
INDONESIA
STRATEGIC
MANAGEMENT
SOCIETY
INDONESIA STRATEGIC MANAGEMENT SOCIETY (ISMS)
KNOWLEDGE SHARING & HALAL BI HALAL
"Big Data Strategy and Practices in Organisations"
THE GOAL
To Develop a Community of Practices (CoP) Focusing in
Big Data Strategy and Practices within the ISMS
ISMS proudly invites you to halal bi halal and the knowledge sharing
event "Big Data Strategy in Practice–How Successful Companies used
Big Data to deliver extraordinary results"
Date:
24 June 2019
Time:
15.00 ~ finish
Location:
MMUI - Salemba
We are looking forward to exploring
Big Data Strategy and Practices with you.
Thank you so much for your participation.
Sari Wahyuni, Ph.D
President
Dr. Lily Sudhartio
Secretary
SPEAKERS/
PRESENTER:
1. Dr. Manerep Pasaribu
2. Dr. Komang B. Aryasa
3. Dr. Nofrisel
4. Muhammad Zulkifli
5. Muhamad Yopan
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INTRODUCTION TO

AND PRACTICES

Dr. Ir. Manerep Pasaribu

Disampaikan pada:
Knowledge Sharing & Halal Bi Halal

INDONESIA STRATEGIC MANAGEMENT SOCIETY

Indonesia Strategic Management Society (ISMS)

Senin, 24 Juni 2019,
MMUI-Salemba, Jakarta

→ **Materi Presentasi ini dapat didownload di www.emperism.com**

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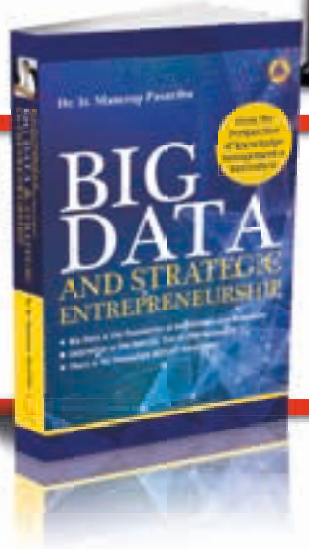
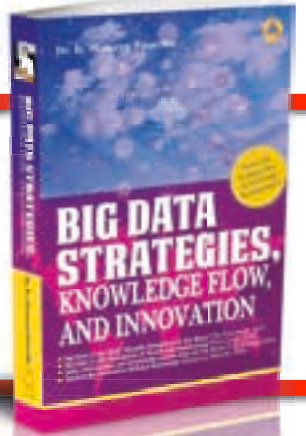


INTRODUCTION TO BIG DATA AND PRACTICES



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Senin, 24 Juni 2019, MMUI-Salemba, Jakarta

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AGENDA :

1. A Brave World-Data Driven World
2. Data as the new oil.
3. Data:
   - Small Data
   - Big Data
4. Data Strategy
5. Big Data in Practices
6. Q & A-Conclution

1 A Brave World- Data Driven World

We now live in Big Data and digital era

A brave world – data driven world (Marr, 2017)

Pasaribu, 2019

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TENTANG DATA

ERA LAMA (TRADITIONAL)

Jika akademisi atau pebisnis memerlukan data, mereka mengadakan survey.

Data terkumpul hampir terformat yang ditarik dari angka-angka atau checked boxes pada kuesioner.

Cara ini tidak lama lagi, data yang berstruktur, bersih, simple, survey based data hampir selesai (over).

Passive/Statis

ERA BARU (NEW AGE)

The messy traces, dari kehidupan kita merupakan primary source of data.

"Words are data", "clicks/likes are data", "links are data", "wheezing is data", "heartbeats are data", "spleen size is data", "searches are data", "picture are data too", "video are data", "you are data".

Active/Dynamis

Source: Seth Stephens-Davidowitz (2018), Everybody Lies: What the Internet Can Tell Us about Who We Really Are, Bloomsbury Publishing Plc. Modified by Pasaribu, 2019.

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In reality:

BIG DATA is You, me, ….us

Pasaribu, 2019

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"Physical World" → "Digital World"

(Industrial Revolutions 1-3) (Industrial Revolutions 4)

Teknological Digital & Internet

BIG DATA

"BUSINESSES" "COMPANIES" (Pelayanan, Kinerja, dan Daya Saing)

- **Social Media**
- **Mobile devices**
- **Web/Online interaction**
- **Activities or Behavior**
  → **Big Data**
- **Sensors**
- **Machines Learning** (Collect, Store, processing Information)
- **Algorithms**

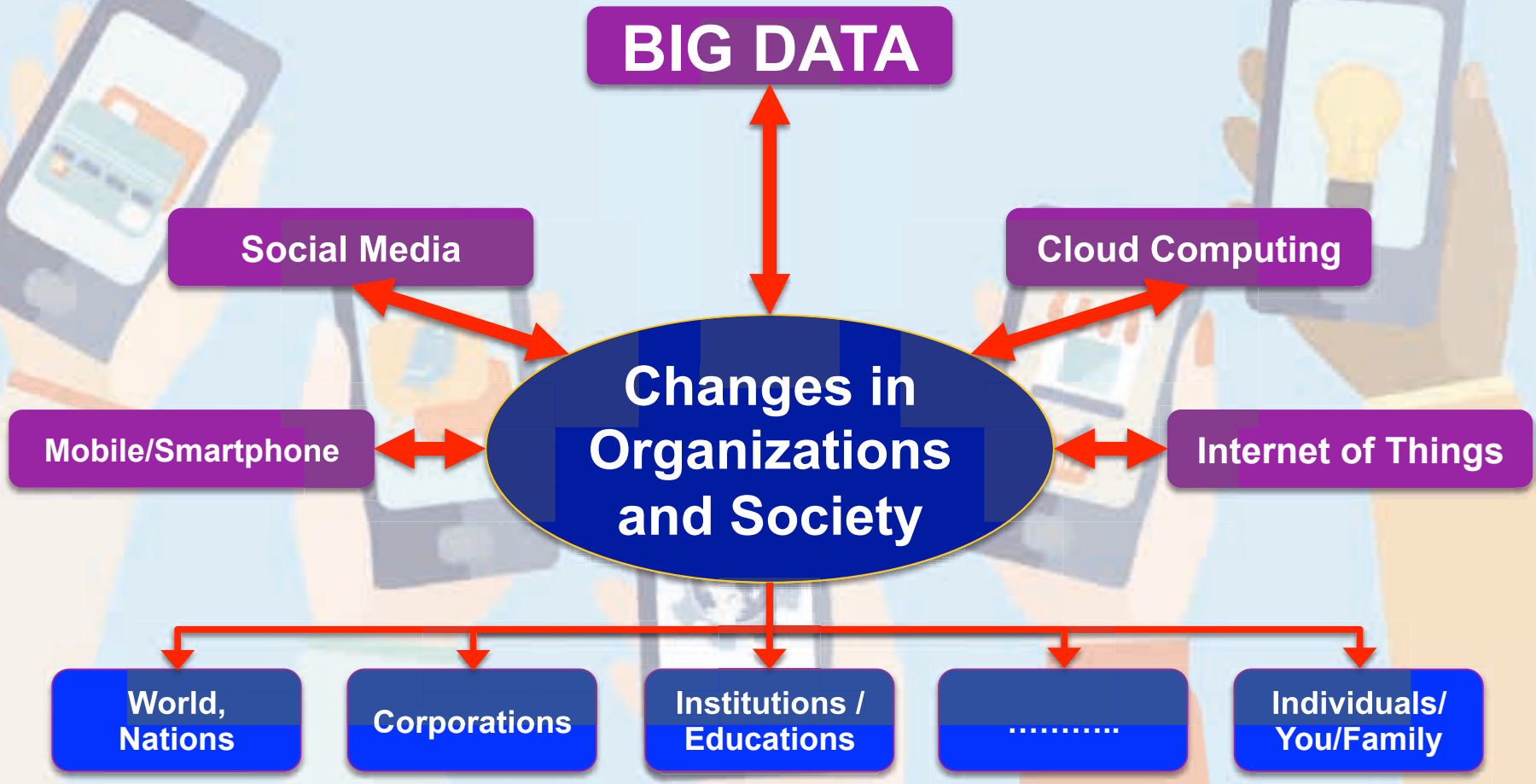
"Tanpa disadari, setiap hari kita telah membagi aneka informasi pribadi, mulai dari perbincangan sosial, kebiasaan belanja, pola bepergian, hingga transaksi keuangan, melalui berbagai aplikasi berbasis internet yang kita miliki."
(Junanto Herdiawan, Kepala Bank Indonesia Fintech Office, 2017)

"Address the most pressing questions to our business, our lives, our world":

- More informed decisions
- Adapt to change more quickly
- Better understand the world around us

Pasaribu, 2019

Five IT Megatrends



(Information Systems Today, Managing in the Digital World, 8TH, Global Edition, Pearson, 2018)

PERKEMBANGAN 4 PILAR DIGITALISASI

MOBILE DEVICES

7,3 Miliar Unit Mobile Devices di dunia pada 2015. Lebih besar dari populasi penduduk yang hanya 7 miliar jiwa.
*We are Social

CLOUD

Trafik Cloud mencapai **8,6 Zettabyte** pada akhir 2019 dan akan menguasai 83% lalu lintas data center. Data yang terkumpul dari internet 2013-2015 > dibanding ... s/d 2013
*Cisco Global Cloud Index

BIG DATA

75% pengguna digital akan memanfaatkan analisis big data pada tahun 2020 untuk mengambil keputusan pasar, tidak lagi berdasarkan pengalaman, intuisi/ keyakinan.
*Gartner Survey

SOCIAL MEDIA

1,9 Milliar pengguna Sosial Media Facebook . Total pengguna sosmed 2,8 Milliar dari 7,3 milliar penduduk dunia.
*We are Social

