

## Strategy to Achieve Hospital Objectives Using IT Governance

Izatul Milla<sup>1</sup>, Sri Hernawati<sup>2</sup>, Saiful Bukhori<sup>3</sup>

<sup>1</sup> Postgraduate Public Health Study Program, University Of Jember, Jember, Indonesia

<sup>2</sup> Faculty Of Dentistry, University Of Jember, Jember, Indonesia

<sup>3</sup> Computer Science Program, University Of Jember, Jember, Indonesia

### Abstract

Hospital Information System Management (HISM) is important asset and necessary for every hospital. HISM can give great benefits for hospital if the implementation effective. In fact, not few hospital face various challenges and problems that hold up effectiveness HISM. So that, hospital is just not implement but also must govern HISM. The manner to govern HISM is using IT Governance. IT Governance is a framework that provides structures and processes to ensure effectiveness IT implementation in organization. Appropriate implementation of IT Governance is critical role to success hospital achieve its objectives. In this paper, we propose the strategy how to achieve hospital objectives using IT Governance that derived from IT Governance definition which composed by three main strategy (leadership, organization structures and processes). The strategies are important for hospital and need to be done in order to achieve hospital objectives.

**Keywords:** Hospital, IT Governance, Strategy, Information System

### I. INTRODUCTION

Nowdays, business world can't be disparted from information technology (IT). IT is nevermore considered as the proponent tools but it is considered as the part business strategies, among others becomes front line for consumer service, integration business process in organization, a key of savings operational cost and many others. Even, the impact of fast developing IT potentially transforms business or forming new industry sector. The existence of IT becomes an important resource and necessary for every hospital. One of utilization information technology in hospital is Hospital Information System Management (HISM). The purposes implementation of HISM are supporting hospital activities in the levels of practical, tactical, and strategic (Aghazadeh, Aliyev, & Ebrahimnezhad, 2012). In addition, HISM becomes one of important factors of successful to achieve the hospital objectives because HISM can give opportunity to gain competitive advantage, offers provision to improve health service productivity and get more value for the future of hospital.

The requirement of information is the reason for implementing HISM because it has capability to deliver information fastly, accurate and available anytime. Now, implementation of HISM not only helps to process management data but also reaches out on the high level point as support key to making good decision. Quality of health service depends on quality of data that hospital leaders use to make strategic, business and clinical decisions. So that is the role of HISM to deliver data and information. Decision making that based on bad data and information can be negative consequences otherwise decision making that based on reliable data and information bring through hospital to achieve the objectives. Numerous studies show that there are significant numbers that becomes challenge of implementation HISM that make it fail. The failure is because of various reasons. Although, the project management and software have improved, but at the same time each year, tens of billion dollars are spent on failed IT projects (Farzandipur, Jeddi, & Azimi, 2016). On HISM most sections lack proper management, making the conditions for development of HISM unsuitable. Additionally, HISM faces problems such poor management of the project, imbalanced allocation of HISM budgets, poor operational management of HISM, security management and data protection. The problems can become barrier for hospital to achieve their objectives.

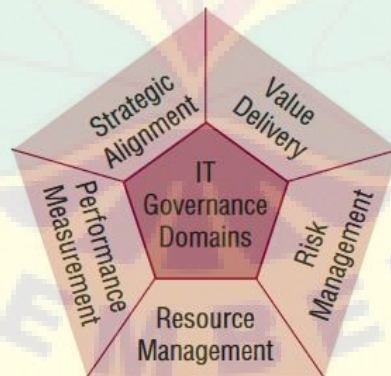
It is not enough for hospital to have HISM and expect it to deliver strategic value to hospital. Instead, hospital needs a mechanism in place to regulate, monitor and govern the value creation efforts of the HISM. This governance mechanism of HISM deals with the performance and risk management of those HISM systems in a manner that would create value for the hospital and ensure the intended alignment of the HISM and business objectives is on track. In Health service industry such hospitals, to solve the problems that cause of the failure of implementation HISM, they need to govern HISM using IT Governance. IT governance provides the conceptual framework that consist leadership, organizational structures and processes that ensure the organization's IT sustains and extends the organization's strategies and objectives (ISACA, 2007). So, IT governance framework can provide proper solution for many of such challenges (Shahi, Sadoughi, & Ahmadi, 2015).

