



# E-health Cloud Deployment Model, A Recommendation for Indonesia

Sri Chusri Haryanti<sup>1</sup>, Angga Pradipta<sup>1</sup>, Sri Puji Utami Atmoko<sup>1</sup>,  
Umami Azizah Rachmawati<sup>1</sup>, Heru Suhartanto<sup>2</sup>

sri.chusri@yarsi.ac.id; angga.pradipta@students.yarsi.ac.id;  
puji.atmoko@yarsi.ac.id; ummi.azizah@yarsi.ac.id; [heru@cs.ui.ac.id](mailto:heru@cs.ui.ac.id)

<sup>1</sup>Faculty of Information Technology, Universitas YARSI, Indonesia

<sup>2</sup> Faculty of Computer Science, Universitas Indonesia



# Background

The Indonesian government's policy on e-health started in 2002, but the implementation of e-health in Indonesia is still insufficient.

For example :

Type of resource tracking system in e-health (WHO, 2013)

- Indonesia : paper
- Pakistan : electronic
- Vietnam : electronic

Whereas ..

GDP per capita in 2013 (World Bank, 2014)

- Indonesia 3.475 USD
- Vietnam 1.911 USD
- Pakistan 1.275 USD



# Motivation

- Adoption of cloud computing into e-health has been noticed that can improve health services.
  - Cloud computing changes the paradigm of the use of information technology in the field of health and also is very useful for health research (Kuo, 2011).
  - Before adopting cloud computing, a study of appropriate deployment models for the Indonesian e-health context should be done.
- Improve health services for all Indonesian people.



# Methodology

- Collecting data from samples of hospitals in Indonesia → the opportunities and challenges
- Applying cloud adoption conceptual framework (Khajeh, 2012) → the decision of adopting cloud computing.
- Using benefits, opportunities, costs, and risks (BOCR) analysis (Lee, 2012) → in the selection of deployment model.



