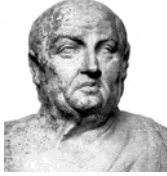


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## BIG data:

BIG challenge, BIG threat, BIG value or.... BIG hype?



**Seneca Congres  
3 september 2015**

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## Objectives

Doelstellingen/Opzet:

- 1) **Wat** is BIG data?
- 2) **Waarom** is BIG data relevant?
- 3) Inspireren dmv voorbeelden: **Hoe?**

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## Objectives


Interview Marjanne Sint:

“.....De rol van zorgbestuurder is veranderd. De belangrijkste opgave in vooral de care, meer nog dan in de cure, is vorm geven aan de échte behoefte van mensen. De boodschap van dit Seneca Congres aan bestuurders is dan ook dat juist zij zich de rol moeten aanmeten van vernieuwer in de zorg. Dus niet alleen redeneren in kosten en bezuinigingen, maar toekomstbestendig beleid maken dat ruimte biedt aan slimme oplossingen, die mensen zorg op maat bieden. Als oud-bestuurder ken ik het spanningsveld dat hierbij speelt, maar we mogen nooit vergeten waar het in deze sector om gaat: mensen. We moeten af van ‘one size fits all’, want wat we grootschalig aanbieden, is niet altijd wat de mensen willen.”


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## INTRO



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FransFeldberg

Knowledge, Information and Innovation ([www.kinresearch.nl](http://www.kinresearch.nl))

Research/Education:

- Business Intelligence & Analytics/BIG data
- Data-driven business model innovation
- Online decision making (DSS & GDSS)
- Online (buying) behavior(emerging technologies)

Business Consultant.

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## INTRO



[www.acba.nl](http://www.acba.nl)

- Business Administration & Mathematics & Computer Sciences& ....
- Bachelor and Master Business Analytics
- Post Graduate Education: Business Analytics/Data Science
- Multidisciplinary Research Center
- Eco System: Businesses & Science
- One stop shop: Access to all relevant academic Expertise

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## INTRO



Verbinding door direct contact.

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(BIG) Data..... What is going on? 

# Met Big data bezig?

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(BIG) Data..... What is going on? 

 **Dan Ariely**  
January 6, 2013 · 🌐

Big data is like teenage sex: everyone talks about it, nobody really knows how to do it, everyone thinks everyone else is doing it, so everyone claims they are doing it...

Like · Comment · Share

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(BIG) Data..... What is going on? 



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(BIG) Data..... What is going on? 

BIG Data..... Hype, kans of bedreiging?



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(BIG) Data..... What is going on? 

Some quotes:

- “...Bedrijven gaan er heel veel mee doen en aan verdienen...”
- “...Voor een kennisland als Nederland geeft dit enorme mogelijkheden...”
- “.....Je kunt een bedrijf starten die de bestaande informatie gaat vergaren, je kunt een service starten die informatie bij elkaar verzamelt en beschikbaar maakt”
- “.....Je kunt technologie ontwikkelen die dit ondersteunt, of je kunt er diensten in verkopen, er zijn verschillende mogelijkheden om er heel snel iets mee te doen”...”
- “.....Ondernemers ruiken hun kansen met nieuwe diensten en nieuwe producten...”

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(BIG) Data..... What is going on? 

## A lot of BUZZ.....

6/21/2012 @ 3:22PM | 2,455 views

### The Big Data Gold Rush

+ Comment Now + Follow Comments

For decades we have been focusing on the architecture of data; now the time has come to turn our attention to the economics of data. . .

It is a ti  
18-49 Ca  
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immedi

### Is Data The New Oil?

+ Comment Now + Follow Comments




Recently, on a CNBC Squawk Box segment, “The Pulse of Silicon Valley,” host Joe Kernan posed the question, “What is the next really big thing?” to Ann Winblad, the legendary investor and senior partner at Hummer-Winblad. Her response: “Data is the new oil.”

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(BIG) Data..... What is going on?

Finally it is all about:

Transforming data into actionable insights  
(and results).




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What is BIG data?

What Happens in an Internet Minute?



And Future Growth is Staggering


(www.intel.com)

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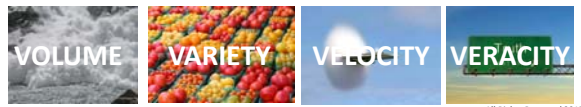
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What is BIG data?

Not in the amount of Vs....




4 times different: 4V



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What is BIG data?



