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Teknologi Big Data
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Characteristics of Big Data



How the Cloud Is Big Data's Best Friend



Big Data on the Cloud In the Real World

But!!!! Bigger Data is Harder Data

3 alasan Big Data pada Cloud sistem :

1. Skills

- Apakah Anda benar-benar membutuhkan / menginginkan ini semua inhouse?

2. Huge amounts of external data

- Apakah masuk akal untuk memindahkan dan mengelola semua data ini di balik firewall Anda?

3. Focus on the value of your data

- Bukan kepada pengelolaan data yang besar.

Our Data-driven World

- **Science**
 - Data bases from astronomy, genomics, environmental data, transportation data, ...
- **Humanities and Social Sciences**
 - Scanned books, historical documents, social interactions data, ...
- **Business & Commerce**
 - Corporate sales, stock market transactions, census, airline traffic, ...
- **Entertainment**
 - Internet images, Hollywood movies, MP3 files, ...
- **Medicine**
 - MRI & CT scans, patient records, ...

Cloud Computing, Big Data

Software



Open MPI



Hardware

Big Data In The Cloud

2.7 ZB

Global Digital Data

0.5
Petabytes

Two years tweets

66%

Will or plan to use Big Data in the cloud

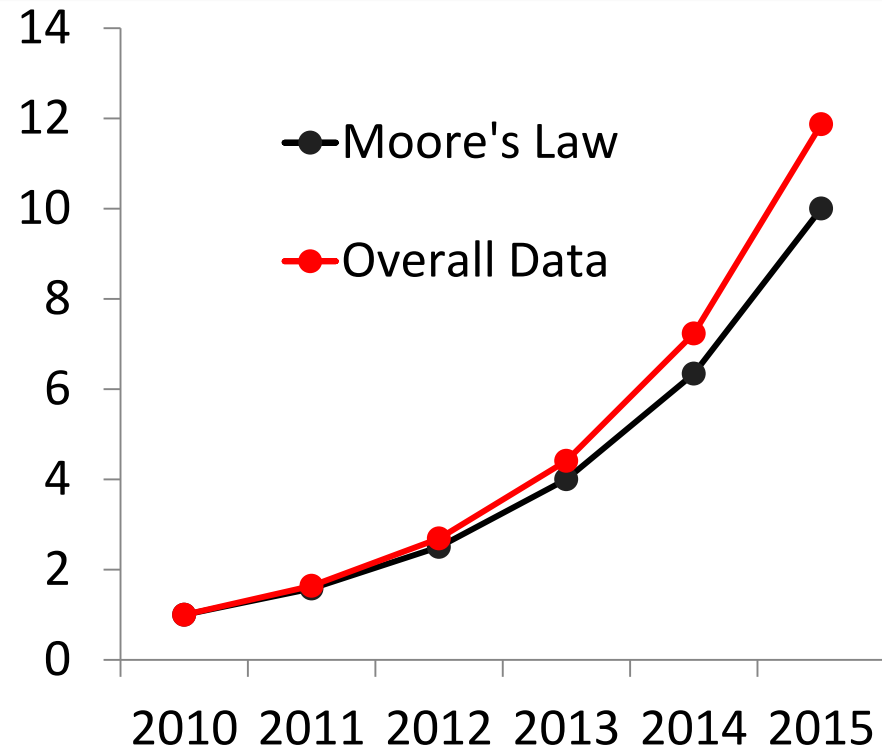
43% think that data analytics could be improved in their organization if data analytics was part of **cloud services**

