, forecasts and the future prospects of the industry between 2014 and 2020.

1.7 Target Audience

The report targets the following audience:

- Big Data hardware & software providers
- Analytic platform vendors
- Professional IT services providers
- Vertical enterprises
- Investors

1.8 Companies & Organizations Mentioned

The following companies and organizations have been reviewed, discussed or mentioned in the report:

1010data	Dotomi	Mayfield fund	SiSense
Accel Partners	eBay	McDonnell Ventures	Skyscanner
Accenture	El Corte Inglés	McGraw Hill Education	SmugMug
Actian Corporation	Electronic Arts	MediaMind	Snapdeal
Actuate Corporation	EMC Corporation	Meritech Capital Partners	Software AG
adMarketplace	Equifax	Microsoft	Sojo Studios
Adobe	Ericsson	MicroStrategy	SolveDirect
ADP	Ernst & Young	mig33	Sony
AeroSpike	E-Touch	MongoDB	Southern States Cooperative
AlchemyDB	European Space Agency	Motorola	Splunk
Aldeasa	eXelate	Movistar	Spotme
Alpine Data Labs	Experian	Mu Sigma	Sqrrl
Alteryx	Facebook	Myrrix	Starbucks
Amazon.com	FedEx	Nami Media	Supermicro
AMD	Ferguson	Navteq	Tableau Software
AnalyticsIQ	Ford	Neo Technology	Talend
Antic Entertainment	Fractal Analytics	NetApp	Tango
AOL	Fujitsu	NetFlix	TapJoy
Apple	Fusion-io	Nexon	TCS (Tata Consultancy Services)
AppNexus	Gamegos	NIST (National Institute of Standards and Technology)	Telefónica
Ascendas	Ganz	North Bridge	Tencent
AT&T	GE (General Electric)	NTT Data	Teradata
Attivio	Goldman Sachs	NTT DoCoMo	Terracotta
AutoZone	GoodData Corporation	NYSE (New York Stock Exchange)	Terremark
Avvasi	Google	OASIS	The Hut Group
AWS (Amazon Web Services)	Greylock Partners	ODaF (Open Data Foundation)	The Knot
Axiata Group	GTRI (Georgia Tech Research Institute)	Open Data Center Alliance	The Ladders
Bank of America	Guavus	Opera Solutions	The Trade Desk
Basho	Hadapt	Oracle	Think Big Analytics
Beeline Kazakhstan	HDS (Hitachi Data Systems)	Orange	Thomson Reuters
Betfair	Hortonworks	Orbitz	TIBCO Software
BlueKai	HP	Palantir Technologies	Tidemark
Bluelock	Hyve Solutions	Panorama Software	TubeMogul
BMC Software	IBM	ParAccel	Tunewiki
BMW	IEC (International	ParStream	U.S. Air Force

	Electrotechnical Commission)		
Boeing	Ignition Partners	Pentaho	U.S. Army
Booz Allen Hamilton	InfiniDB	Pervasive Software	U.S. Navy
Box, Inc.	Infobright	Pivotal Software	Ubiquisys
Buffalo Studios	Informatica Corporation	Platfora	UBS
BurstaBit	Information Builders	Playtika	Umami TV
CaixaTarragona	In-Q-Tel	Pokemon	UN (United Nations)
Capgemini	Intel	Proctor and Gamble	Unilever
Cellwize	Internap Network Services Corporation	Pronovias	US Xpress
CenturyLink	Intucell	PwC	Venture Partners
Chang	Inversis Banco	QlikTech	Verizon
China Telecom	ISO (International Organization for Standardization)	Quantum Corporation	Versant
CIA (Central Intelligence Agency)	ITT Corporation	Quiterian	Vertica
Cisco Systems	ITU (International Telecommunications Union)	Rackspace	VIMPELCOM
Citywire	J.P. Morgan	RainStor	VMware (EMC Subsidiary)
Cloudera	Jaspersoft	Relational Technology	VNG
Coca-Cola	Johnson & Johnson	Renault	Vodafone
Comptel	JP Morgan	ReNet Tecnologia	Volkswagen
Concur	Juguettos	Rentrak	Walt Disney Company
Contexti	Juniper Networks	Revolution Analytics	WIND Mobile
Coriant	Kabam	RiteAid	WiPro
Couchbase	Karmasphere	Robi Axiata	Xclaim
CSA (Cloud Security Alliance)	KDDI	Royal Dutch Shell	Xyratex
CSC (Computer Science Corporation)	Kixeye	Sabre	Yael Software
CSCC (Cloud Standards Customer Council)	Kobo	Sailthru	Zettics
Datameer	Kognitio	Sain Engineering	Zynga
DataStax	KPMG	Salesforce.com	
DDN (DataDirect Network)	KT (Korea Telecom)	Samsung	
Dell	Lavastorm Analytics	SAP	
Deloitte	LG CNS	SAS Institute	
Delta	LinkedIn	Savvis	
Department of Commerce	LucidWorks	Scoreloop	
Deutsche Bank	Mahindra Satyam	Seagate Technology	
Deutsche Telekom	MapR	SGI	
Digital Reasoning	MarkLogic	Shuffle Master	
Dollar General	Marriott International	Simba Technologies	

