



How Can Big Data Support Learning Process?

A Case Study in Organization Internal Healthcare Provider



Puspita Kencana Sari & Elvira Azis
Telkom Economics & Business School
Telkom University



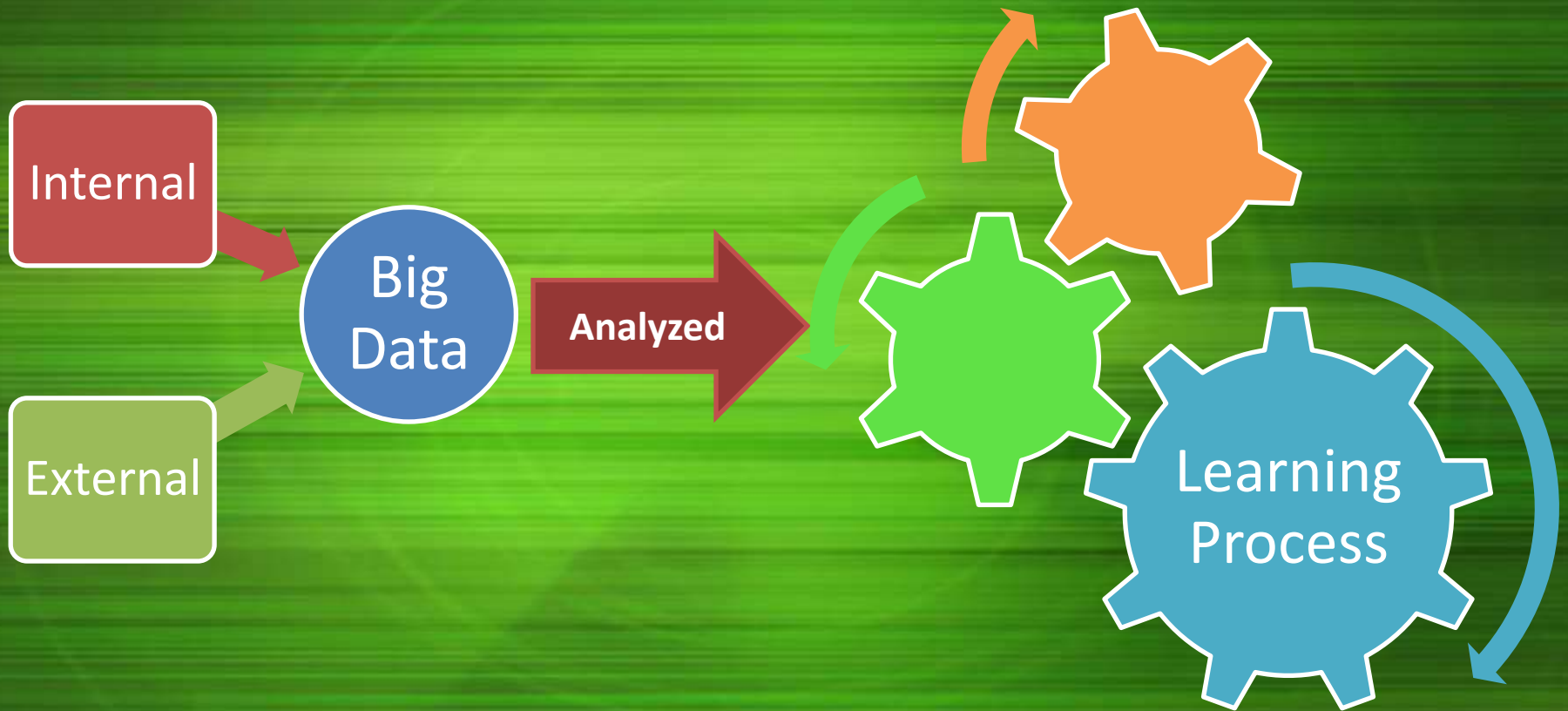
Background

“Companies that inject big data and analytics into their operation show productivity rates and profitability that are 5% to 6% higher than those of their peers”

(McAfee & Brynjolfsson, 2012)



Background





Learning Organization

- Peter Senge (1990),
 - Pedler, Burgoyne, and Boydell (1991) ,
 - Garvin (1993)
-
- In a learning organization, employees are encouraged and facilitated to upgrade their knowledges and skills by improve their learning capacity in order to meet organization strategic goals



Learning Organization

Learning process activities (Garvin, 1993):

- Systematic problem solving,
- Experimentation with new approaches,
- Learning from their own experience and past history,
- Learning from the experiences and best practices of others, and
- Transferring knowledge quickly and efficiently throughout the organization