Datacenter evolution

Facebook's daily logs: 60 TB

1000 genomes project: 200 TB

Google web index: 10+ PB



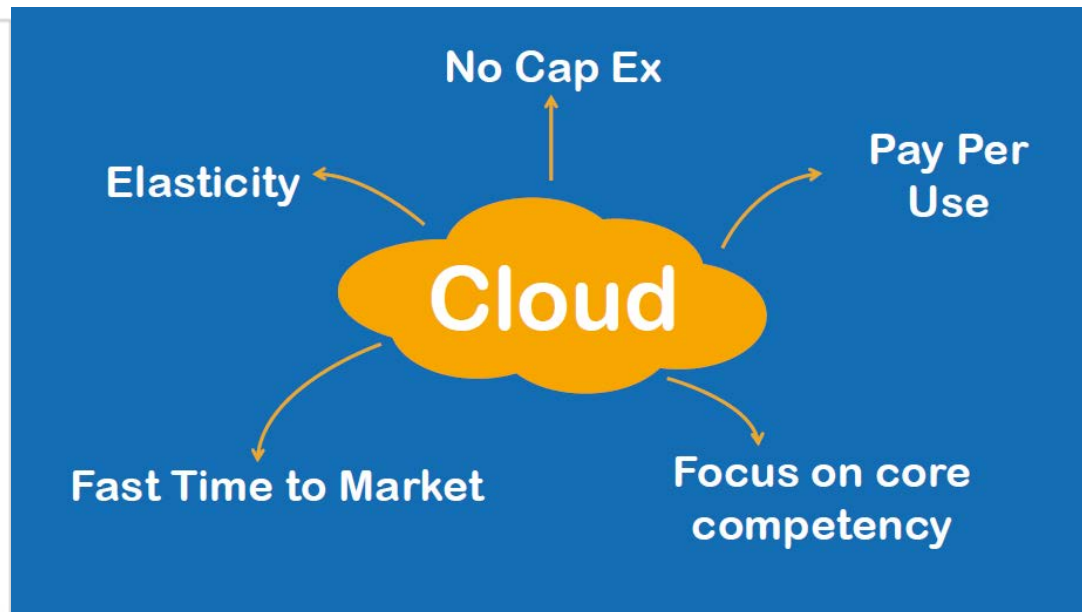
Slide from Ion Stoica

(IDC report*)

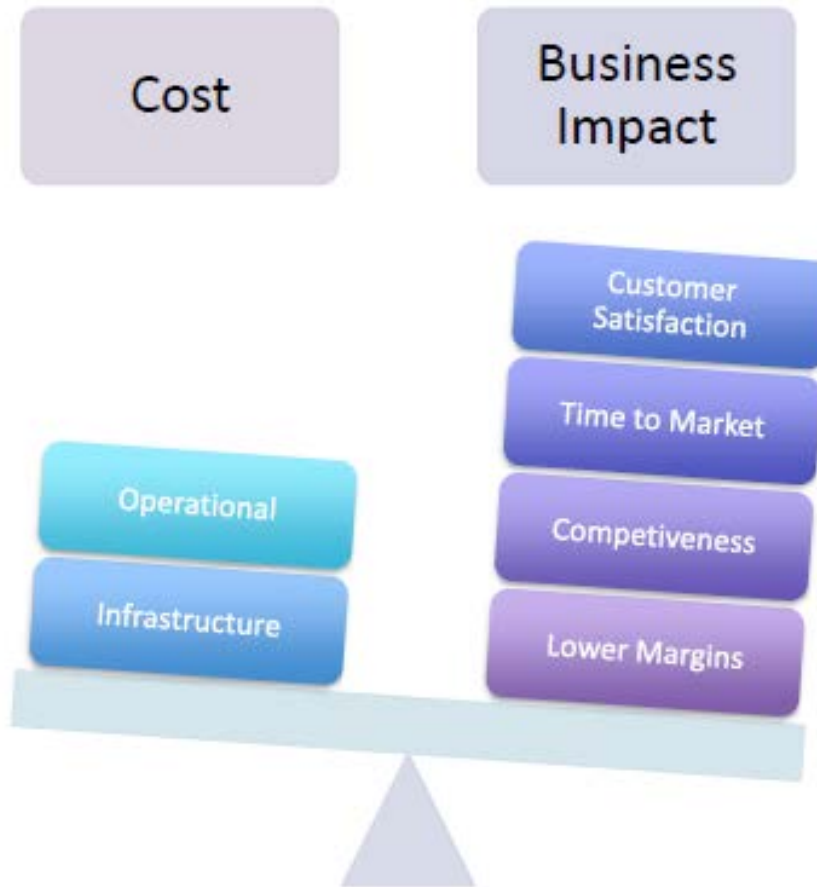
Mengapa Big Data Susah (dan Lebih Sulit)?