# Cloud Adoption Conceptual Framework

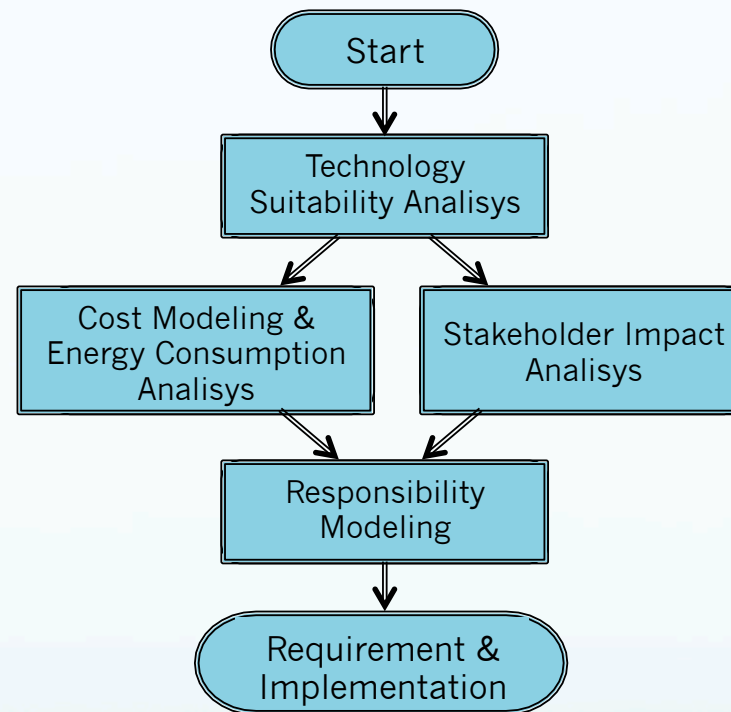
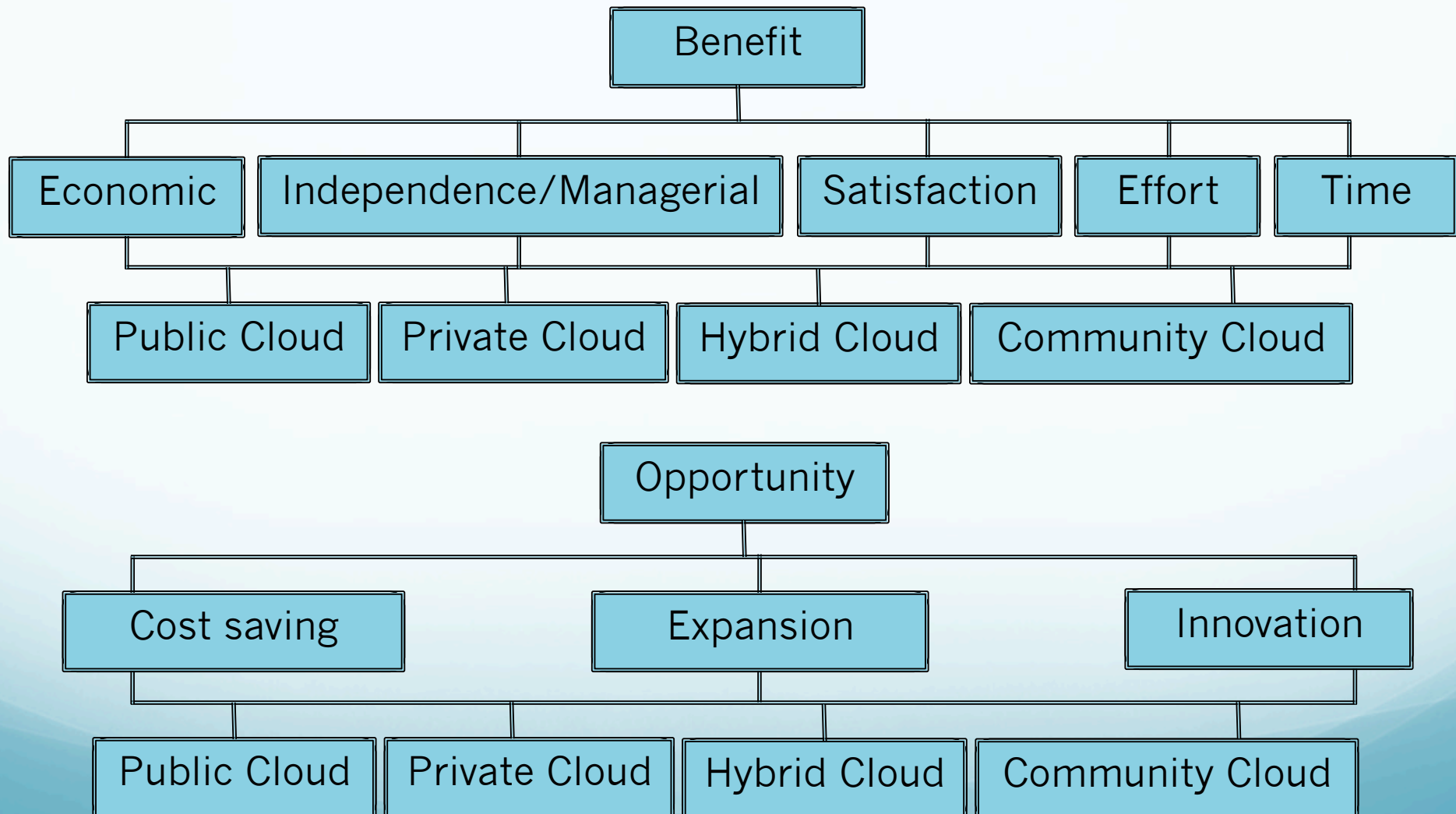


Figure 1 Cloud Adoption Conceptual Framework (Khajeh, 2012)