"We've reached a tipping point in history: today more data is being manufactured by machines, servers, and cell phones, than by people"

"Today a street stall in Mumbai can access more information, maps, statistics, academic papers, price trends, futures markets, and data than a U.S. president could only a few decades ago"


Michael E. Dricoll  
(CTO and co-founder at Metamarkets)

Juan Enriquez  
(founding director of the Life Sciences Project at HBS)

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What is BIG data?




•Structured data  
•Unstructured data

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What is BIG data?




Three aspects:

- Speed of data creation
- Speed of data processing
- Speed of data analysis (delivery)

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What is BIG data?



- Single Version of the truth.....
- 1 in 3 business leaders don't trust the information they use to make decisions.

(<http://www-01.ibm.com/software/data/bigdata/>)

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What is BIG data?


- Granular.
- Unintentional (Expert-based versus lay cultures).
- Unmanageable.
- Constant renewal/updating.

(Constantiou & Kallinikos, 2014)

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What is BIG data?

*"More recently big data and big data analytics have been used to describe the data sets and analytical techniques in applications that are so large (from terabytes to exabytes) and complex (from sensor to social media data) that they require advanced and unique data storage, management, analysis, and visualization technologies"* (Chen et al., 2012, p. 1166).



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What is BIG data?

BIG data is more than simply a matter of size: it is also about creating insights!

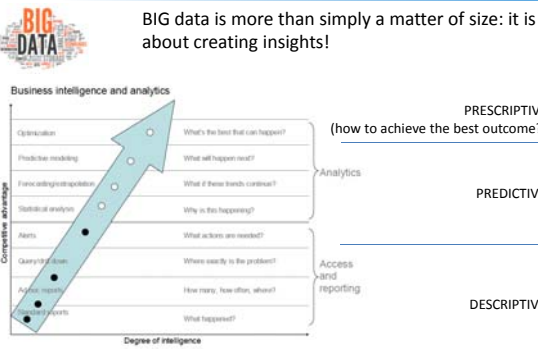
*Discovering what you don't know you don't know.....*



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What is BIG data?

BIG data is more than simply a matter of size: it is about creating insights!



Business intelligence and analytics

Competitive advantage

Collaboration: What's the best that can happen?

Predictive modeling: What will happen next?

Financial optimization: What if these trends continue?

Statistical analysis: Why is this happening?

Plans: What actions are needed?

Operational issues: Where exactly is the problem?

Analysis reports: How many, how often, where?

Key reports: What happened?

Analytics: (how to achieve the best outcome?)

PREScriptive

PREDICTIVE

Access and reporting

DESCRIPTIVE

Degree of Intelligence

(Davenport & Harris, 2006)

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What is BIG data?



New measurement tools give us new insights.  
Microscope marked a change in era (in an era of change) "GOLDEN AGE"

(Courtesy: Andrew McAfee)

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### What is BIG data?



<http://nl.wikipedia.org/wiki/Zonnestelsel#mediaviewer/File:Planets2013.jpg>

### What is BIG data?



### Why BIG data?

#### Besturen of bestuurd worden?

Interview Marjanne Sint:

*"Je kunt in de zorg op twee manieren besturen. Je laat over je heen komen wat de politiek en zorgverzekeraars over je afroepen en reageert hierop, of je geeft proactief vorm aan moreel en daadwerkelijk leiderschap."*

### Why BIG data?

Rene Penning de Vries (Boegbeeld ICT MinvEz)

Onze toekomst in 6Ds

1. Digitized
2. Demonetized
3. Democratized
4. Delocalized
5. Deceptive
6. Disruptive

Additonal D added:

7. Datafied



### Why BIG data?

#### Strategy making: New Games, New Rules!

##### Nature of data and information

###### Standard Strategy Context

Relatively Homogeneous  
Structured

Purposeful, Theory-driven  
("sorting in the way in")

Mono-semiotic, Alphanumerical

Deductive, Top-Down

Long-Term Horizon

Forecasting

(Constantiou & Kallinikos, 2014)

###### Big data-digital ecosystem

Heterogeneous  
Unstructured or Semi-structured

Agnostic, Haphazard  
("sorting in the way out")

Trans-semiotic (Text, Image, Sound)

Inductive, Bottom-Up

Short-Term Horizon

Nowcasting




### Why BIG data?



Moore's Law

<<clip>>

Imagine this will happen for a technology that is **fundamental** for businesses...

Why BIG data? 

Second Half of the Chessboard


Erik Brynjolfsson & Andrew McAfee

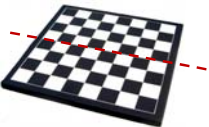
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Why BIG data? 