- Mengubah Data yang dibutuhkan
- Waktu respon lebih cepat dari data yang ada
- Sampling tidak cukup baik & sejarah itu penting
- Meningkatkan kompleksitas analisis data
- Pengguna membutuhkan eksperimen yang tidak murah

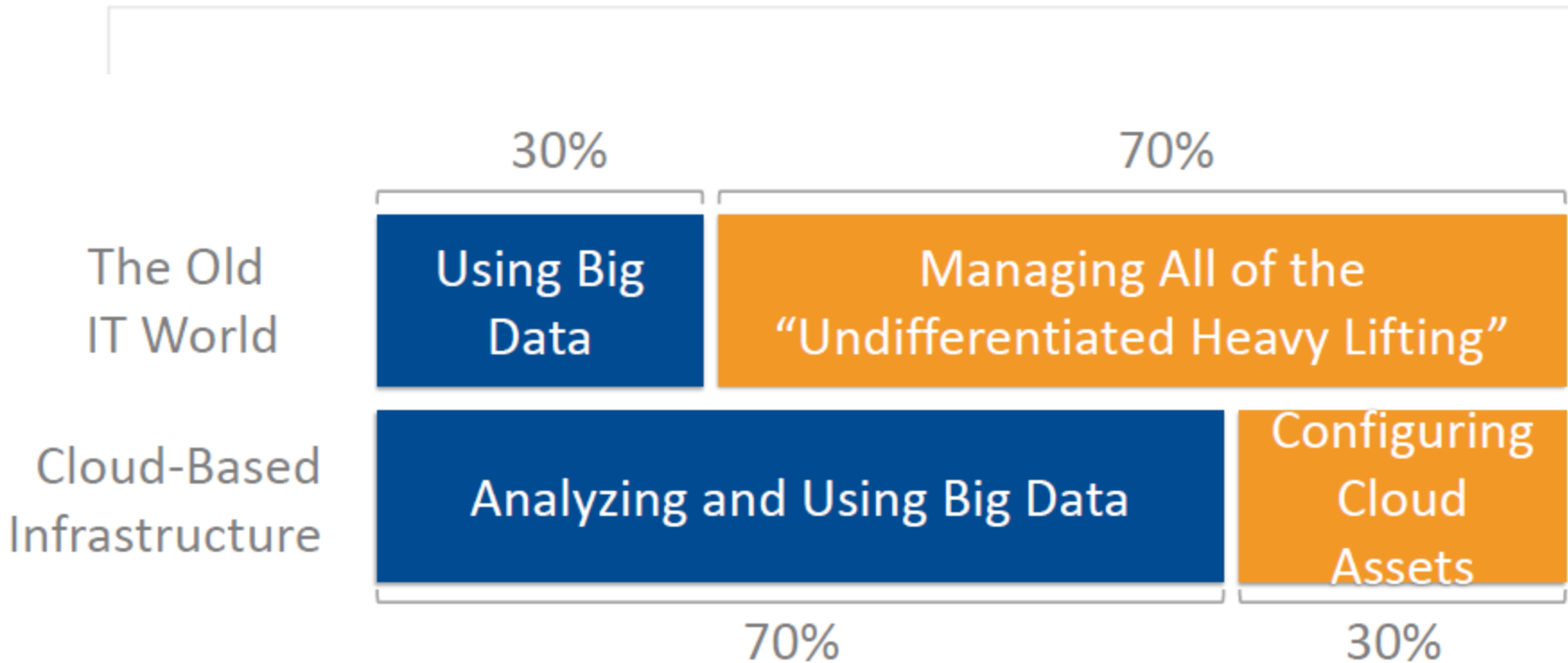
- Kita Perlu tools yang dibuat secara spesifik untuk data besar