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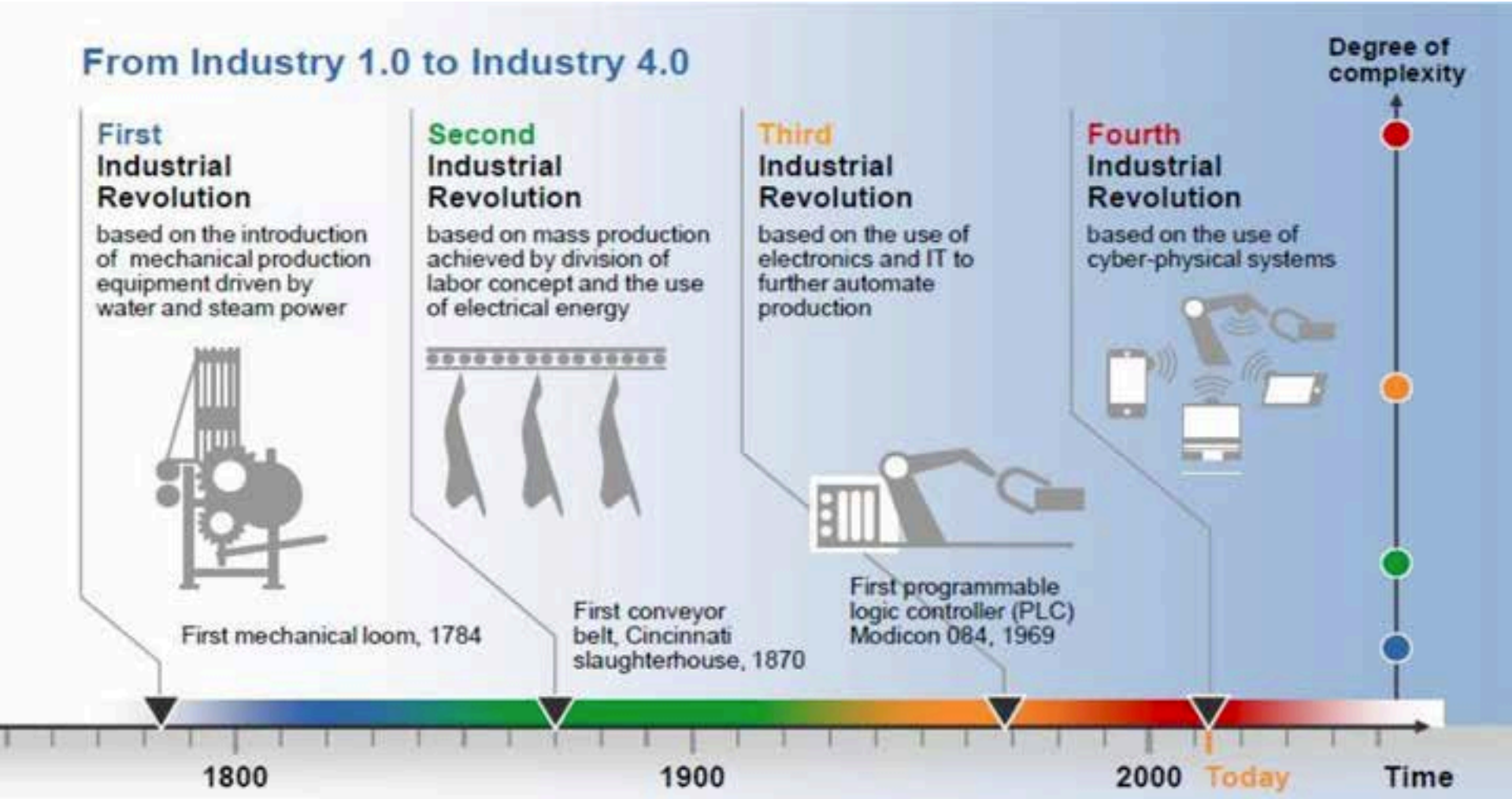
Industrial Evolution



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REVOLUSI INDUSTRI KEEMPAT

Dalam buku Klaus Schwab (2016) yang berjudul "The Fourth Industrial Revolution", Schwab (2016) membagi atas 4 tahapan Revolusi Industri yaitu:

1. **Revolusi Industri pertama (1760-1840) dipicu (trigger) penemuan rel kereta api dan mesin uap proses Produksi secara mekanik.**

2. **Revolusi industri yang kedua (abad ke-19 s.d awal abad ke-20), digambarkan penemuan listrik "assembly line dalam proses Produksi.**

3. **Revolusi industri yang ketiga dimulai dari 1960-an yang dapat diklasifikasi penemuan penting:**
   - **Computer atau digital revolution**
   - **Pengembangan semiconductors**
   - **Mainframe computing (1960's)**
   - **Personal computer (1970's s.d 1980's)**
   - **Internet (1990's)**

4. **Revolusi industri ke empat disebut juga "Industri 4.0"**
   - **Lebih luas penggunaan smartphone, connected and system.**

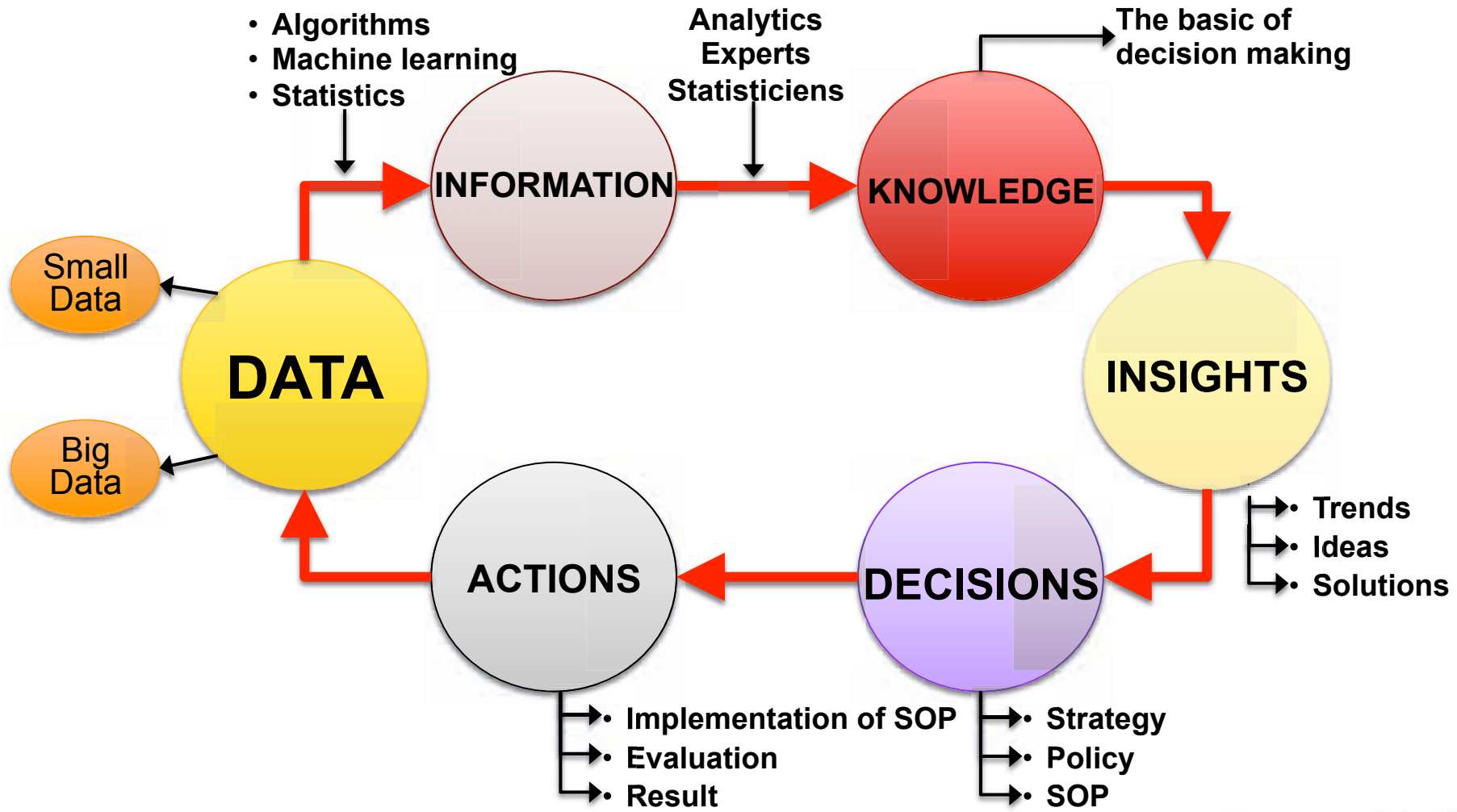
Klaus Schwab (2016)

The Three Imperialist Big Waves

DESCRIPTION	IMPERIALISM 1.0	IMPERIALISM 2.0	IMPERIALISM 3.0
What to Conquer	Land	Internet	Big Data
Conqueror	Nation, global corporation	Digital Corporation	Corporaticracy, data analytic company
Enabler	Weapons/ battleships	Digital biz models & capital	Algorithms & data analytics
Monetization	Industrial commerce	Digital commerce	Data commerce
Economies	Global economy	Digital economy	Surveillance economy
Influential Players	EIC, VOC, etc.	The Big Four (Amazone, Apple, Google, Facebook)	Facebook, Cambridge Analytics, etc.

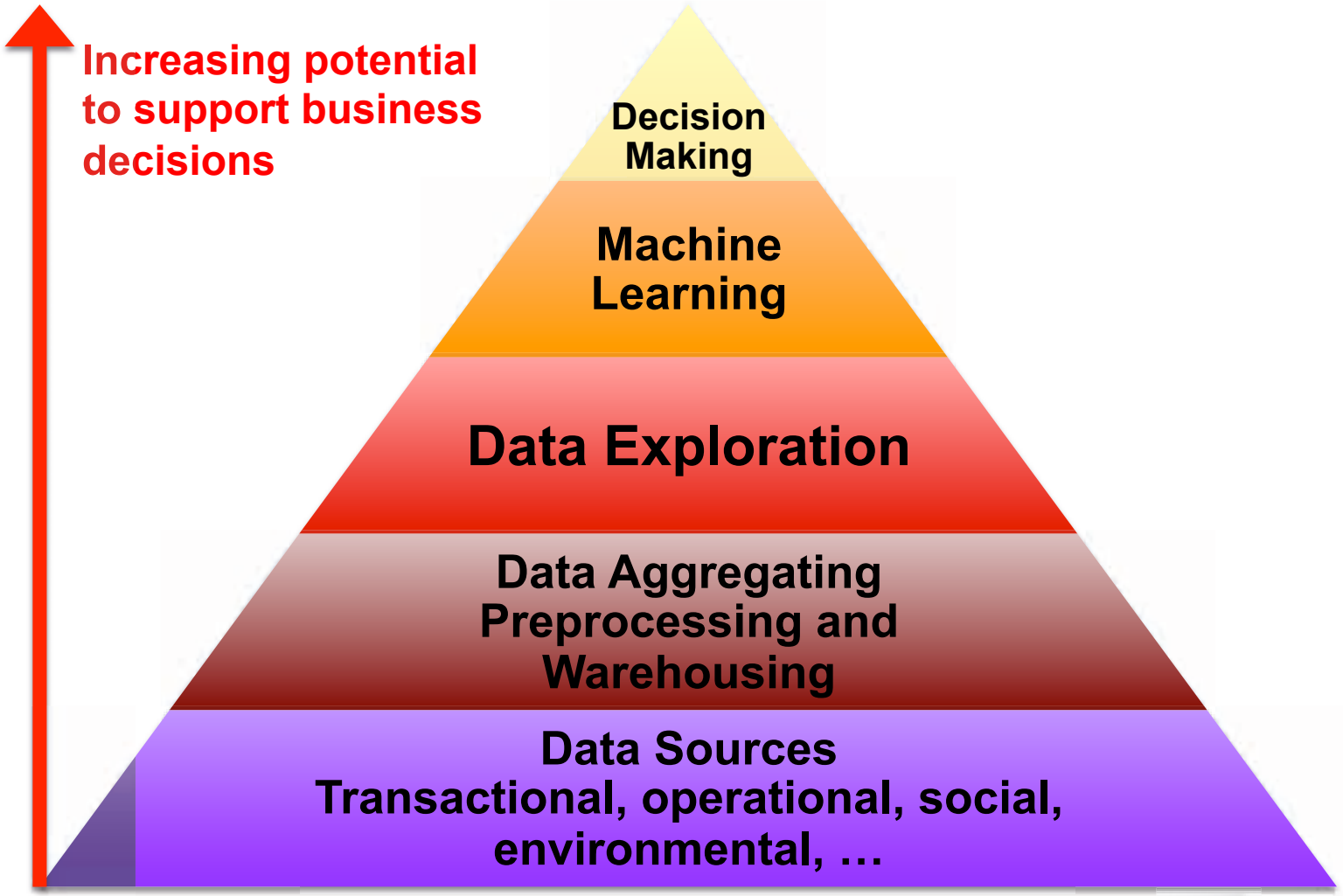
"Imperialism 1.0-3.0", Yuswohady, Koran Sindo, Minggu, 8 April 2018

TRANSLATING DATA INTO DECISIONS



Sumber: David A.J. Axson (2003), modified by Pasaribu, 2019

Data Science Pyramid



Adapted from Han, Kamber, and Pei 2011

«The real challenge in using Machine Learning (ML) is finding algorithms whose learning bias is the most suitable for a particular data set»

(Chris Lynch, 2015)

«Data types of an attribute (numeric, ordinal, nominal) affect the methods we can use to analyze and understand data»

Chris Lynch, 2015

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«The key to success is getting the right data and finding the best attributes»

(Chris Lynch, 2015)

"Big data adalah fondasi dari semua trend, pola (pattern), dan megatrends yang akan terjadi hari ini, besok, lusa, dan yang akan datang".