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Why BIG data? 



In technology strategy, the **second half of the chessboard** is a phrase, coined by Ray Kurzweil in reference to the **point** where an exponentially growing factor begins to have a **significant economic impact** on an organization's **overall business strategy**.

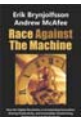
(<http://en.wikipedia.org/>)

**Andrew McAfee: When do we enter the second half of the chessboard?**


US Bureau of Economic Analysis starts tracking IT

Moore's Law doubling period

$1958 + 32 * 1,5 = 2006$



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Why BIG data? 

Published August 19, 2013

**The New York Times**

1.2 ZETTABYTES (1.2 ZETTABYTE = 1,000 EXABYTES)

1.4 ZETTABYTES

900 EXABYTES

800 EXABYTES

700 EXABYTES

600 EXABYTES

500 EXABYTES

400 EXABYTES

300 EXABYTES

200 EXABYTES

100 EXABYTES

00

05 12 17

DATA GROWTH: The amount of data coursing through the global internet annually. An exabyte is one billion gigabytes of information.

Increase in the quantity of internet data from 2005 to 2012

+1,696%

PROJECTION: Annual traffic is predicted to grow an additional 177 percent from 2012 to 2017.

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Why BIG data? 


At some point a difference in degree becomes a difference in kind.



(Jan Rotmans)

*We leven niet in een tijdperk van veranderingen maar in een verandering van tijdperken.*

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Why BIG data? 

*"We view big data and big data analytics as the mother lode of disruptive change in a networked business environment."*

(Baesens, Bapna, Marsden, Vanthienen, Zhao, 2014)

MIS Quarterly **Call for Papers MISQ Special Issue on**

Transformational Issues of Big Data and Analytics in Networked Business

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Why BIG data?



Not only data, but also:

- Internet as a Service
- Cloud Computing
- High Performance Computing
- Crowd Sourcing
- Powerful Software (Open Source!)
- High Performance Analytics



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Why BIG data?



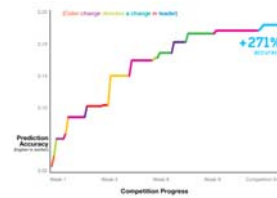
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Why BIG data?



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Why BIG data?



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Why BIG data?



What about your company.....?

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Why BIG data?



The question is: *To be disruptor or disrupted.....*

		Producten/Diensten	
		Bestaand	Nieuw
Markten	Bestaand	Ontregelaar: wij of zij?	Ontregelaar: wij of zij?
	Nieuw	Ontregelaar: wij of zij?	Ontregelaar: wij !!

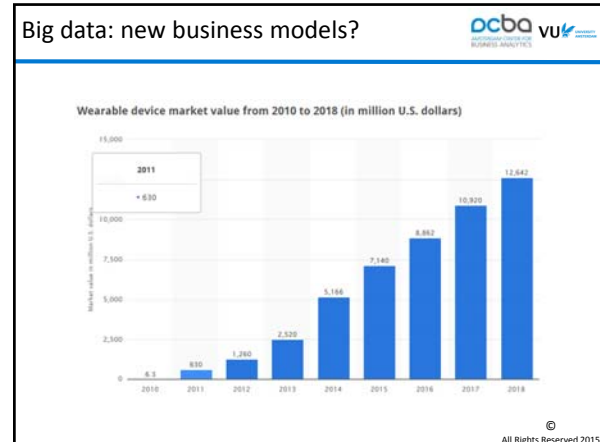
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### Big data: new business models?

## Disruptors.....

Zelfmetingen in de zorg met sensoren, apps, devices en internet

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### Big data: new business models?

## Disruptor: customer intimacy.....

#### 'Health apps in 2015 gedistribueerd via ziekenhuizen'

Niet de app stores, maar ziekenhuizen en zorginstellingen gaan in de toekomst health apps voor de mobiele telefoon verkopen. Dat is de uitkomst van de Global mHealth-enquête onder Amerikaanse bedrijven in de gezondheidszorg.

Dit zou een aanzienlijke verandering in de markt betekenen, aangezien app stores nu de belangrijkste distributeurs zijn. Ondanks dat de telefoonproviders wel gezien worden als belangrijke onderdelen van de opbouw in de markt, denken de bedrijven niet dat zij in de toekomst geschikte distributiekanalen zijn, zo staat geschreven in het onderzoek van Global mHealth.

(www.zorgvisie.nl)

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### Why BIG data?

