

Risk Management in Healthcare Services

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ABSTRACT

The contribution of this research purposed a transition process and model of e-Healthcare services, and created knowledge based from integrated process between public and private partnership for risk transition management in e-Healthcare services. The process, model, and knowledge based are discussed by using several cases of healthcare services transition projects in Thailand to develop and organize transition plan. Risk management and project management are deployed during transition process to reduce project failure as the same time increase possibility of project success. The research objectives of healthcare transition are designed for system efficiency and effectiveness subject to; improved healthcare quality, increased accuracy and traceability of treatment process, reduce operation costs, compliant international standards, and facilitated treatment information for medical and clinical team. The research findings initiate a standardized pattern of risk transition process and model for healthcare services.

Keywords

e-Healthcare Services, Healthcare Transition, Risk Transition Management.

1. INTRODUCTION

In the 21st century, it is a generation of technological change. Evaluation in telecommunication technologies drives extremely the growth rate of an internet since year 2000. Social networks, Nano technologies, Wireless Communications, RFIDs, and life expectancies are all apprences (outcomes) of the change prevalent in neo society. The present business consideration is from productivity improvement to quality centric, a change from local competition to global competition, and overall transition from a manufacturing ecosystem to a service or information ecosystem. In the future, digital services are inevitable to increase competitive advantage. It is a huge gap of transition from traditional business to e-business and e-commerce.

Business transition is essential and inevitable, but it is also jeopardized. However, all businesses need to reform and transform for creating a better position and competitive advantage. Transition courses uncertainties and risks which in turn conducted pressure. Therefore, transition is stressful, unpredictable, and risky. It is unforeseen in its outcome and effects on the organization reform.

This research is addressed on system integration beyond the project management, i.e. between the risk transition project and the organization's vision. This interrelationship is instituted a

hierarchy of risk levels that need attention and enterprise risk management. It requires coordination and synchronization of the entire activities. It is not just done in isolated areas. From the project landscape, the natural interface upward is in the program structure that has its own program risk management. Risk management has a special mechanism to transform a transition project because transition project are particularly risky. Risks shall be employed at the outset of the project's objectives and constraints. Normally, there are transformation to project-level risks and overall project risks. Researcher purposed a pragmatic system approach to transform risk management within formal process identified typically in standards and methodologies. There are great definitions of how to perform about preparing a risk manage plan. To make Management transition project be successful, is a problem. Neo and better strategic options are required continually to perform, but former and repeating failures won't disappear. Perchance the legacy focuses on only one method that is inefficiency to improve challenge.

We all have accepted that each project is for some unique purpose, unique problem, unique constraint, and reason to happen. Moreover, they have their own way to success or failure. There are many researchers' articles that demonstrate the projects are often failed to meet their objectives and expectations such as, on budget, on schedule target, and provide intended benefits. Even though, there are several solutions to solve those problems, but the concept of "one solution does not fit all problems" is always applying project by project.

2. HEALTHCARE MANAGEMENT

Silo operations is a traditional day life of healthcare operations system which obstructs and constraints a healthcare development in the 21st century. Resistance from traditional culture creates misinterpretation objectives of healthcare transition project. We need to believe in a change and transition that will create more benefits to stakeholders in molt dimension payoffs. In a hierarchy of project objectives, strategic implementation objectives will be technically different from the operations ones. Transitional objectives do concern about the entire project lifecycle from requirements and expectations after that interprets to conceptual design, transforms conceptual design, implementation, and compliant international and national standards. Moreover, the process is constructed by a sustained business development. However, during transition process, we cannot avoid risks and uncertainties situation.

All transition processes and methods have their own risks, but how to authentically recognize the root cause of risk. It is

important for organization transform and reform process. In 21st century risk analytical skill requires for all organization development to sustainability for creating competitive advantage. During transition in the second millennium, information technology reforms an organization as core business operations which malt down with business strategic management. One can say that business and IT vision shall be the same paradigm not paradox interrelationship.

The objectives of healthcare transition are designed for system efficiency and effectiveness which defines as a probability that a system can successfully meet an overall operational demand within a given time when operated under specified conditions or the ability of a system to do the intention for which in was committed. Many technologies attempt to fall shorter than expectations or do not sufficiently deal with the complexity of the solution required. Furthermore, many of the complementary tools and technologies need transition method that are often lacking of have not been adequately performed. All these factors can drive tendentious risks during implementation and may discourage their use.