The Challenge

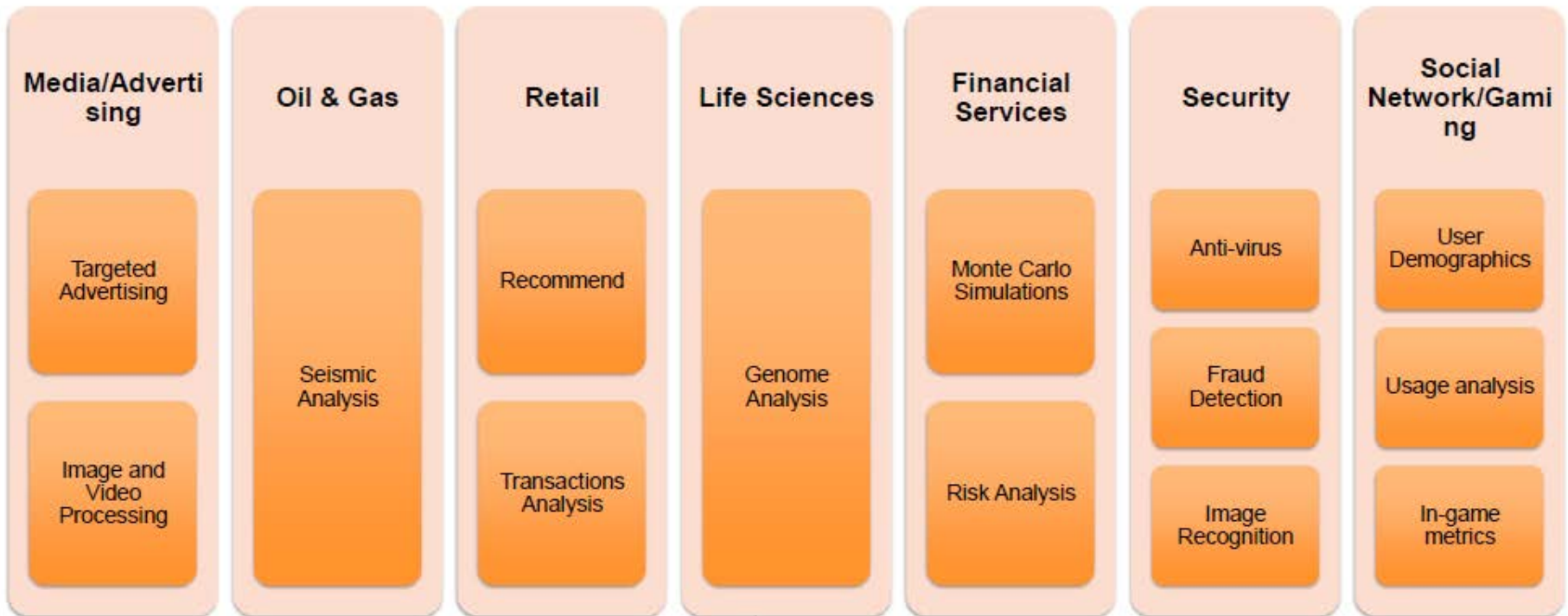


Cloud computing



Big Data on the Cloud In the Real World

Big Data Verticals



- **Big Data and Cloud Computing: Current State and Future Opportunities.** EDBT 2011 | www.cs.ucsb.edu
- Matei Zaharia. **Cloud Computing, Big Data** | <https://people.eecs.berkeley.edu>