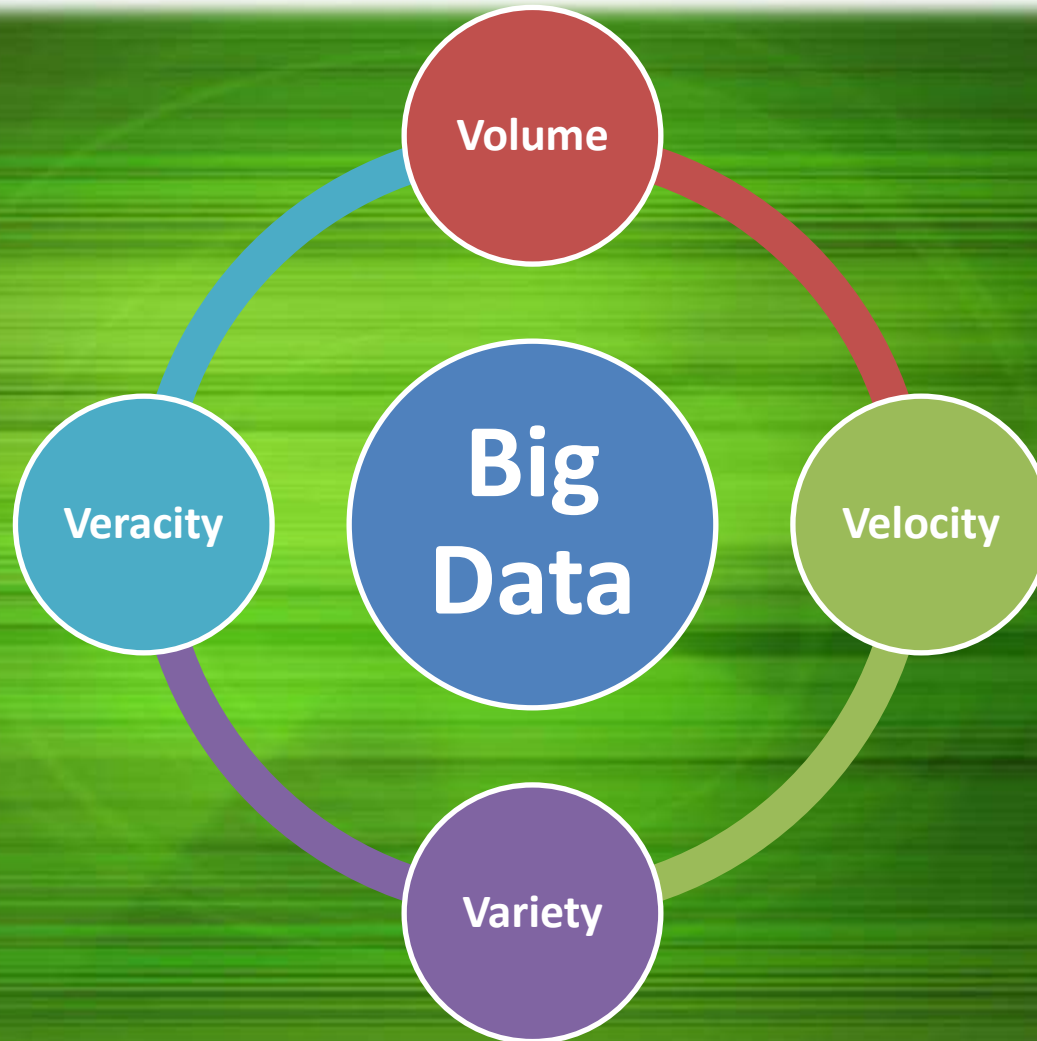


Big Data

“Big data” refers to datasets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyze
(McKinsey, 2011).



Four V's of Big Data





Big Data Analysis in Healthcare Industry

1. Comparative effectiveness research
2. Clinical decision support systems
3. Transparency about medical data
4. Remote patient monitoring
5. Advanced analytics applied to patient profiles
6. Automated payment systems
7. Health economics and outcomes research and performance-based pricing plans
8. Creating new business models: Online platforms and communities
9. Supporting public health program.



Methodology

- Qualitative method and exploratory approach
- Case study of organization's internal healthcare provider (Yakes Telkom Indonesia)
- Data:
 - Primary data : interview
 - Secondary data : internal documents & internet references



Yakes Telkom's Profile

- Since April 1st, 1998 Yayasan Kesehatan Pegawai Telkom (Yakes-Telkom) was founded as separated entity from Telkom
- Yakes-Telkom has mission to become the best healthcare service provider in Indonesia
- Yakes-Telkom has online medical record system that integrate all medical data of Yakes' members.