IT Governance implementation is critical for the utilization of the resources in improving patient care and the success of health service delivery organizations (Wiedower, 2016). Hospital doesn't implement IT governance or implement but isn't seriously involves all the member is a big mistake. Without IT governance, HISM in hospital is haphazard endeavour that typically results in late, over-budgeting and ultimately many dispartate systems of health service that do not function well together. That is why hospital must using IT governance when implement HISM because it is a powerful resource used by hospital to achieve their most important objectives (Oyemade, 2012).

## II. IT GOVERNANCE

IT governance is the responsibility of executives and the board of directors that consist leadership, organizational structures and processes that ensure the organization's IT sustains and extends the organization's strategies and objective (ISACA, 2007). IT Governance focuses specifically on IT systems, their performance and risk management. The primary objectives of IT Governance are to assure the investments in IT raise business value, can mitigate the risks that are associated with IT, to ensure they meet internal and external requirements and avoid failure of implementation IT. This is can be done by implementing an organizational structure with well-defined roles for the responsibility of information, business processes, applications and infrastructure (Brisebois, Boyd, & Shadid, 2007). Essentially, IT governance provides a structure for aligning IT strategy with business strategy by following a formal framework, the organizations can produce measurable results toward achieving their strategies and objectives. A formal program also takes stakeholders interests into account, as well as the needs of staff and the processes that they follow. In the big picture, IT governance is an integral part of overall enterprise governance. IT Governance Institute (ITGI) defined five areas that becomes focus of IT Governance:

1. **Strategic Alignment:** Harmonious between It and business with alignment for strategic direction of IT and the alignment of IT and the business with respect to services and projects.
2. **Value Delivery:** Ensure utilization of IT and ensure taht the IT/Business organisation is designed to drive maximum business value from IT. Oversee the delivery of value by IT to the business, and assess ROI.
3. **Risk Management:** Assure that processes are in place to ensure that risks have been adequately managed to controll business risk include assessment of the risk aspects of IT investments.
4. **Resource Management:** Capability of organization management to implement IT with provide high-level direction for sourcing and use of IT resources. Supervise the aggregate funding of IT at organization level. Ensure there is an adequate IT capability and infrastructure to support current and expected future business requirements.
5. **Performance Measurement:** Monitoring the measurement of IT service performance, the contribution of IT to the business and verify strategic compliance such achievement of strategic IT objectives.



There are many IT Governance frameworks are used by organizations worldwide. The effective way to start with a framework that has been created by industry experts and used by thousands of organizations. The most commonly used frameworks are:

- a. **COBIT:** COBIT is IT Governance framework which published by ISACA. COBIT provides comprehensive framework of "globally accepted practices, analytical tools and models" designed for governance and management of organization IT. Rooted from IT auditing , ISACA expanded COBIT's scope over the years to fully support IT governance.
- b. **ITIL:** Information Technology Infrastructure Library (ITIL) focuses on IT service management. It purposes to ensure that IT services support core processes of the business. ITIL comprises five sets of management best practices for service strategy, design, transition, operation and continual service improvement.

- c. **COSO:** Committee of Sponsoring Organizations of the Treadway Commission (COSO) is model for evaluating internal controls in organization that implement IT. COSO's focus concentrating more on business aspects like organization risk management and fraud deterrence.
- d. **CMMI:** CMMI is formerly an acronym for The Capability Maturity Model Integration. CMMI is a method that developed by the Software Engineering Institute. CMMI provides approach to performance improvement. It also uses a scale of 1 to 5 to gauge an organization's performance, quality and profitability maturity level.
- e. **FAIR:** Factor Analysis of Information Risk (FAIR) is a relatively new model that helps organizations quantify risk. The focus of FAIR is on cyber security and operational risk, with the purposes of making more well-informed decisions.

Most IT governance frameworks are designed to help organization determine how IT department is functioning best. When choosing IT Governance frameworks, consider the organization culture. The organization doesn't have to choose only one framework for example, COBIT and ITIL complete each other in that COBIT often explains why something is done or needed where ITIL provides the how.