(Chris Lynch, 2015)

"Algoritma akan mengontrol setiap aspek kehidupan kita".

(Henrik von Scheel,
Advisory Board Member, Google)

Data, Information, and Knowledge

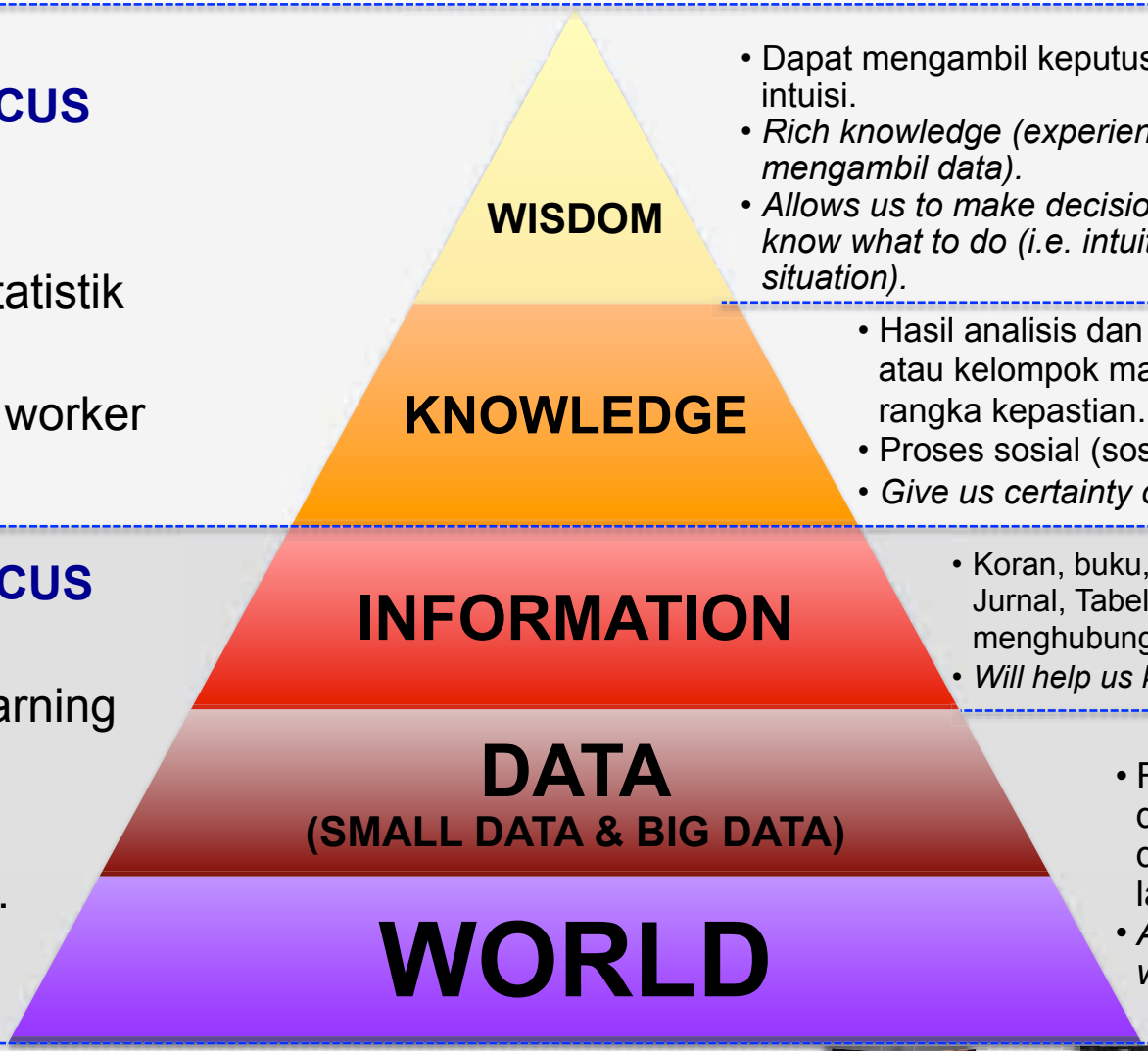
DATA	INFORMATION	KNOWLEDGE
465889727 Raw Symbols Meaning: ---------- ???	465-88-9727 Formatted Data Meaning: ---------- SSN (Social Security Number)	465-88-9727 → John Doe Data Relationships Meaning: ---------- ???

(Information Systems Today, Managing in the Digital World, 8TH, Global Edition, Pearson, 2018)

Dari Data Menjadi Informasi dan Knowledge

PEOPLE FOCUS
- Analitics
- Experts
- Para Ahli Statistik (Scientist)
- Knowledge worker

SYSTEM FOCUS
- Algorithm
- Machine learning
- Contoh: Facebook, Google, etc.



- Dapat mengambil keputusan hanya dengan intuisi.
- *Rich knowledge (experience, tanpa mengambil data).*
- *Allows us to make decision when we don't know what to do (i.e. intuition in uncertain situation).*

- Hasil analisis dan diagnosa manusia atau kelompok manusia dalam rangka kepastian.
- Proses sosial (sosialisasi).
- *Give us certainty on what to do.*

- Koran, buku, TV, Social Media, Jurnal, Tabel-tabel yang menghubungkan kejadian.
- *Will help us know what to do.*

- Fakta (tanpa dihubungkan dengan kejadian lain).
- *As it stands lone will not help us.*

(DIKW Framework, Ackaff, 1989; Sveiby.com, 2013)

Proses dari Data Menjadi Informasi dan Knowledge

WISDOM — Inovasi, kebijakan/ prinsip-prinsip.

- Dipahami
- Diterapkan

KNOWLEDGE — Informasi yang siap diaplikasikan dalam suatu konteks.

- Dibandingkan
- Dihubung-hubungkan
- Dikomunikasikan

INFORMATION — Data yang mengandung pesan.

- Divalidasi
- Dikelompokkan
- Diolah

DATA (SMALL DATA & BIG DATA) — Fakta mengenai kejadian.

Framework Integrating Big Data and Knowledge Management

SYSTEM FOCUS
- Algorithm
- Machine learning
- Contoh: Facebook, Google, etc.

Big Data
(Structured, Semistrutured, Unstructured)

Processing Data
(Analytics)

Knowledge Creation and Discovery through smart algorithms

Knowledge Creation and Leraning Transformation SECI Model

Improved Decision Making and Business Performance

1. Expert's insights (tacit knowledge)
2. Codifying new knowledge
3. Updating the existing knowledge bases or algorithms for future use

PEOPLE FOCUS
- Analitics
- Experts
- Para Ahli Statistik (Scientist)
- Knowledge worker

KNOWLEDGE FOCUS
- **KM System**

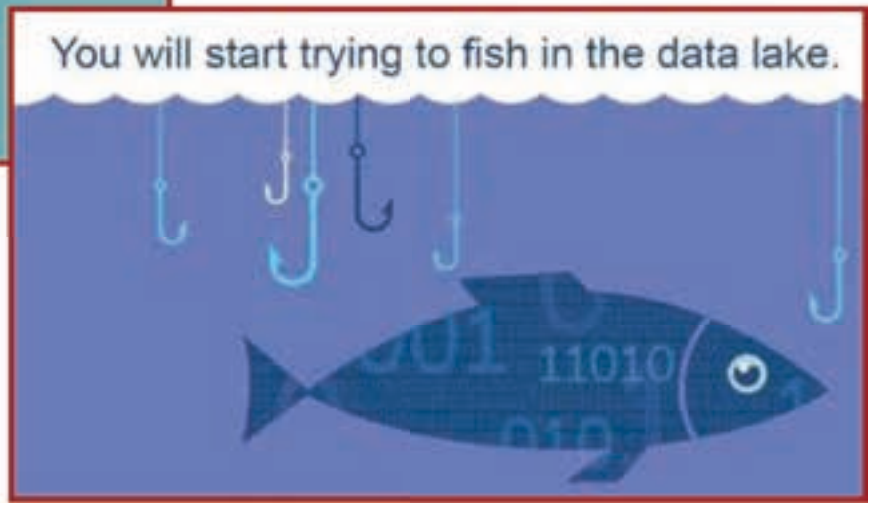
(Sumbal and See-to, 2017)

THE MAIN FACTORS AFFECTING BIG DATA QUALITY

- The quality of the algorithm used to process, and solve data (for example: Algorithmic Trading on Financial Trade).
- The level of talents that has been hired for data processing.
- Google's success is about "recipes", not "ingredients" (Google's success is about recipes, not ingredients).
- Halvarian, Google: "I continue to state that sexy (interesting) work in the next 10 years will be a field of statistics, and I'm not kidding"

2

Data As The New Oil

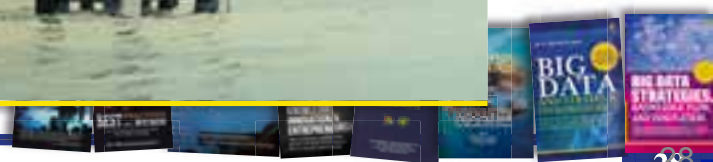


The Economist, May 2017

- **Big Data is The World's Most Valuable Resource** (The Economist, 2017)
- **Big Data is the Foundation of Trends and Megatrends** (Chris Lynch, 2015)
- **Data, Information, and Knowledge are the New Oil** (M. Adams & M. Oleksak, 2010)
- **The Algorithm will Control Every Aspect of Our Lives** (Henrik von Scheel)
- **New Technology + Old Mindset = Fail** (Peter Drucker, 1995)

Data...
Small Data → Big Data....
Data Menjadi Komoditi

- **Dulu rempah-rempah menjadi komoditi utama.**
- **Kemudian hasil tambang seperti emas dan perak.**
- **Kemudian menyusul minyak/oil sebagai komoditi utama.**
- **Sekarang data menjadi komoditi utama yang diperebutkan, khususnya Big Data.**