Emile [1] defined a system transition as a structural change among technologies, procedures, and ecosystems. Transition management performs as primary object to manage metamorphoses towards sustainability. Transitions can be described as “gradual continuous processes of change where the structural character of a society or complex sub-system of society transforms”. Transition management can be classified into the following characteristics [2]:

- long-term thinking for framing short-term policy;
- multi-domain, multi-actor, multi-tier;
- focusing on learning;
- aligning system innovation and system improvement;
- keeping a large number of options open.

They are two conceptual approaches of how transitions materialize. One, literature on transitions utilizes three analytical and heuristic tiers for system innovations. The micro-tier contains unique technologies, in which neo technologies can come into maturity and be developed. The meso-tier embraces a group-work of procedures in a dynamic equilibrium. The macro-tier grasps technical ecosystem landscapes, with global and natural system development. In this formalization stage, transitions transpire when rejuvenations on the micro-tier evolves and is taken up to modify the group-work of procedures and eventually transforms the landscape on the macro-tier [3].

Other, four transition stages are described in the pathway of transformation, as illustrated in Figure 1.

A stage of predevelopment depicted in (1) that one of dynamic equilibrium I. In the take-off stage (2) changing starts to transpire. During the breakthrough stage (3) obvious structural changes have effect. A transition ends with a stabilization stage (4), where the speed of transforming decreases and a new dynamic equilibrium II is accomplished. There are three system indicators are identified; the time period of a transition; the speed of a transition; and the size of the change [4].

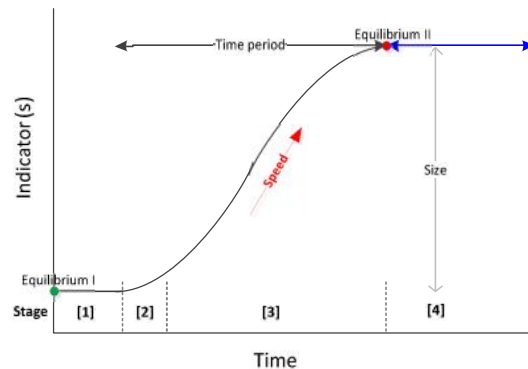


Figure 1. Stages and indicators in a transition procedure.

3. METHOD AND SUBJECT OF STUDY

Researchers defined a public healthcare system transition as a structural change in three dimensions; technical systems; innovation processes; and social-impact subsystems.

At policy management level; five organizations have been interviewed: Ministry of Public Health (MOPH); National Health Security Office (NHSO); The Institute of Hospital Quality Improvement & Accreditation (HAI); National Health Commission Office (NHCO); and Health Systems Research Institute (HSRI). Mainly the questions asked for management are concentrated on “how to improve healthcare services by applying IT.” This research was conducted through two interviewees of each organization.

At practitioner level; 4 public and 4 private hospitals have been observed and investigated on existing processes, IT technologies, and patients’ satisfaction levels by direct interviews and questionnaires. Each group of hospital was selected; 5 doctors; 5 nurses; 10 admin staff’s support; and 20 patients at hotspot. Impact level of hospital performs transition to e-Healthcare purposes to perform mathematical model in term of quantitative analysis. Healthcare transition management model (HTMM) was designed and constructed a guideline as a stepping stone for MOPH to consider as standardization for applying to deliver a basic e-Healthcare of public healthcare services in Thailand.

4. HEALTHCARE TRANSITION MODEL

Present’s health-care businesses operate in dynamic environments that they need continuous adapts to change as patient’s expected level. The medical and clinical treatment trends are reduced time treatment and operation costs but increased healthcare quality, and changing in improved healthcare standards and legislations. Health organizations are forced from outside rapid environmental changes such as technological innovation, deregulation, competition, patient’s growth rate, and scarcity of medical resources. The consequence impact of not adapting rapidly transition to these changes could create penalty of lost market share, financial difficulty, or entire completed failure in competitive business. The dissipative model (DM) links rapidly moving the system into a highly unstable state or equilibrium II, as seen in Figure 1, and involves huge change over a short period of time [5]. This equilibrium II should be sufficiently different from the old state or equilibrium I. This DM is forced to change to desired future state. Conversely, logical incrementalism (LI)

encourages that change should be accomplished slowly and in small transforms stages. The more conservative approach for healthcare transition model may be appropriated to use LI. Advantage and disadvantage of LI and DM model are compared as illustrated in Table 1. Since healthcare transition involves many health systems: personal health management; healthcare delivery; public health; and researches [6]. The primary choice between DM and LI seems to be based on risks which are in turn usually related to transition period, source of funding, and maturity technologies. As the same time, risk management: ISO 31000 [7] and project management: IEEE std. 1490-2003 [8], are designed and planning for helping and securing healthcare transition success.