### III. THE ANALYSIS OF HISM IMPLEMENTATION

In this paper, we describe the case study of HISM implementati in "XYZ" Hospital. "XYZ" Hospital is one of many hospital which awares the important of HISM as valuable assets for every hospital which has function to support its activity and systems. In addition, many organization such hospital place HISM as part of their mission to achieve vission and realize the hospital objectives. One of mission statement of "XYZ" Hospital is "Apply system and procedure supported by intregated manner and comprehesively HISM". That mission is created in order to realize "XYZ" Hospital vission "Realize first-rate, professional and modern in health service sector". By the mission, HISM roles as driving force to achieve hospital vission. It isn't easy for "XYZ" Hospital to implement comprehesive HISM, many challenges become barrier for hospital to achieve that. As long as four years HISM implementation, "XYZ" Hospital still can't boost HISM to achieve hospital vission by implementation comprehensive HISM. Based on the result of condition analysis on "XYZ" Hospital's HISM, the authors found some conditions:

1. Only one department (HISM department) has responsibility to manage HISM. "XYZ" hospital still not yet create HISM steering committee as part of HISM investment that can together with CEO and HISM department to manage HISM investment. "XYZ" Hospital still not yet awares the important of existence HISM steering committee that leads the strategic planning, organization, prioritization, investment, decision-making acvities in all areas of HISM throughout hospital..
2. Uncontinue technological direction gave by management or CEO.
3. The number of human resource (HR) with IT background still insufficient.
4. There are some departments or units isn't intregated with HISM.
5. HISM isn't linked with insurance information system (IS).
6. Based on the result of HISM audit using COBIT framework, we found the current maturity level (as-is) of IT process under the expected maturity level (to be). It means that all the IT process must improved to expected maturity level if HISM want to be close with the hospital objectives. The maturity level (as-is and to-be) of IT process in HISM "XYZ" Hospital showed in below radar chart.

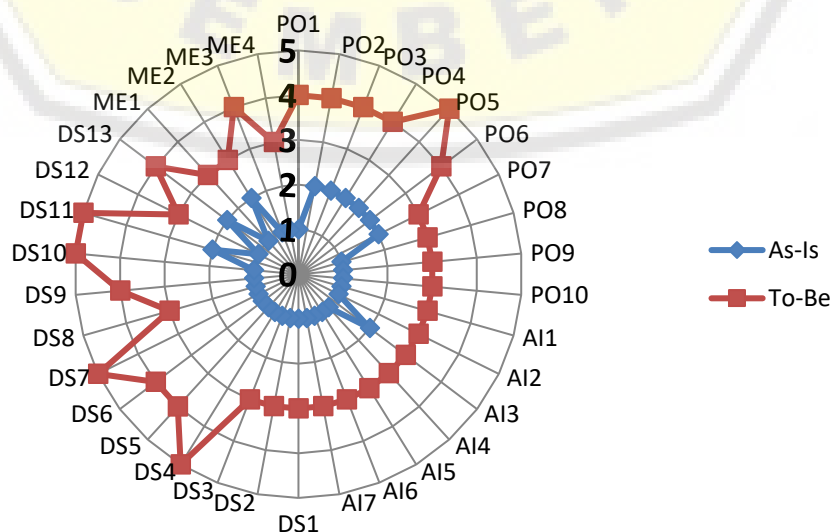


Figure 2. The Current And Expected Maturity Level Of HISM's IT Process

From the finding about condition on HISM CEO, HISM department and hospital management must govern HISM using IT Governance for optimizing HISM investment to get greater roles of HISM. Ultimately, it can deliver “XYZ” Hospital to achieve its objectives. The authors propose some activities that can lead hospital to reach good IT Governance:

- a. Make the IT Governance implementation as improvement program of hospital continuously
- b. Ensure that the result of IT Governance implementation becomes part of daily operational
- c. The hospital must aware that IT Governance implementation involves cultural change, giving motivation and incentive is a important key.
- d. Ensure that all parties in hospital that concerned know and understand the objectives that will be achieve.
- e. Synchronize perception and expectation that successfull IT Governance implementation needs time, effort and continuously improvement.
- f. Continuously, focus on the easiest data and gives impact that can be perceived.
- g. Try to get support from top management mainly with accentuate principles best IT Governance implementation.
- h. Avoid impression that only beraucracy institutionalization form.
- i. Avoid checklist approach which unfocussed.

#### IV. THE PROPOSE STRATEGY

Unlike many others industries, health service industry such hospital doesn't has the same breadth or depth of experience in IT governance. As a result, many hospital may lack the best-practice IT governance principles, guidelines, and processes necessary for success in today's implementation of HISM. Ultimately, it can cause HISM can't foster success in achieving and realizing hospital objectives. While definitions of IT Governance may vary, the definition that we prefer is what's used by the ITGI regarding IT governance. It refers to the “leadership, organizational structures and processes to ensure the organization's IT sustains and extends the organization's strategies and objectives”. Based on that definition, we propose strategy model how to achieve hospital objectives using IT Governance that showed on figure 3.