The Economist
The world's most valuable resource
Data and the new rules of competition
The Economist
The battle for digital supremacy
strategy+business
Riding the Wave of Digital Disruption
The Economist
Epic ail
The Economist
AI-spy
Harvard Business Review
Surviving Disruption
Clayton Christensen and Maxwell Wessel
PAGE 56
Harvard Business Review
Social Media And the New Rules of Branding
SPOTLIGHT PAGE 61
The Economist
Modern love
Dating in the digital age
The Economist
Nowhere to hide
What machines can tell from your face

Nilai Valuasi 2016 (rupiah)

PRODUK (JASA) KONVENSIONAL

- **Blue Bird** → 9,8 triliun
- **Garuda Indonesia** → 12,3 triliun

PRODUK (JASA) DISRUPTIVE

- **Grab** → 20 triliun (USD 1.6 milliards)
- **GO-JEK** → 17 triliun (USD 1.3 milliards)

Tech Crunch, Juni 2016

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3

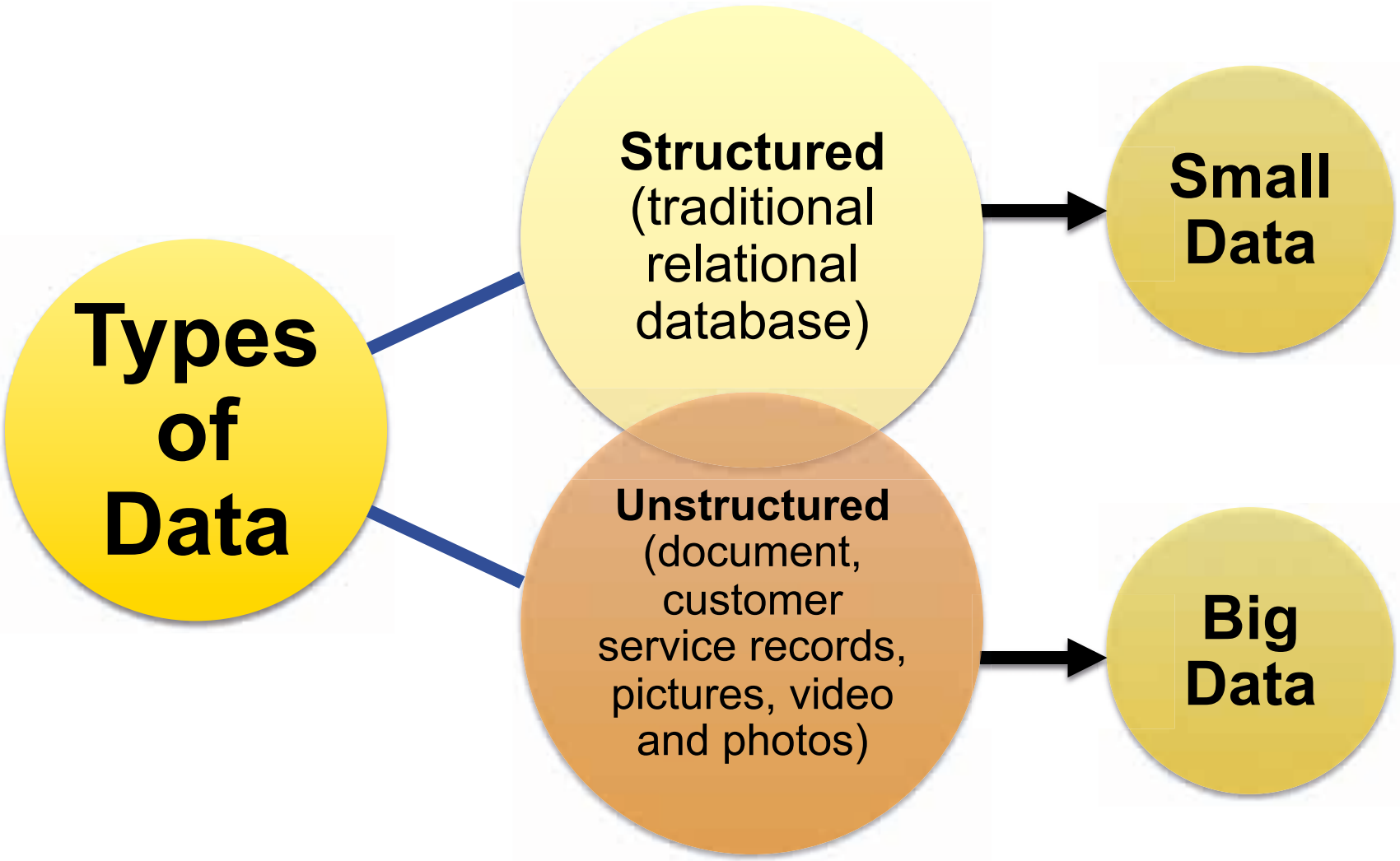
Data:

- Small Data
- Big Data

"I think you'll find that mine is bigger..."

What is Big data?

- **'Big Data' is** similar to 'small data', but bigger in size.
- **But having** data bigger it requires different approaches: Techniques, tools and architecture.
- **Big data is** a term for data sets that are so large or complex that traditional data processing applications are inadequate to deal with them.


Types of Data
Structured (traditional relational database)
Unstructured (document, customer service records, pictures, video and photos)
Small Data
Big Data

Sources of Big Data

- Social Media Data
- Black Box Data
- Stock Exchange Data
- Transport Data
- Power Grid Data
- Search Engine Data

Contoh:

Social Media Data:

- Social media such as Facebook and Twitter hold information and views posted by millions of people across the globe.

Black Box Data:

- It is a component of helicopter, airplanes, and jets, etc. It captures voices of the flight crew, recordings of microphones and earphones, and the performance information of the aircraft.

Stock Exchange Data:

- The stock exchange data holds information about the 'buy' and 'sell' decisions made on a share of different companies made by the customers.

Transport Data:

- Transport data includes model, capacity, distance and availability of a vehicle.

Search Engine Data:

- Search engines retrieve lots of data from different databases.

Power Grid Data:

- The power grid data holds information consumed by a particular node with respect to a base station.

Apa itu Big Data?

Big Data adalah fondasi dari semua "megatrends" yang akan terjadi hari ini, besok, lusa, dan yang akan datang.

Dari sosial media ke telepon genggam (*smartphone*), cloud, sampai pada permainan (*game*).

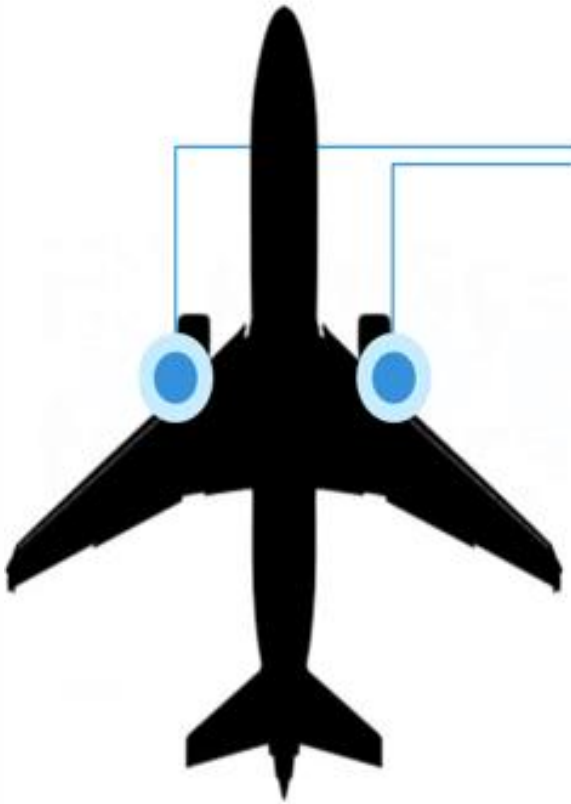
Kini, dasar semua keputusan, baik bisnis maupun politik, makin akurat karena ada data yang tersedia.

Data bisa dibeli ataupun dikumpulkan sendiri. Pengumpulan data makin mudah karena perkembangan industri digital.

Berbagai sensor/gawai makin dekat dengan kehidupan manusia yang memberikan data mulai dari lokasi, percakapan, teks, foto, video yang jumlahnya sangat besar dan melimpah hingga disebut data raksasa atau Big Data.

Un-structured Data is Exploding (example)

Sensor data from a cross-country flight (IoT application)



20 TB ✖ 2 ✖ 6 ✖ 28,537 ✖ 365

20 terabytes of information per engine every hour	twin-engine Boeing 737	six-hour, cross-country flight from New York to Los Angeles	# of commercial flights in the sky in the United States on any given day.	days in a year