Yakes Telkom's Profile

- 403 employees
- 950 clinics operated in 7 regions in Indonesia.
- Healthcare services :
 - medical laboratorium, pharmacy, optic, general check-up, and some specialist.
- 6 internal laboratoriums
- 120.000 members (patients) from PT. Telkom + 30.000 members from Telkom subsidiaries.
- Online medical records system has 2560 transactions per day

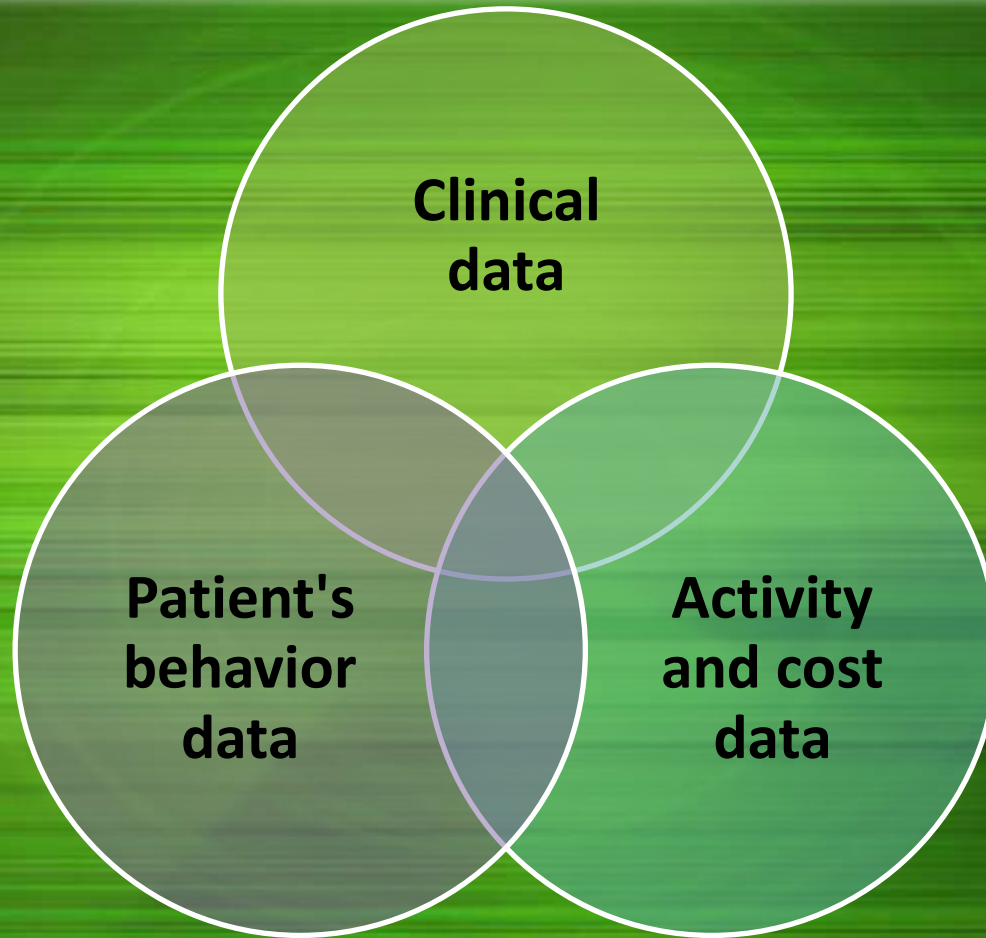


Discussion

- What are Yakes' Big Data Pools?
- What are Big Data Solutions for Learning Process?
- How does Big Data Solutions support Yakes' Programs to accomplished their mission?



Recomendation of Big Data Pools for Yakes Telkom





Mapping of Big Data Solution and Learning Process

No	Big Data Solution	Learning Process				
		Systematic problem solving	experimentation	learning from own experiences	learning from others	transferring knowledge efficiently
1	Comparative effectiveness research			V	V	V
2	Clinical decision support system	V	V			
3	Transparency about medical data			V	V	V
4	Remote patient monitoring		V			
5	Advanced analytics applied to patients profiles		V			
6	Automated pricing system	V				
7	Online platform and communities		V		V	



Mapping of Big Data Solution and Yakes' Programs

Yakes' Programs	Strategies		Big Data Solution(s)
	Increasing healthcare services	Controlling expenditures	
health club	V		4, 7
health family awards	V		4, 7
health-life paradigm	V		4, 7
annual medical check-up	V		1, 5
monthly monitoring	V		4, 5
curative treatment	V		1, 2, 3
drug lists (DOT)	V	V	1, 2, 6
medical treatment standardization	V	V	2, 3
reducing claim cost		V	6
reward and punishment	V	V	2
decreasing margin of pharmacy & hospital		V	6
drugs formulation standard		V	2, 6
regulation of healthcare facility		V	2



Conclusion and Recommendation

- To implement those solutions, Yakes should transfer the knowledge to all staffs, patients, and management
- To achieve service excellence, Yakes should improve their capacity in learning, technology, and service
- For further research, we recommend to do more discussions with stakeholders about big data solutions that could be implemented in organization.