Table 1. Advantage and Disadvantage of Logical Incrementalism and Dissipation Models [5]

METHOD	ADVANTAGES	DISADVANTAGES
Logical Incrementalism Model	<ul style="list-style-type: none"> * Useful with a long lifetime project * Promotes cohesion, identify, morale, and consensus * Allows for easy modification as the program matures * Perhaps the safest if time allows 	<ul style="list-style-type: none"> * Slow and may not be responsive enough to rapidly changing environments * Lack of a clear goal may raise anxiety levels * May induce management control problems due to uncertainty * May not be possible because of a catalyst of time constraints * Slow speed of change may increase tension * Lower levels may view the slow change as an indication of management insecurity, hesitancy, or timidity
Dissipative Model	<ul style="list-style-type: none"> * Allows the organization to change rapidly * Commitment to the new state is increased * A clear signal of corporate policy in given 	<ul style="list-style-type: none"> * The consequence of an unsuccessful transition effort could be a chaotic and disorganized system which could collapse * Bureaucratic, hierarchical organizations may have difficulty using DM * The pace of change is not conducive to monitor or modify of the transition * High amounts of stress are created by rapid change

4.1 Investigation on Existing Healthcare Systems

The investigation by interviewing and observing with 4 public and 4 private hospitals, the result shown that each IT system of each hospital has done as ad-hoc system, they are different from each other subject to: strategic policy, IT facility infrastructure, hospital information system (HIS) applications, type of medical clinical data records, process of data record and storage, system operations, and system maintenance. Since, Ministry of Public Health (MOPH); National Health Security Office (NHSO); The Institute of Hospital Quality Improvement & Accreditation (HAI); National Health Commission Office (NHCO); and Health Systems Research Institute (HSRI), do not have standards and regulations to force them to do. Moreover, some of subjects (selected hospital) still use manual cards for recording their

patient’s information. The latest update information demonstrates that only patient’s rights verification can do as digital transaction through NHSO from all public and private hospitals for verifying their insurance/social healthcare policy, as depicted in Figure 2.

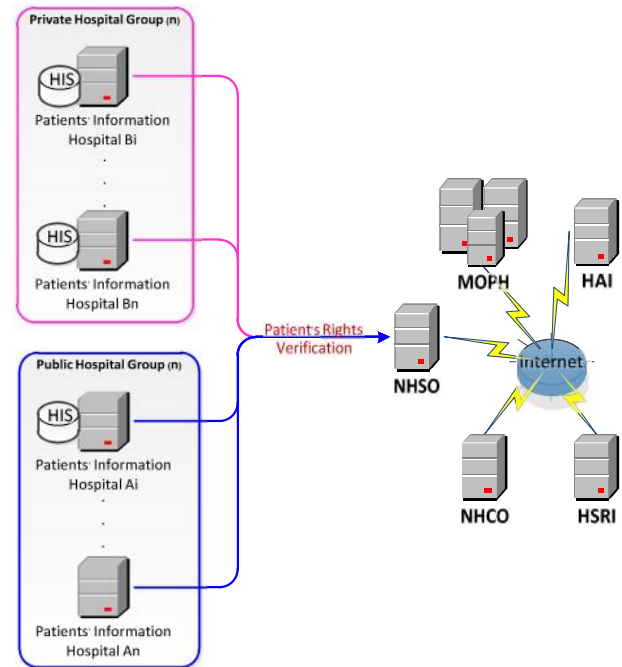


Figure 2. Existing health information infrastructure.