4.2 The Big Data Value Chain

The Big Data value chain is complex with many significant players across different segments of the market, including hardware providers, software providers, professional services providers, end-to-end solution providers and vertical enterprises.

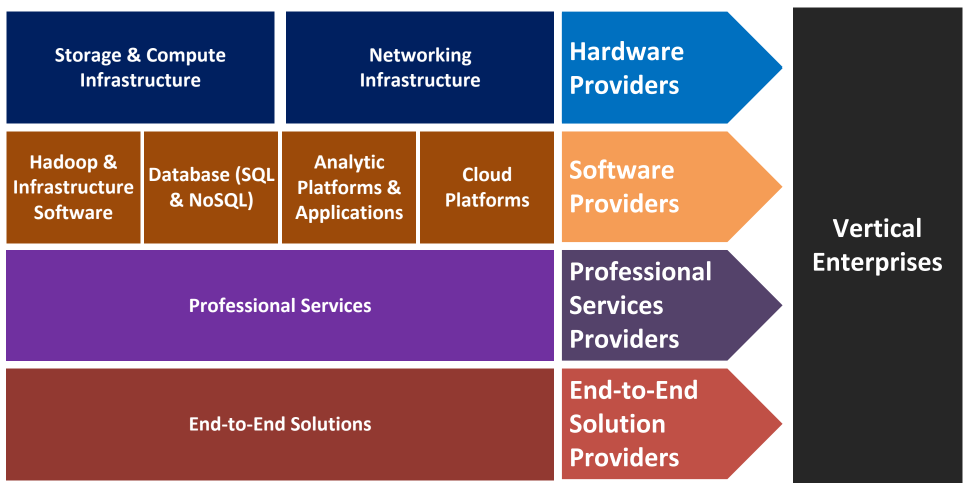

Figure 2: The Big Data Value Chain

Source: *SNS Research*

4.2.1 Hardware Providers

Hardware providers form a key link in the Big Data value chain. This segment of the value chain includes storage, compute and networking infrastructure providers.

4.2.1.1 Storage & Compute Infrastructure Providers

Compute infrastructure providers supply the embedded processing and infrastructure (i.e. servers) necessary to run Big Data solutions. A vast majority of

8.16 Cisco Systems

Company Overview

Cisco Systems a multinational corporation headquartered in San Jose, California, USA. The company designs, manufactures, and sells networking equipment, and is widely recognized as the largest supplier of fixed networking equipment.

Products & Strategy

In addition to its network infrastructure product line, Cisco offers hardware that is optimized for Big Data operations (such as its UCS[9] server platform), as well as a portfolio of Hadoop solutions and other data analytics and storage technologies.

The company has partnered closely with and has validated solutions with a number of Hadoop distributions, including Cloudera, HortonWorks, Intel, MapR, and Pivotal.

Within the telco area, the company is actively pursuing an acquisition-centric strategy[10], which makes it well positioned to capitalize on the promising telco analytics opportunity within Big Data.