= 2,499,841,200 TB

Source: Twitter/www.edureka.co/big-data-and-hadoop

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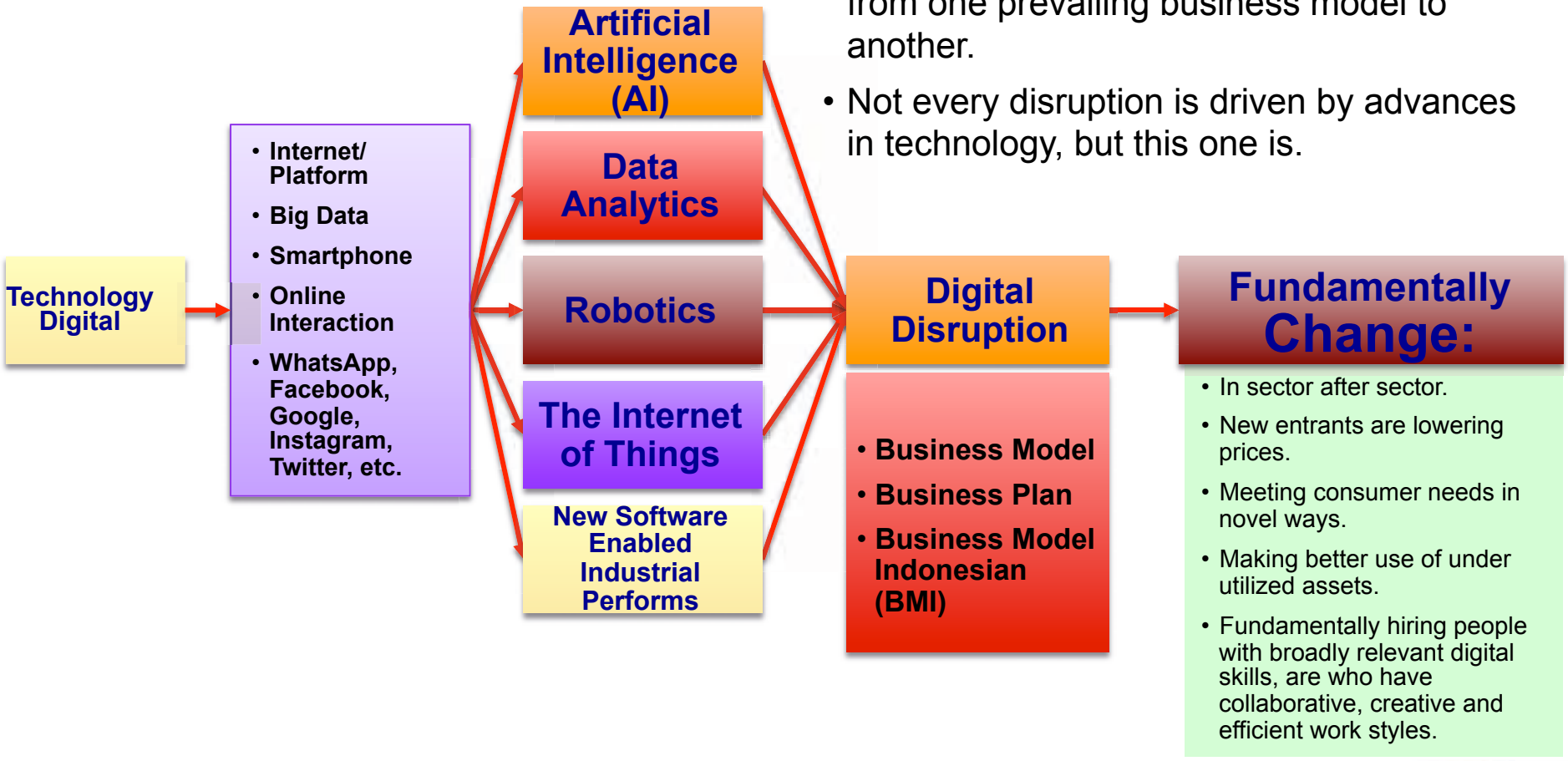
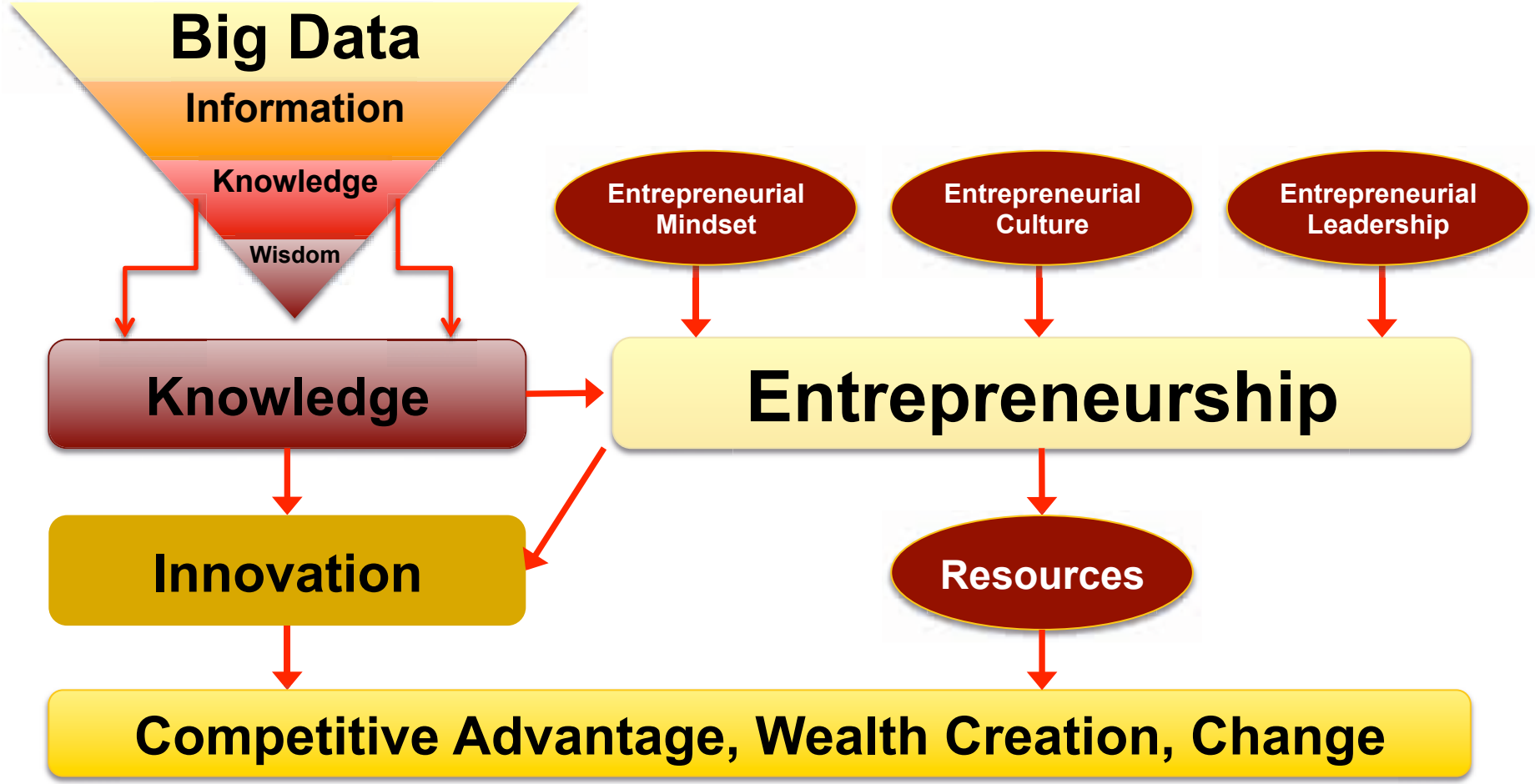
Winning the Game of Digital Disruption

- **Disruption** → a shift in relative profitability from one prevailing business model to another.
- Not every disruption is driven by advances in technology, but this one is.



Source: strategy+business – US (Spring 2018), publish by PWC.

BIG DATA & ENTREPRENEURSHIP



Sumber: The Knowledge-Creating Company (Nonaka & Takeuchi, 1995), dimodifikasi Manerep Pasaribu

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TRENDS OF THE NEXT DECADE

Trends of The Next Decade

- Green
- Clean Energy
- Organic Orientation
- Economic
- Social
- Health
- Web

THE FUTURE:

The Perfect for Innovative Product

- Robot and Automation
- Voice/Face Recognition System
- Environmental Production
- Healthcare
- Hydrology
- Nanotechnology

The Noble Quest: "Energy for All"

- Water
- Wind
- Sun-shine

Four Vs of Big Data :

Volume

- Data quantity

Velocity

- Data speed

Variety

- Data types

Veracity

- Data uncertainty

A typical PC might have had 10 gigabytes of storage in 2000.

The smart phones, the data they create and consume; sensors embedded into everyday objects will soon result in billions of new, constantly-updated data feeds containing environmental, location, and other information, including video.

Volume

(Jumlah yang besar)

Today, Facebook ingests 600 terabytes of new data every day.

high-frequency stock trading algorithms reflect market changes within microseconds.

on-line gaming systems support millions of concurrent users, each producing multiple inputs per second.

Velocity

(Kecepatan yang tinggi)

machine to machine processes exchange data between billions of devices.

Big Data isn't just numbers, dates, and strings. Big Data is also geospatial data, 3D data, audio and video, and unstructured text, including log files and social media.

Variety

(Bentuk yang bermacam)

Big Data analysis includes different types of data.

Traditional database systems were designed to address smaller volumes of structured data, fewer updates or a predictable, consistent data structure.

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Veracity

(Kebenaran yang tidak terjamin)

Managing the reliability and predictability of inherently imprecise data types

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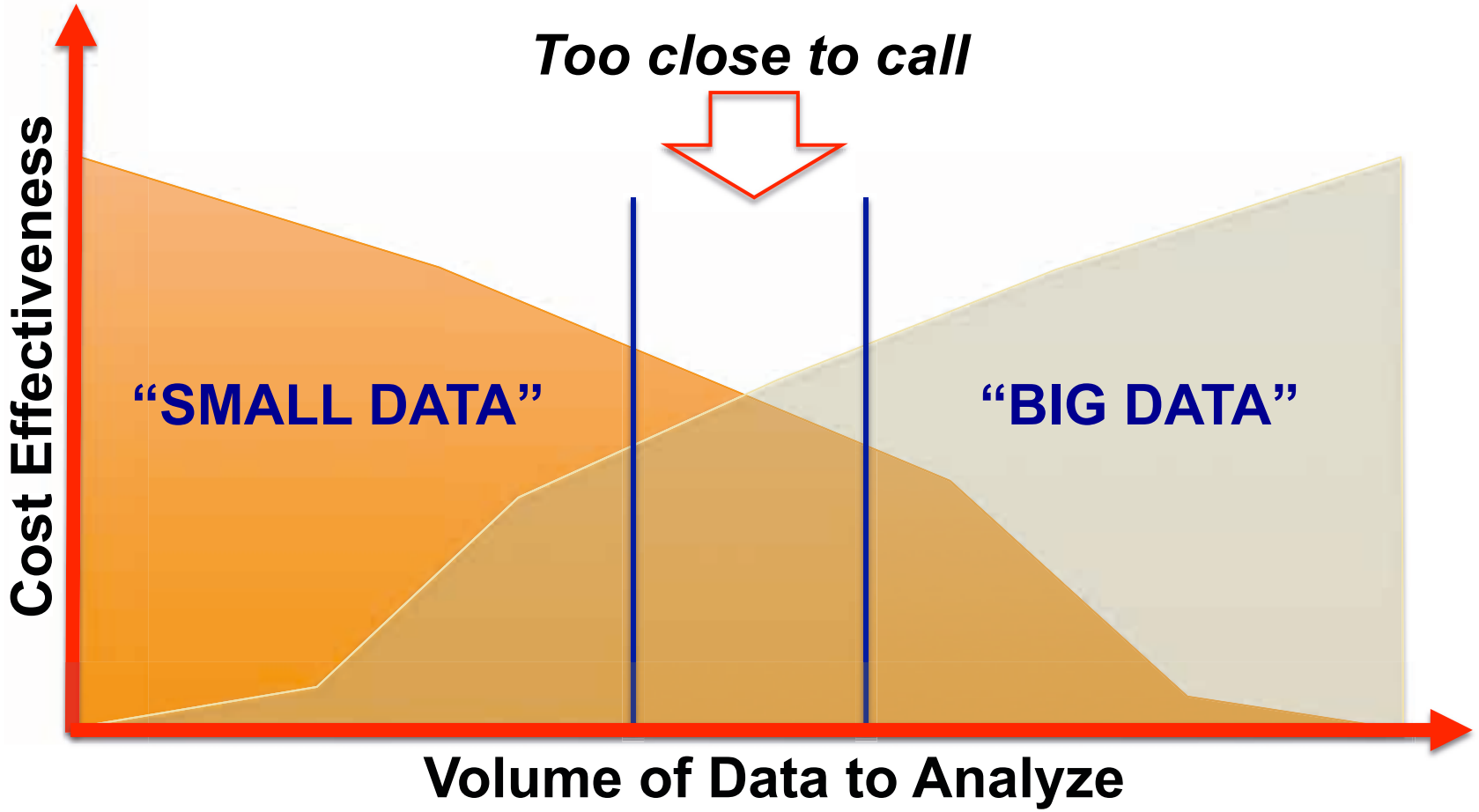
Challenges of Big Data