4.2 Interview Results

The subject’s interview results represented a sample of hospital’s population. Research may classify risks into 3 stages: policy risks; implementation risks; and operational risks. Policy risks are involved unpredictable of political climate that direct impacts through policy maker. Healthcare direction always changes when the new government changed. Mostly, head of MOPH is depended on politician. It is no continuous on long term healthcare direction since government team always changed. Moreover, policy also relates to source and amount of funding that supports from national healthcare activities and projects. It has created the phenomena of “struck in the middle of nowhere policy.” The report from MOPH (2010) demonstrated that in year 2009, 505 hospitals in Thailand have problems with deficit cash flow management and 175 hospitals have problem with liquidity. The statement declares that this problem came from government insurance policy. Since operations costs in public healthcare increased by 30-40% but central government give a free public healthcare to 47 million citizens with the same operations costs from last year. It showed crisis in public healthcare management.

Implementation risks, 50% of projects fail before/during implementation because they are not related to the new policy maker ideas, 30% of projects fail because of specifications and requirements changed. 20% of projects fail due to cannot deliver as term of requirements (TOR), technical problems, delay by suppliers, and testing and commissioning problems.

Operational risks, it is divided to two groups: soft system (human activities) and hard system (equipment operations). 80% is under human activities such as no plan to fail: misunderstanding processes (interpretation), ignore instructions (attention), tired, feeling and emotion conditions (time); fail to plan: upgrade error, malfunction during testing system, miss version, and time to leave. 20% is failed under systems, equipments, operations condition, and nature disaster for example meantime between failures (MTBF), meantime to repair (MTTR), flooding, earthquakes, etc.

4.3 Construction Transition Model

It is time to move forward by leaving old/legacy healthcare operations management and transform to digital operations management. Technology in 21st century helps reduce operations costs and time, improve operations efficiency and effectiveness, increase healthcare quality, create healthcare standards, and save more life. Nature of public healthcare management involves with many parties, therefore transformation may take long time from party to party or from collaboration to integration. With this reason LI model is the suitable model for applying during healthcare transition. The healthcare transition needs cooperation from all parties: private and public hospitals, healthcare government agency, and medical schools. The transition shall start from MOPH vision which needs to declare healthcare transition project as national policy and must doing as standards and regulations for all parties that involved. The healthcare transition management model (HTMM) is comprised of 3 stages: hospital information system (HIS), national healthcare information exchange (NHIE), and national healthcare information infrastructure (NHII), as illustrated in Figure 3.

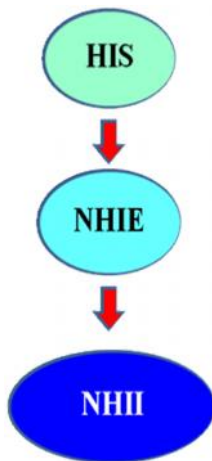


Figure 3. Healthcare transition management model (HTMM). The starting transition shall be from the smallest or based of healthcare structure which is hospital. First step: define standard of HIS must take into action. Since HIS is control all hospital information activities and it is the first stage of patient information input and execute as electronic medical record (EMR). Second step: define standard of NHIE must be complying by all parties, as demonstrated in Figure 4. It is the second stage that transforms all EMRs to portable data and information. This NHIE is designed to support all nationwide information requests from any hospital as concept of anytime and anyplace and anywhere. Before this

concept fulfill the last stage must be completed first, that is NHII. NHII describes as backbone networking communication system of national healthcare services. This healthcare transition will change the way of traditional healthcare service to become e-Healthcare services. It links and transports all EMR from hospitals through international information requestors such as when patient travel to aboard and get sick the host hospital in aboard can request and retrieve patient's information for diagnosis and analysis before making decision for treatment. It saves time and reduces more duplicate processes for doctor to making decision more accuracy as a result to save more life.

However, healthcare transition needs more resources to support such as funding, expertise from all healthcare segments, IT specialists, maturity technologies, and public-private collaboration. Therefore, central government must be taken as a host of this project because of huge investment and long term project that relates to high risk of policy, funding, regulations, and technologies.

5. CONCLUSION

The result findings demonstrated the system transition from the predevelopment or pre-design, take-off or change starts occur, breakthrough or visible structural changes, of healthcare transition management model (HTMM) till new dynamic equilibrium point the resistance of stakeholders reducing dramatically, from phase by phase. For the design phase of system transition this might be even more problematic, because not only the political system but also the transition process is dependent on objectives and constraints. Integration and synchronization of information, system integration, and requirements and expectations among patients, IT experts, and medical teams is the key to success of transition mechanism from legacy healthcare services to e-Healthcare services. Researcher believes that proper design and planning of e-Healthcare reform is necessity to accomplish a hospital accreditation (HA) requirements. These require new medical and clinical policies, regulations, organization development, maturity technologies, support funds, and neo vision of collaboration and integration strategies. To provide a better support for medical and clinical treatment, decision support system (DSS) shall be integrated and synchronized throughout national healthcare information systems which will underpin transition management for sustainability.