The company is also eyeing acquisitions in the IT. In Q2'2013, Cisco acquired SolveDirect, a provider of cloud-delivered software that integrates services management. This was shortly followed by another acquisition. In Q3'2013, Cisco

[9] The Cisco Unified Computing System (UCS) is an (x86) architecture data center server platform composed of computing hardware, virtualization support, switching fabric, and management software
[10] Cisco acquired Israel based mobile network optimization software provider Intucell in Q1'2013. This was followed by an acquisition of small cell provider Ubiquisys in Q2'2013

8.31 Fujitsu

Company Overview

Fujitsu is a Japanese multinational information technology equipment and services company headquartered in Tokyo, Japan. The company and its subsidiaries also offer a diversity of products and services in the areas of computing, telecommunications and advanced microelectronics.

Products & Strategy

Fujitsu is active across the software and services spheres of the Big Data ecosystem. The company is a major provider of software platforms, designed for parallel distributed processing, complex event processing and extreme transactional processes.

The company's key Big Data products include: Interstage Big Data Parallel Processing Server[12], Interstage Big Data Complex Event Processing Server[13] and Interstage XTP (eXtreme Transaction Processing) Server[14].

Competitive Advantages & Challenges

The company's vast customer base and global presence (particularly in its Japanese home market) gives it a major competitive edge in the Big Data market. The company's dominant position also helps in attracting partnership proposals from new entrants in the market.

[12] The Interstage Big Data Parallel Processing Server is a parallel distributed processing software platform that combines the Hadoop with Fujitsu's own proprietary distributed file system to improve data reliability

[13]The Interstage Big Data Complex Event Processing Server uses Fujitsu's proprietary high-speed filter technology to automatically scope large volumes of events and compare them with the system's master data file

[14] The Interstage XTP Server is an in-memory distributed cache platform that supports improvements in application performance and data management

10.6 Software vs. Hardware Investments

Due to the open source nature of most software products, Big Data software revenue presently accounts for merely 29% of the overall Big Data market, while hardware[15] investments stand at nearly 40%.

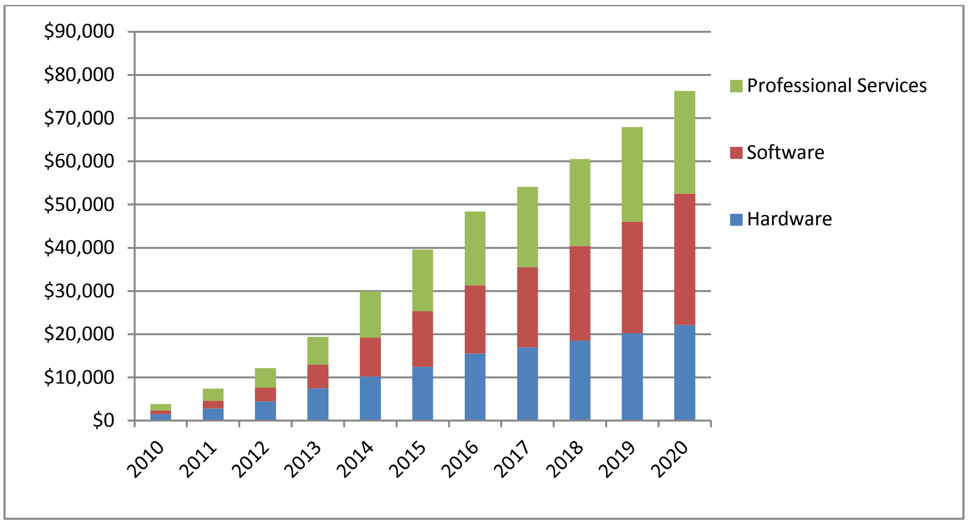

Figure 83: Global Big Data Revenue by Hardware, Software & Professional Services ($ Million): 2010 - 2020

Source: *SNS Research*

However, as vendors move towards more proprietary business models, Big Data software spending is expected to surpass hardware spending in the coming years. By the end of 2020, SNS Research expected Big Data software revenue to exceed hardware investments by nearly $8 Billion.