- Storage
- Searching
- Sharing
- Transfer
- Analysis

(Marr, 2015)

GRAFIK SMALL DATA DAN BIG DATA TENTANG COST EFFECTIVENESS DAN VOLUME OF DATA TO ANALYZE



dataflog.com, Martin Lindstrom dalam Small Data, 2017

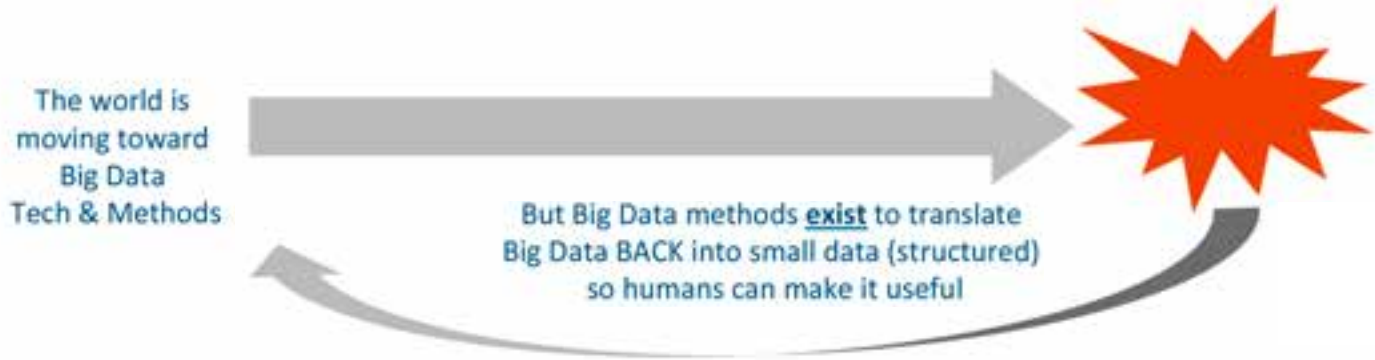
PERBEDAAN SMALL DATA DAN BIG DATA

Category	Small Data	Big Data
Data Source	Traditional enterprise data. Includes: • Enterprise resource planning transactional data • Customer Relationship Management (CRM) system • Web transactins • Financial data e.g. general ledger data	Data generated outside the enterprise from nontraditional data sources. Include: • Social media • Sensor data • Log data • Device data • Video, images, etc.
Volume	• Gigabytes (10^9) • Terabytes (10^{12})	• Terabytes (10^{12}) • Petabytes (10^{15}) • Exabytes (10^{18}) • Zettabytes (10^{21})
Velocity	• Batch or near real-time • Does not always require immediate response	• Often real-time • Requires immediate
Variety	• Structured • Unstructured	• Structured • Unstructured • Multi-structured
Value	• Business inteligence, analysis and reporting	• Complex, advanced, predictive busness analysis and insights

dataflog.com, Martin Lindstrom dalam Small Data, 2017

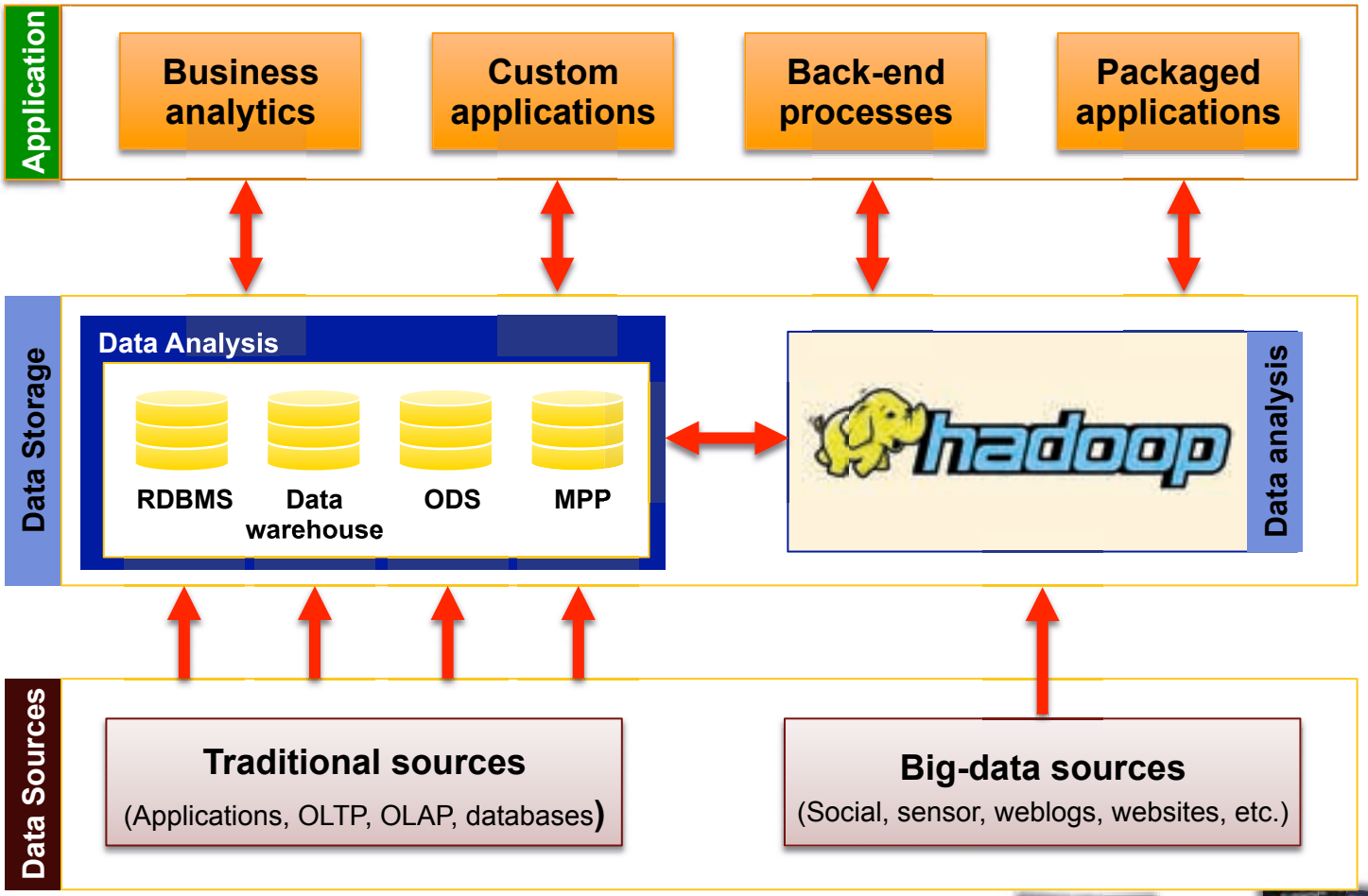
INFRASTRUKTUR
SMALL DATA DAN BIG DATA (simple version)

	Small Data	Big Data
Overview	A steady stream of lots of relatively consistent data that the human brain can handle and work with	Gigantic waves of erratic data every millisecond that humans can't comprehend, let alone try to work with manually
Nomenclature	• Traditional • Relational • SQL • Flat • Structured • Small	• [New-ish, Contemporary] • Non-Relational • NoSQL • [Not Flat: Erratic] • Unstructured • Big
Technology	30 year-old, standardized tech	<5 year old tech, with more layers, but often actually less expensive
People	Data Engineers/ DBAs Analysts	More Data Engineers/ DBAs Data Scientists Analysts



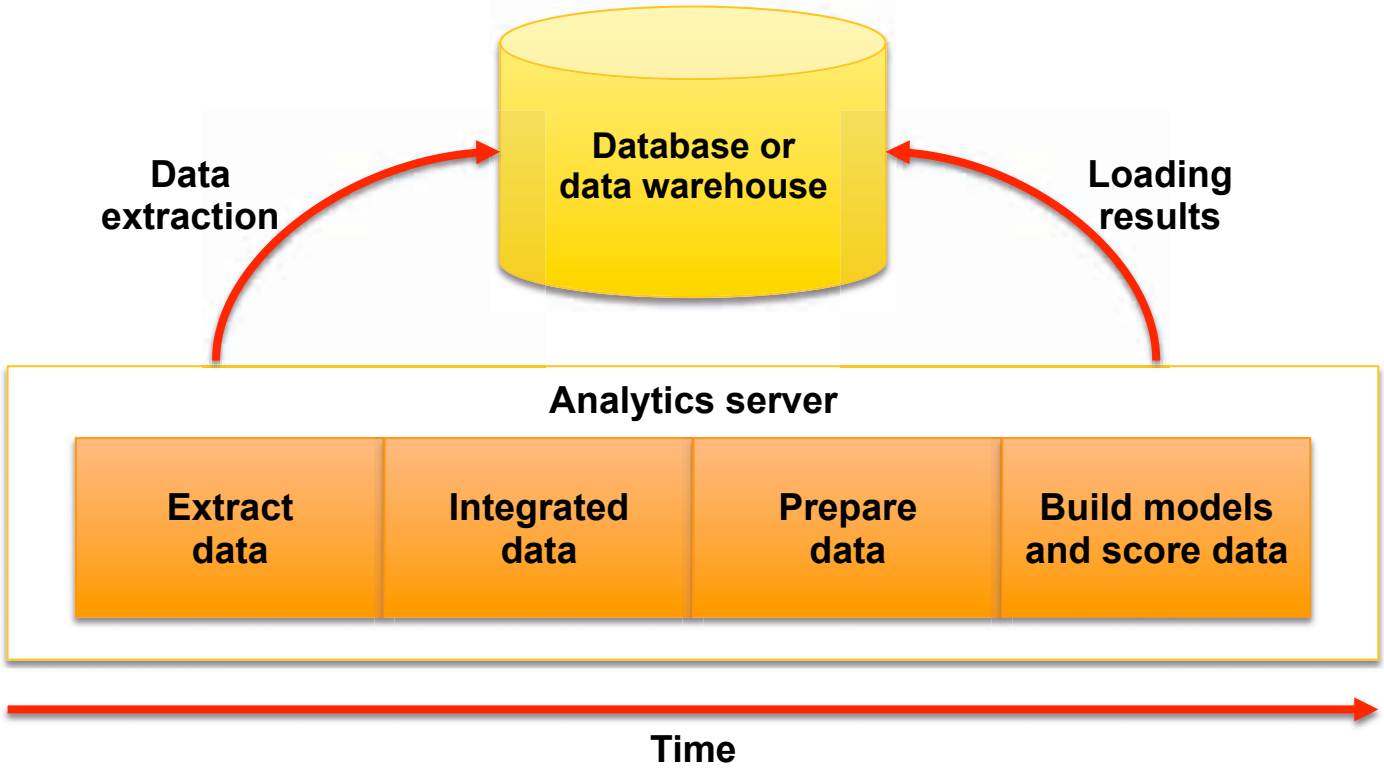
(Anna Kuhn, Global Data Lead at Google)