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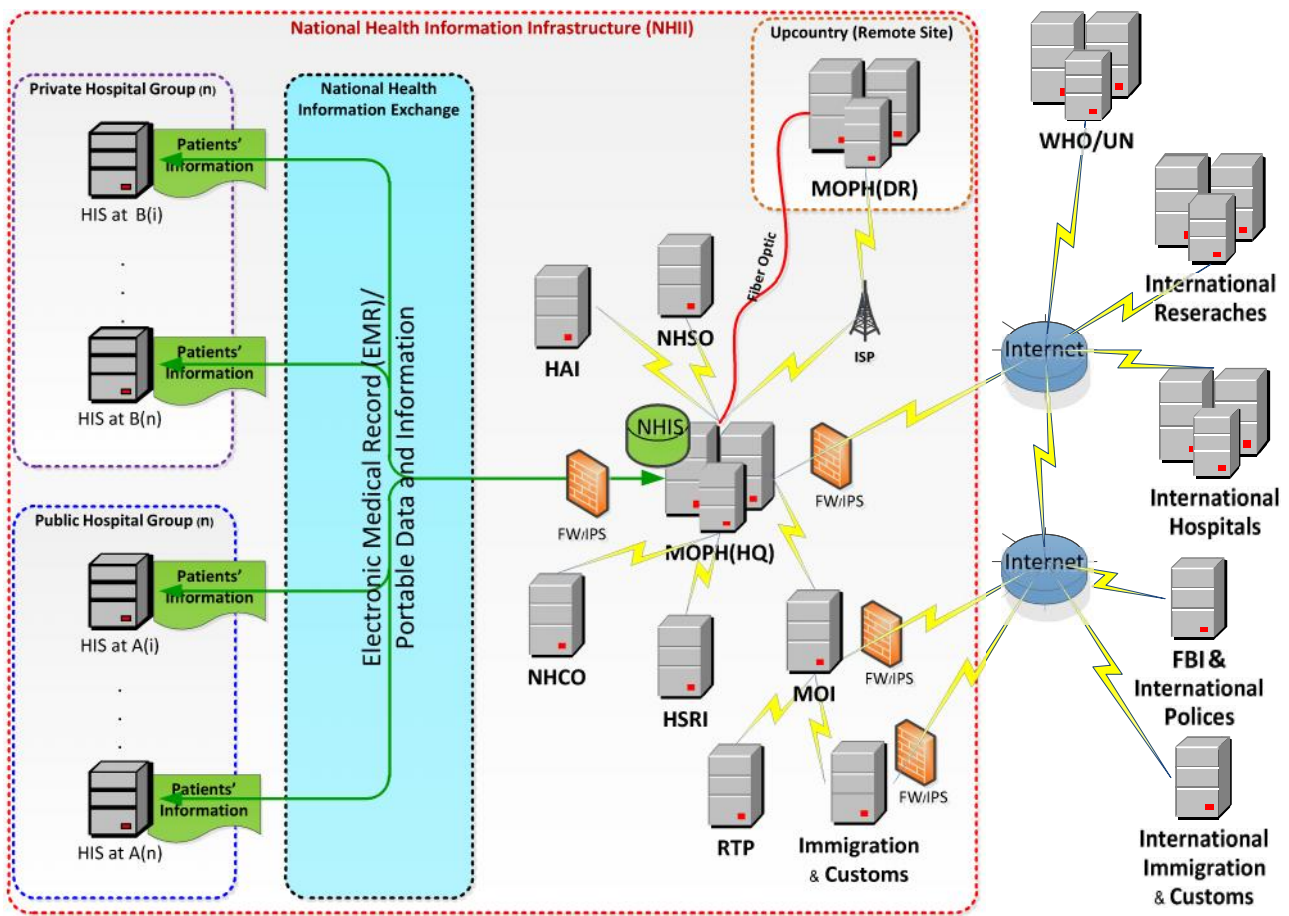


Figure 4. National health information infrastructure (NHII).