The question is: *To be disruptor or disrupted.....*

		Producten/Diensten	
		Bestaand	Nieuw
Markten	Bestaand	Ontregelaar: wij of zij?	Ontregelaar: wij of zij?
	Nieuw	Ontregelaar: wij of zij?	Ontregelaar: wij !!

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### BIG data: How (Social Listening)

## Social Listening:

Big data analytics as enabler.

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### BIG data: How (Social Listening)

#### ACBA: Automatic news detection on Twitter (NU.nl)

Category	Count
WATER W LEIDEN - INZITTENDE VAN TE WATER GERAAKTE ALTO OVERLEDEN GERAAKTE INZITTENDE	82.12
MEDIA SOCIAL GEDOWNLOAD GEELECODEBOER	71.26
AIR AIRLINES DELTA AIRLINES HELPT PASAGERS AAN STROOK-OAD BUSINESS TRAVEL	69.76
ROBOTICA NIEUW INVESTEERT MILJOENEN IN EUROPESE ROBOTIE	62.82
DRUK	60.4

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BIG data: How (Social Listening)

10 Top Apps For Eating Healthy  
(www.forbes.com)

An a day keeps the doctor away....!

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BIG data: How (Social Listening)

Marketingfacts

Health apps: 1 op de 5 smartphone-bezitters managet gezondheid

http://www.marketingfacts.nl/

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BIG data: How (Social Listening)

Myfitnesspal.com

RunKeeper

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BIG data: How (Social Listening)

Myfitnesspal.com

Recent gegeten	Nieuwste voeding	Populaire tags
Walmart Great Value - Est...	Vegetarile - Lucht-cabasa...	chicken shawarma chocolate
Thomas' - English Muffin...	Sola - Lactose Free Skim...	with cream milk fat white
Food for Life Ezekiel Bre...	Arrowhead Mills - Organic...	brezel wheat flour sauce
Kiinger - Peanut Butter, C...	Ugg - Spiced Fruit Muffi...	bailed best light bar rice
Village Inn - 1/2 Waffle...	Affiliato - Biscotta	veggie butter soap butter
Great Value (Wal-Mart) - ...	Ugg - Spiced Fruit Muffi...	crusts white dressing
Generic - Pera	Flag - Total D's Fat Creek...	pizza roasted sugar honey
Great Value - Light Brown...	Robin-Hardies Bacon - Ha...	steakhouse rice whipped
Burgen - Bread - Wholema...	Out "Dini Eischen" - Com...	rice hot ground gran...

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BIG data: How (Social Listening)

Gezondheid en fitness: verkopen lifestyle-apps jouw informatie?

http://nieuws.nl.softonic.com/gezondheid-en-fitness-verkopen-lifestyle-apps-jouw-informatie

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Why BIG data?

The question is: *To be disruptor or disrupted.....*

		Producten/Diensten	
		Bestaand	Nieuw
Markten	Bestaand	Ontregelaar: wij of zij?	Ontregelaar: wij of zij?
	Nieuw	Ontregelaar: wij of zij?	Ontregelaar: wij !!

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BIG data: Challenges, Risks



- Data Privacy and Ethics: BIG Dilemma's!
- Data Obsession ("the dictatorship of data")
- Data Quality: new paradigms?
- Skills: Data Scientists
- Energy

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Big data: Big Change....



Interview Marjanne Sint:

**Outside the box denken**

"Dit Seneca Congres is geslaagd als het ertoe leidt dat bestuurders anders naar de zorg gaan kijken en meer outside the box durven denken. De zorg is lange tijd zo'n beschermde sector geweest, dat de uitdaging ontbrak om wérkelijk met innovatieve ideeën te komen. De Albert Heijns en Jumbo's van deze wereld stellen voortdurend hun formule bij om hun consument optimaal te bedienen. Wat dit soort veranderingsprocessen betreft, heeft de zorg nog een flinke slag te maken."

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Big data: Big Change....



What must be taken out of our head and left behind?

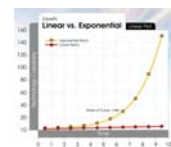
Question: "What are we going to do with the 'new thing'", must be changed in: "How are we going to change the old idea"!

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Big data: Big Change....



Paradigm shift: Linear thinking will not do!



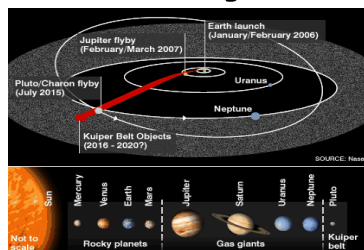
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Big data: Big Change....



Digital Innovation.

**Journey.....**



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Dank voor uw aandacht!



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