A typical small-data and big-data architecture for data science



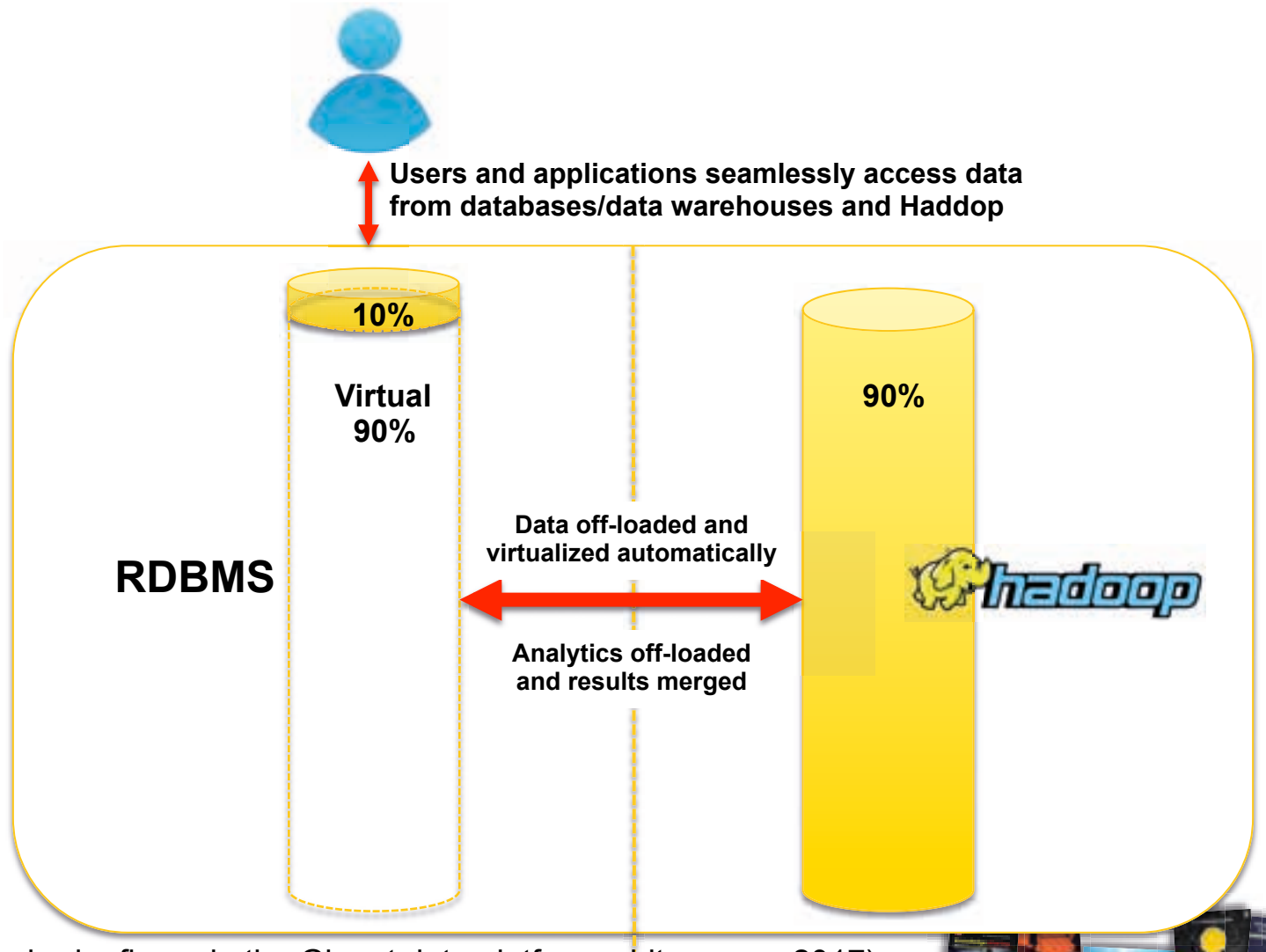
(inspired by a figure from the Hortonworks newsletter, April 23, 2013)

The traditional process for building predictive models and scoring data



(Inspired a figure in the Gluent data platform white paper, 2017)

Databases, data warehousing, and Hadoop working together



(Inspired a figure in the Gluent data platform white paper, 2017)

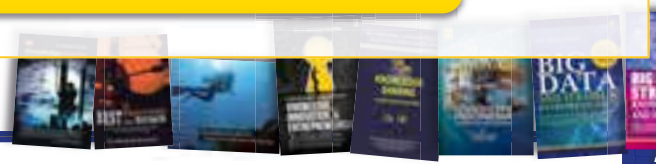
Small Data & Big Data. Apa perbedaannya?

Small Data adalah data dalam volume dan format yang membuatnya mudah diakses, informative, dan dapat ditindak lanjuti.

Small Data menghubungkan orang dengan wawasan yang tepat waktu dan bermakna/ bernilai, mudah diakses, mudah dimengerti, dan dapat ditindaklanjuti untuk tugas sehari-hari.

Istilah Small Data kontras dengan Big Data, yang biasanya mengacu pada kombinasi data terstruktur dan tidak terstruktur yang dapat diukur dalam petabyte atau exabyte.

Big Data sering dicirikan dengan 4V (Volume, Variasi, Velocity, dan Veracity/ kebenaran data) yang semuanya digabungkan untuk membuat Big Data yg sulit dikelola.



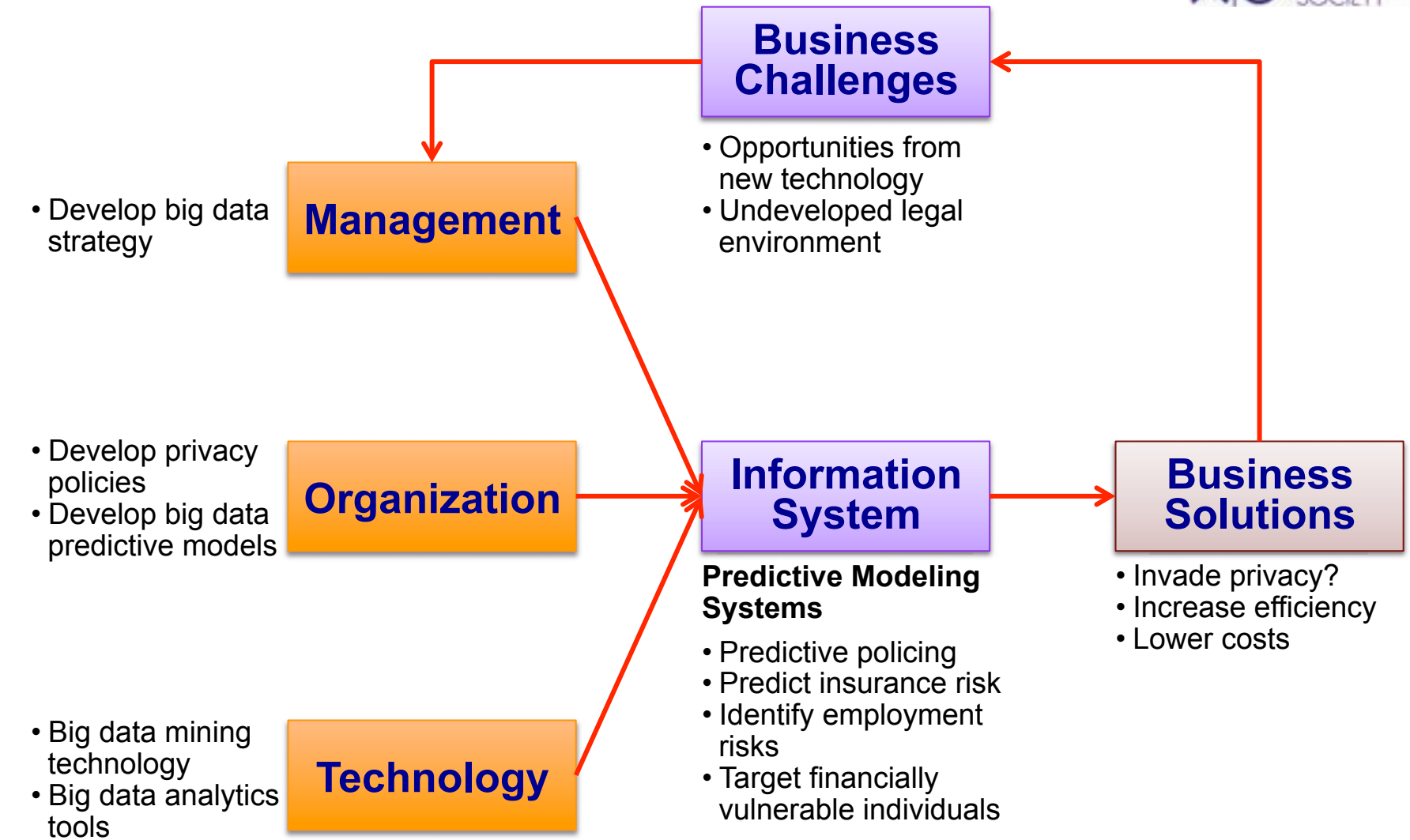
INDONESIA STRATEGIC MANAGEMENT SOCIETY

Data Strategy

4

Information System Are More Than Computers

Information Systems Today, Managing in the Digital World, 8TH, Global Edition, Pearson, 2018



Information Systems Today, Managing in the Digital World, 8TH, Global Edition, Pearson, 2018

STRATEGIC BIG DATA

SMART Customer Questions:
- Which customers are most likely to churn, and when?
- How do we best identify target customers?
- What factors drive customer loyalty?
- What perceptions do customer have of our products, services, brands?
- What is the predicted customer lifetime value for each of our customers?
- What service elements do customers value the most?
- Etc.

Purpose Panel

Purpose: What is our purpose? (Mission Statement)

Ambition: What is our ambition? (Vision Statement)

Customer Panel

Target Market: What customer do we target? (Segment, Market Region, Niche, Channels, etc.)

Value Proposition: What do we offer our customers? (Quality, Price, Innovation, Relationship, Service, etc.)

Operations Panel

Partners: Who are our key partners we need to maintain a relationship with? (Suppliers, Distributors, Communities, etc.)

Core Competencies: What internal processes to we have to excel at? (Develop Products & Services, Generate Demand, Fulfil Demand, Regulatory & Social, etc.)

Finance Panel

Finance Objectives: How will we deliver financial results?

(Revenue, Profit and Cash Generation, Shareholder Value)

(Cost, Productivity, Efficiency)

Competition and Risk Panel

Competition factors and Risks: What is threatening our success?

(Market, competition and customer risks)

(Operations risks)

(Financial Risks)

(IT Risks)

(People Risks)

Resource Panel

IT Systems and Data: What are the key IT systems and data deliverables? (Systems, Networks, Data Sources, etc.)

Infrastructure: What are the key infrastructure deliverables? (Property, Machinery, Land, etc.)

People & Talent: What are they key people and talent deliverables? (Recruit, Develop, Retain, Engage, etc.)

Culture, Values, Leadership: What are the key culture and leadership deliverables? (Values, Behaviours, etc.)

(Sumber: Big Data: Using SMART Big Data, Analytics and Metrics To Make Better Decisions and Improve Performance, Bernard Marr (2015))

Strategic Big Data Menjadi Nilai (Value)

The 'Datafication' of our world:

- Activities
- Conservation
- Words
- Voice
- Social Media
- Browser Logs
- Photos
- Videos
- Sensors
- Etc.