[15] Hardware includes storage, compute and networking infrastructure

10.8 Big Data Driving Wider IT Industry Investments

Besides functional or pure-play spending, the notion of Big Data has a profound impact on indirect IT industry investments. Big Data features are now seen as a standard requirement in leading IT architectural practices.

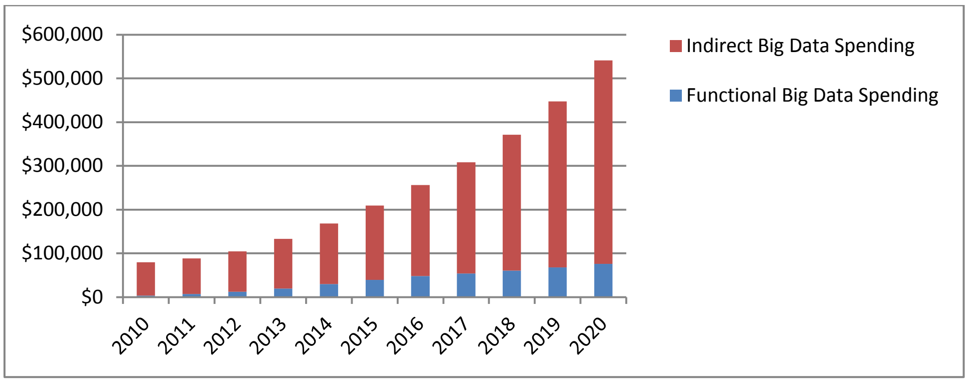

Figure 85: Global IT Expenditure Driven by Big Data Investments: 2010 - 2020 ($ Million)

Source: *SNS Research*

In 2014 alone, IT providers and enterprises are expected to invest over $138 Billion to adapt their traditional solutions to Big Data demands[16]. In comparison, merely $30 Billion will be directed towards functional Big Data software, hardware and professional services.

By the end of 2020, Big Data will directly and indirectly drive nearly $541 Billion of worldwide IT spending, following a CAGR of 21% between 2014 and 2020.

[16] Volume, variety and unpredictable velocity

10.9 Assessing the Impact of IoT & M2M

The concept of the Internet of Things (IoT) aims to orchestrate a global network of sensors, equipment, appliances, computing devices, and other objects that can communicate in real time. With communications empowered by Machine-to-Machine (M2M) technology, IoT can enable multiple industrial applications[17] to work intelligently in order to optimize entire operational environments.

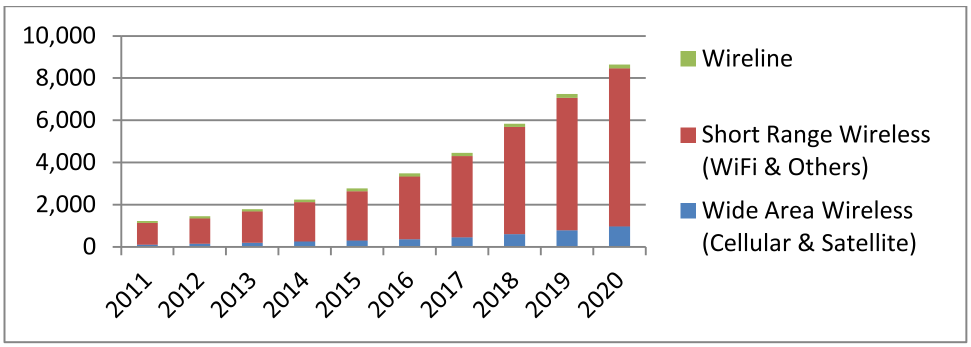

Figure 86: Global M2M Connections by Access Technology (Millions): 2011 - 2020

Source: *SNS Research*

By 2020, nearly 9 Billion M2M connections are expected to account for nearly 35% of all data worldwide. This torrent of data created by IoT and M2M presents numerous challenges[18], and thus investment opportunities. The impact will be particularly profound on Big Data analytics platforms in order to improve

[17] From a variety of vertical markets including but not limited to automotive, transportation, healthcare, energy, utilities, retail and public services
[18] Such as orchestration, scalability, security and availability