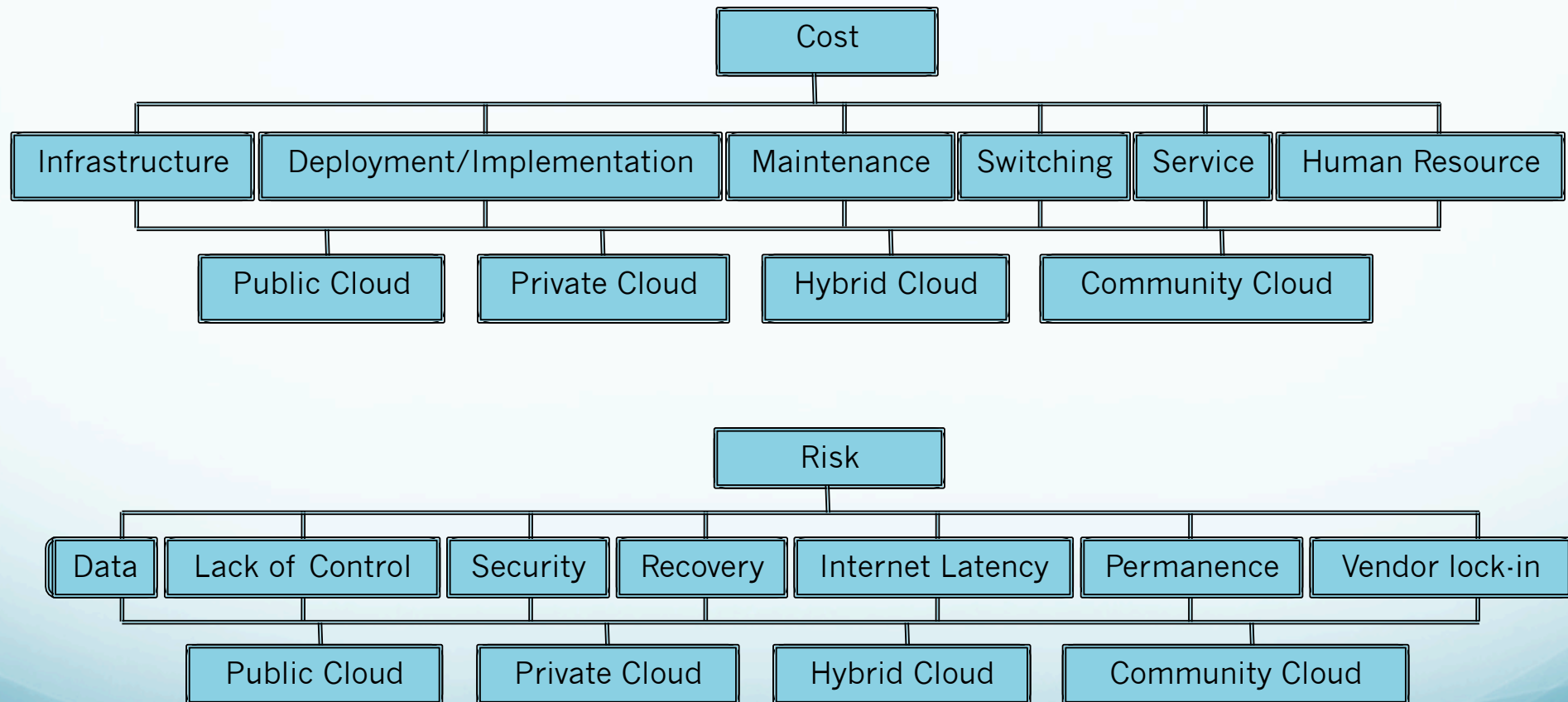


# Selection of cloud deployment model...(1)





# Selection of cloud deployment model...(2)





# Indonesian e-Health Cloud Deployment Model



Community Cloud





# Future works

- Formulating responsibility model in managing cloud among organizations
- Constructing a detail design of the deployment model for Indonesian e-Health Cloud



# References

- Badger, L., Grance, T., Patt-Corner, R., & Voas, J. (2011). Draft cloud computing synopsis and recommendations. NIST special publication, 800, 146.
- Khajeh-Hosseini, A., Greenwood, D., Smith, J. W., & Sommerville, I. (2012). The cloud adoption toolkit: supporting cloud adoption decisions in the enterprise. *Software: Practice and Experience*, 42(4), 447-465.
- Kuo, A. M. H. (2011). Opportunities and challenges of cloud computing to improve health care services. *Journal of medical Internet research*, 13(3).
- Lee, Y. C., & Hanh, T. N. (2012). A Study on Decision Making Factors of Cloud Computing Adoption Using BCOR Approach. *Journal of the Korea society of IT services*, 11(1), 155-171.
- Nugraha, D. C. A., & Aknuranda, I. (2017). An Overview of e-Health in Indonesia: Past and Present Applications. *International Journal of Electrical and Computer Engineering (IJECE)*, 7(5), 2441-2450
- WHO. (2013) eHealth Report 2013



# Acknowledgements

This work under the support of Indonesian Ministry of Research and Technology and Higher Education, Directorate General of Higher Education Excellent Research Grants.



Thank you