Volume

Velocity

Variety

Veracity

Analysing Big Data:

- Text Analytics
- Sentiment Analysis
- Face Recognition
- Voice Analytics
- Movement Analytics
- Etc.

VALUE

Sumber: Big Data: Using SMART Big Data, Analytics and Metrics To Make Better Decisions and Improve Performance, Bernard Marr (2015)

INDONESIA STRATEGIC MANAGEMENT SOCIETY

5 Big Data dan Praktik-Praktik di Perusahaan

"I can prove it or disprove it! What do you want me to do?"

INDONESIA STRATEGIC MANAGEMENT SOCIETY

STRATEGY BIG DATA

1. Google

Data Strategy:

How Big Data Is At The Heart Of Google's Business Model?

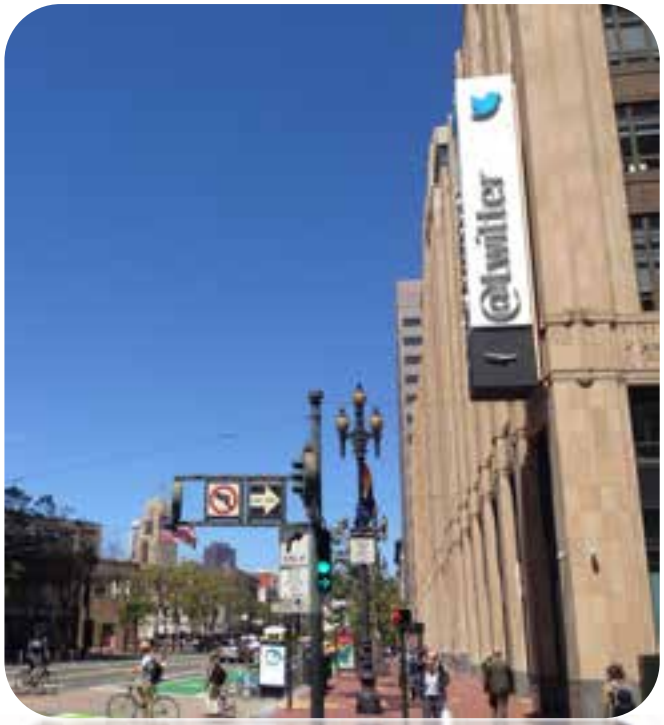
- Membantu memecahkan masalah business.
- Big Data digunakan dalam Praktek Business (dari household name) di setiap penjuru dunia sampai dengan knowledge graph.
- 89% menyumbang pengguna pencarian internet (11%: yahoo, Bing, Baidu)

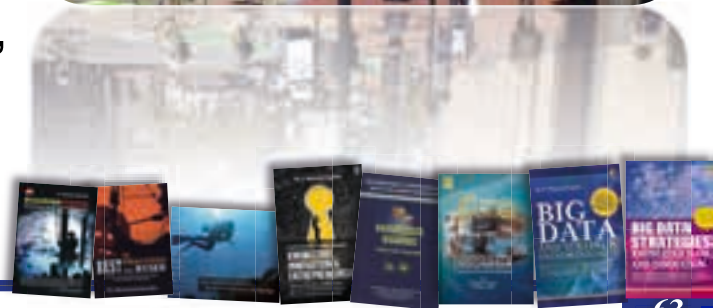
STRATEGY BIG DATA

2. twitter

Data Strategy:
How Twitter and IBM Deliver Customer Insight from Big Data?

- Sumber wawasan yang kaya akan sentimen dan perilaku konsumen.
- Hampir 310 juta pengguna aktif bulanan, mereka mem-*posting* 500 juta pesan tiap hari.





STRATEGY BIG DATA

3. BANK INDONESIA
BANK SENTRAL REPUBLIK INDONESIA

Data Strategy:
Memanfaatkan Big Data & Transformasi Kebijakan Moneter BI.

- Tantangan pada era Big Data ini meliputi pemerolehan, kurasi, penyimpanan, penelusuran (search), pembagian, pemindahan, analisis, dan visualisasi data.
- Tren kian membesarnya himpunan data terjadi akibat bertambahnya informasi dari himpunan-himpunan besar yang saling terkait, dibandingkan dengan himpunan-himpunan kecil lain dengan jumlah total data yang sama.

STRATEGY BIG DATA

4. Bombay Stock Exchange (India)

Data Strategy:

Analysis of Stock Marke by using data analytic technology.

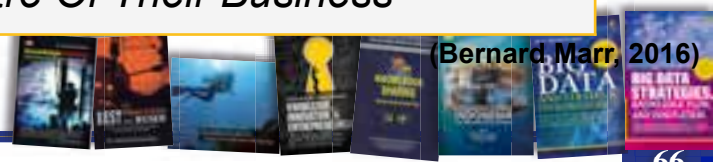
- How to anticipate the response of stock value pattern utilising literary monetary news?
- How information and content meaning strategies produce this prescient model?

INDONESIA STRATEGIC MANAGEMENT SOCIETY

5. Contoh Lainnya:

NO.	COMPANY NAME	BIG DATA IN PRACTICE (*How Companies Used Big Data Analytics to Deliver Extraordinary Results*)
1.	**Facebook**	*How Facebook Use Big Data To Understand Customers*
2.	**Royal Bank of Scotland**	*Using Big Data To Make Customer Service More Personal*
3.	**GE (General Electric)**	*How Big Data Is Fuelling The Industrial Internet*
4.	**Shell**	*How Big Oil Uses Big Data*
5.	**Rolls-Royce**	*How Big Data Is Used To Drive Success In Manufacturing*
6.	**Uber**	*How Big Data Is At The Centre Of Uber's Transportation Business*
7.	**Amazon**	*How Predictive Analytics Are Used To Get A 360-Degree View Of Consumers*
8.	**Apple**	*How Big Data Is At The Centre Of Their Business*

(Bernard Marr, 2016)



(Bernard Marr, 2016)

INDONESIA STRATEGIC MANAGEMENT SOCIETY

BIG DATA IN PRACTICE #1

NO.	COMPANY NAME	BIG DATA IN PRACTICE (*How 45 Companies Used Big Data Analytics to Deliver Extraordinary Results*) → Data Strategy
1.	**Google**	*How Big Data Is At The Heart Of Google's Business Model*
2.	**Electronic Arts**	*Big Data In Video Gaming*
3.	**Milton Keynes**	*How Big Data Is Used To Create Smarter Cities*
4.	**Palantir**	*How Big Data Is Used To Help The CIA And To Detect Bombs In Afghanistan*
5.	**Airbnb**	*How Big Data Is Used To Disrupt The Hospitality Industry*
6.	**Sprint**	*Profiling Audiences Using Mobile Network Data*
7.	**Dickey's Barbecue Pit**	*How Big Data Is Used To Gain Performance Insights Into One Of America's Most Successful Restaurant Chains*
8.	**Caesars**	*Big Data At The Casino*
9.	**Fitbit**	*Big Data In The Personal Fitness Arena*
10.	**Facebook**	*How Facebook Use Big Data To Understand Customers*
11.	**John Deere**	*How Big Data Can Be Applied On Farms*
12.	**Royal Bank of Scotland**	*Using Big Data To Make Customer Service More Personal*
13.	**LinkedIn**	*How Big Data Is Used To Fuel Social Media Success*
14.	**Microsoft**	*Bringing Big Data To The Masses*
15.	**Acxiom**	*Fuelling Marketing With Big Data*
16.	**US Immigration And Customs**	*How Big Data Is Used To Keep Passengers Safe And Prevent Terrorism*
17.	**Nest**	*Bringing The Internet of Things Into The Home*
18.	**Autodesk**	*How Big Data Is Transforming The Software Industry*
19.	**GE**	*How Big Data Is Fuelling The Industrial Internet*
20.	**Etsy**	*How Big Data Is Used In A Crafty Way*
21.	**Narrative Science**	*How Big Data Is Used To Tell Stories*
22.	**BBC**	*How Big Data Is Used In The Media*

(Bernard Marr, 2016)

INDONESIA STRATEGIC MANAGEMENT SOCIETY

BIG DATA IN PRACTICE #2

NO.	COMPANY NAME	BIG DATA IN PRACTICE (*How 45 Companies Used Big Data Analytics to Deliver Extraordinary Results*) → Data Strategy
23.	**Walmart**	*How Big Data Is Used To Drive Supermarket Performance*
24.	**CERN**	*Unravelling The Secrets Of The Universe With Big Data*
25.	**Netflix**	*How Netflix Used Big Data To Give Us The Programmes We Want*
26.	**Ralph Lauren**	*Big Data In The Fashion Industry*
27.	**Zynga**	*Big Data In The Gaming Industry*
28.	**Shell**	*How Big Oil Uses Big Data*
29.	**Apixio**	*How Big Data Is Transforming Healthcare*
30.	**Lotus F1 Team**	*How Big Data Is Essential To The Success Of Motorsport Teams*
31.	**Pendleton & Son Butchers**	*Big Data For Small Business*
32.	**US Olympic Women's Cycling Team**	*How Big Data Analytics Is Used To Optimize Athletes' Performance*
33.	**ZSL**	*Big Data In The Zoo And To Protect Animals*
34.	**Rolls-Royce**	*How Big Data Is Used To Drive Success In Manufacturing*
35.	**Kaggle**	*Crowdsourcing Your Data Scientist*
36.	**Amazon**	*How Predictive Analytics Are Used To Get A 360-Degree View Of Consumers*
37.	**Uber**	*How Big Data Is At The Centre Of Uber's Transportation Business*
38.	**Walt Disney Parks and Resorts**	*How Big Data Is Transforming Our Family Holidays*
39.	**Experian**	*Using Big Data To Make Lending Decisions And To Crack Down On Identity Fraud*
40.	**Transport for London**	*How Big Data Is Used To Improve And Manage Public Transport In London*
41.	**The US Government**	*Using Big Data To Run A Country*
42.	**IBM Watson**	*Teaching Computers To Understand And Learn*
43.	**Terra Seismic**	*Using Big Data To Predict Earthquakes*
44.	**Apple**	*How Big Data Is At The Centre Of Their Business*
45.	**Twitter**	*How Twitter And IBM Deliver Customer Insights From Big Data*

(Bernard Marr, 2016)

INDONESIA STRATEGIC MANAGEMENT SOCIETY

8 CONCLUTION - QA

- *Big Data is the foundation of megatrend and knowledge, "Megatrends that will occur today, tomorrow, the day after, and the future". Big Data is the Foundation of Trends and Megatrends (Chris Lynch, 2015)*
- *Big Data is The World's Most Valuable Resource (The Economist, 2017). Data, Information, and Knowledge are the New Oil (M. Adams & M. Oleksak, 2010)*
- *The Algorithm will Control Every Aspect of Our Lives (Henrik von Scheel). New Technology + Old Mindset = Fail (Peter Drucker, 1995)*
- *4 V data (variation, volume, speed, truth) play a very important role in the capital market specifically for decision making.*
- *Machinery industry companies such as jet engines (airplanes), power plants that have been transformed based on Big Data in operational maintenance and others.*
- *Companies that are still thinking about investing in Big Data technology must get ready before it's too late to stay competitive.*

TERIMA KASIH