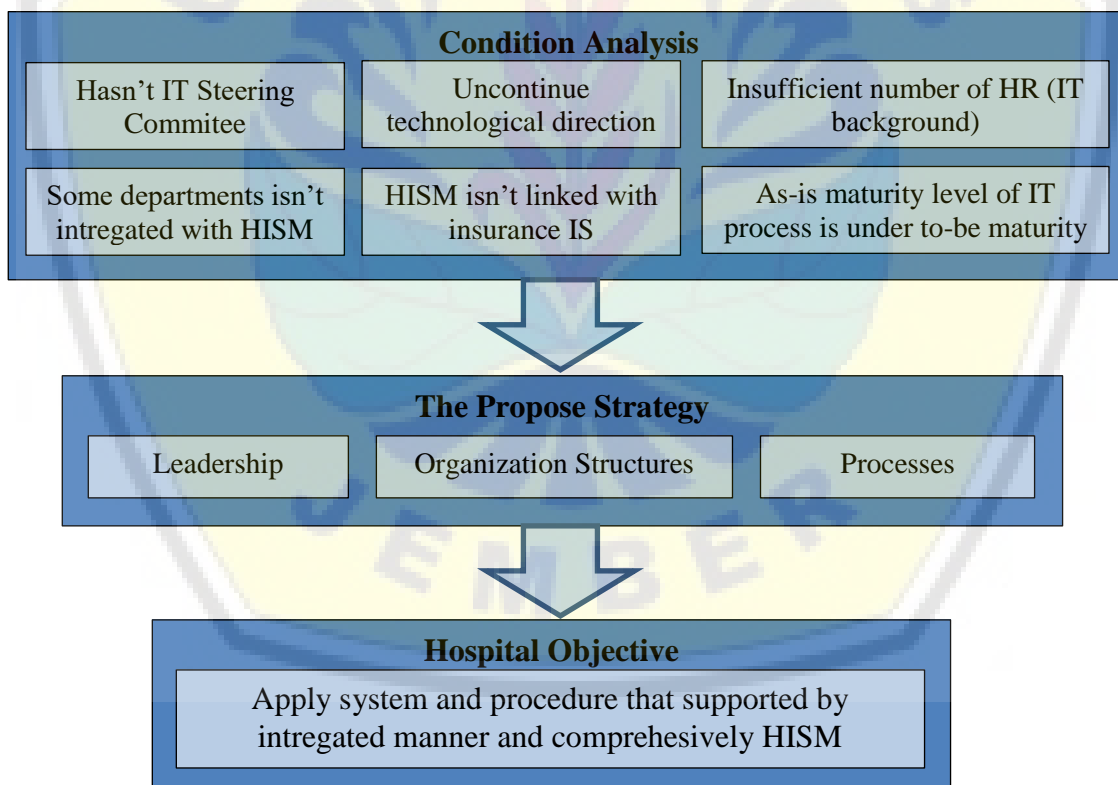


Figure 3. The Strategy Model

In this paper, we propose strategy how to achieve hospital objectives using IT Governance that derived from IT Governance definition which composed by three main strategy:

1. **Leadership:** Leadership is an important element in successfully steering a hospital through any health IT implementation effort such HISM. Strong leadership will help hospital staff adjust to barriers that may accompany HISM and slow down success. The head of HISM steering committee as driver of HISM implementations and Chief Information Officer (CIO) as leader in IT Department must aware and understand the important and the advantage to manage HISM using IT Governance. The head of HISM steering committee and CIO without IT backgrounds often ignore this main role of IT and IT Governance and hence the return on IT investment turns out to be below their

expectations. The head of HISM steering committee who not only understand the technology needs of their respective departments, but also able to holistically consider HISM on behalf of entire hospital. The leadership of this committee, which should meet regularly (not just regarding major initiatives), should include representatives from HISM as well as the clinical and operational sides of the organization. In addition, it is important for CIOs to continually educate fellow executives about the constantly changing health IT landscape. CIO also must boost all executives need to be able to speak intelligently on these HISM and HISM Governance issues.

## 2. Organization Structures

- a. **Create an IT or HISM Steering Committee:** Establish an IT or HISM steering committee (or equivalent) composed of executive, business and IT management to (ISACA, 2007):
  - i. Determine prioritisation of IT-enabled investment programmes in line with the enterprise's business strategy and priorities
  - ii. Track status of projects and resolve resource conflict
  - iii. Monitor service levels and service improvements
- b. **Reinforce of functional IT or HISM Department:** IT or HISM Department is the department within a company is charged with establishing, monitoring and maintaining information technology systems and services. The IT or HISM department must perform its role and responsibility to provide the infrastructure for automation. It implements the governance for the use of network and operating systems, and it assists the operational units by providing them the functionality they need.
- c. **Create cross-departmental teams:** Cross-departmental team focus on the importance of a common strategic objectives and the overall impact it can have on the hospital. The team should provide the hospital's IT department with a better starting point and a more clear idea of what they need to do to fulfill HISM implementation for the hospital to bridge the gap between departments.

## 3. Processes

- a. **Collaboration across department in hospital:** Each department in hospital has different wants, needs and incentives. Collaboration allows for everyone to speak a common language which is critical to the hospital's viability with HISM. In addition collaboration across department can provide the extra boost that is sometimes needed to move HISM initiatives out of the conference room and into the board room where the strategic significance can be realized. When the IT or HISM department receives the support from this collaboration, the implementation process can be more effective. Furthermore, collaboration at a high level in a hospital can permeate the entire organization, making the barriers that typically accompany HISM easier for everyone (physicians, nurses, clinicians and management) to handle.
- b. Define the role of every member in each department and committee and define the role of CEO and CIO related with HISM.
- c. **Regularly Communicate:** In an communication vacuum across CEO, IT or HISM department, across department team and user of HISM will often make incorrect assumption about something that related with HISM. It does'n let to occur, communication must always perform regulary. All process that related with HISM from activity of planning until monitoring and evaluating must communicated to all parties that involved in entire hospital. By regularly communication, hospital will significantly curtail the amount of angst regarding HISM initiatives and greatly lessen the considerable time it inevitably takes to clear up misconceptions and misunderstandings.

## V. CONCLUSION

Hospital managements must ensure that HISM has implemented in their organization serve as vehicle to achieve hospital objectives. To serve as vehicle, management hospital must govern the HISM using IT Governance. IT Governance is a formal framework that provides a structure for organization to ensure that HISM invesment supports hospital objectives. By adhere IT Governance, hospital can continuously optimize HISM to capitalize benefits and produce best outcomes for patients. The strategies that we propose are important for hospital and need to be done in order to achieve hospital objectives.

## References

1. Aghazadeh, S., Aliyev, a., & Ebrahimnezhad, M. (2012). Review the Role of Hospital Information Systems in Medical Services Development. *International Journal of Computer Theory and Engineering*, 4(6), 866–870. <https://doi.org/10.7763/IJCTE.2012.V4.596>
2. Brisebois, R., Boyd, G., & Shadid, Z. (2007). What is IT Governance and why is it important for the IS auditor. *The INTOSAI IT Journal*, (25), 30–35. <https://doi.org/10.1136/bmj.322.7301.1536>
3. Farzandipur, M., Jeddi, F. R., & Azimi, E. (2016). Factors affecting successful implementation of hospital information

systems. *Acta Informatica Medica*, 24(1), 51–55. <https://doi.org/10.5455/aim.2016.24.51-55>

4. ISACA. (2007). Framework Control Objectives Management Guidelines Maturity Models. *Governance An International Journal Of Policy And Administration*, 213. [https://doi.org/10.1016/S0167-4048\(97\)84675-5](https://doi.org/10.1016/S0167-4048(97)84675-5)
5. Oyemade, R. (2012). Effective IT Governance Through the Three Lines of Defense , Risk IT and COBIT When the US Senate Banking Committee asked. *ISACA Journal*, 1, 1–6.
6. Shahi, M., Sadoughi, F., & Ahmadi, M. (2015). Information technology governance domains in hospitals: a case study in Iran. *Global Journal of Health Science*, 7(3), 200–208. <https://doi.org/10.5539/gjhs.v7n3p200>
7. Wiedower, J. S. (2016). Information Technology Governance : Vital to Healthcare Systems. *Scholar Archive, Paper* 3753. Retrieved from <https://digitalcommons.ohsu.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=16902&context=etd>

