

CHANGE MANAGEMENT STRATEGY DEVELOPMENT IN INFORMATION SYSTEMS / INFORMATION TECHNOLOGY USING ANALYTIC HIERARCHY PROCESS

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Abstract

This paper discuss and share the implementation of AHP method in change management strategy development in IS/IT area. Many literature explain about the use of AHP as a tool to perform group decision-making in application selection in IS/IT area, such as ERP systems. Likewise, AHP is also used as a tool to perform group-decision making in strategy development in strategic management area. In this paper, we will discuss the implementation of AHP in strategic level of IS/IT. It is to perform group decision making to develop change management strategy regarding IS/IT implementation in various companies. This paper is a literature research of six student thesis at Master of Information Technology Program, Faculty of Computer Science, University of Indonesia from 2008 to 2012. Our experience in this case show that the use of AHP should be combined with SWOT analysis and systems thinking / soft system methodology.

Keywords : analytic hierarchy process (AHP), IS/IT implementation, change management strategy, systems thinking / soft system methodology (SSM), SWOT analysis.

Introduction

The analytic hierarchy process (AHP) - developed by Thomas L. Saaty - is a structured technique for analyzing complex decisions. It is a group decision making and is used in a wide variety of decision making situations, including in information systems / information technology (IS/IT). Research that use AHP appeared in many articles of MIS Quarterly, a leading journal in IS/IT area.

AHP assist decision makers find best objective and understanding of the problem. It has comprehensive and rational framework for decision making process by quantifying its elements : criteria, alternatives, and consistency. AHP decompose decision making process into sub-problems. The decision makers evaluate the elements using pair-wise comparison technique. Mostly in making the comparisons, the decision makers use their judgments about the relative meaning (perception) and importance (quantify). AHP is all about quantifying human minds and judgements to choose the best decisions.

In this paper, we will discuss the implementation of AHP in strategic level of IS/IT. It is to perform group decision making to develop change management strategy regarding IS/IT implementation in various companies.

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AHP in Change Management Strategy Development in IS/IT

This paper is a literature research of six student thesis at Master of Information Technology Program, Faculty of Computer Science, University of Indonesia from 2008 to 2012. The summary and discussions of the thesis as follows :

Author	Role of AHP	Discussions
Ratnawati (2008)	<p>Objective :</p> <ul style="list-style-type: none"> • To choose main strategies for change management for Partnership Information Management Systems (PIMS) implementation. <p>Criteria :</p> <ul style="list-style-type: none"> • organizational impact, • individual impact, • information quality, • systems quality, • vendor quality. <p>Alternatives :</p> <ul style="list-style-type: none"> • 18 strategies (not grouped) <p>Other tools :</p> <ul style="list-style-type: none"> • IS/IT SWOT analysis, • enterprise wide change, • systems thinking, • soft systems methodology. 	<p>This thesis shown us that the use of AHP to develop change management strategy in IS/IT area together with soft-systems methodology (SSM) is very helpful. SSM methodology required the involvement of group discussions since the beginning of the process.</p> <p>The are seven steps in SSM process, and AHP could be used in the convergent process of ideas in any steps.</p> <p>Since the involvement of the expert or panelist start from the beginning, then the decision making process using AHP will be easier.</p>
Rahmawati (2009)	<p>Objective :</p> <ul style="list-style-type: none"> • To choose main strategies for change management to accelerate ERP migration process. <p>Criteria :</p> <ul style="list-style-type: none"> • organizational impact, • individual impact, • systems quality, • information quality, • vendor/consultant quality. <p>Alternatives :</p> <ul style="list-style-type: none"> • 16 strategies (not grouped) <p>Other tools :</p> <ul style="list-style-type: none"> • IS/IT SWOT analysis, • John Kotter 8-steps, • enterprise wide change, • systems thinking, • soft systems methodology. 	<p>Same as Ratnawati (2008), this thesis shown us that the use of AHP to develop change management strategy in IS/IT area together with soft-systems methodology (SSM) is very helpful. SSM methodology required the involvement of group discussions since the beginning of the process.</p> <p>Since the involvement of the expert or panelist start from the beginning, then the decision making process using AHP will be easier.</p> <p>This thesis also used the John-Kotter 8-steps (Kotter, 1996) to develop strategy. There is significant benefits</p>

		of this method specially in steps analysis and brainstorming of strategy.
Hermawati (2010)	<p>Objective :</p> <ul style="list-style-type: none"> To choose main strategies for change management for Partnership Information Management Systems (PIMS) implementation. <p>Criteria :</p> <ul style="list-style-type: none"> system quality, information quality, vendor quality, individual impact, workgroup impact, organizational impact. <p>Alternatives :</p> <ul style="list-style-type: none"> five groups of strategy (26 strategies). <p>Other tools :</p> <ul style="list-style-type: none"> IS/IT SWOT analysis 	<p>In this thesis, it is difficult to perform AHP analysis, because the strategies that come from IS/IT SWOT analysis is a generic IS/IT strategy, not specific in change management in IS/IT area.</p> <p>Then the author grouped the strategies into five group to identify the change management process / steps, before doing AHP analysis.</p>
Putra (2011)	<p>Objective :</p> <ul style="list-style-type: none"> To choose main strategies for change management for IS/IT Project Management implementation. <p>Criteria :</p> <ul style="list-style-type: none"> customer, strategy, technology, delivery. <p>Alternatives :</p> <ul style="list-style-type: none"> 24 strategy alternatives (not grouped). <p>Other tools :</p> <ul style="list-style-type: none"> IS/IT SWOT analysis Project management 	<p>Same as Hermawati (2010), in this thesis, it is difficult to perform AHP analysis, because the strategies that come from IS/IT SWOT analysis is a generic IS/IT strategy, not specific in change management in IS/IT area.</p> <p>Then the author use the project management body of knowledge (PMBOK) sharpening the strategy before doing AHP analysis.</p>
Noorseptiyanti (2011)	<p>Objective :</p> <ul style="list-style-type: none"> To choose main strategies for change management for information security management systems. <p>Criteria :</p>	<p>This thesis shown us that the use of AHP to develop change management strategy in IS/IT area together with systems thinking is helpful, but not as helpful as SSM because</p>

	<ul style="list-style-type: none"> • top management support, • business process management, • communication, • understanding of goals. <p>Alternatives :</p> <ul style="list-style-type: none"> • 16 strategies (not grouped) <p>Other tools :</p> <ul style="list-style-type: none"> • IS/IT SWOT analysis, • Kurt-Lewin change strategy, • systems thinking. 	<p>SSM methodology required the involvement of group discussions since the beginning of the process.</p> <p>This thesis also used the Kurt-Lewin change strategy to develop strategy. There is significant benefits of this method specially in steps analysis and brainstorming of strategy.</p>
<p>Wicaksono (2012)</p>	<p>Objective :</p> <ul style="list-style-type: none"> • To choose main strategies for change management for ERP implementation. <p>Criteria :</p> <ul style="list-style-type: none"> • project champion, • top management support, • effective communication, • effective training. <p>Alternatives :</p> <ul style="list-style-type: none"> • 23 strategy alternatives (not grouped). <p>Other tools :</p> <ul style="list-style-type: none"> • IS/IT SWOT analysis, • John Kotter 8-steps, • systems thinking. 	<p>This thesis shown us that the use of AHP to develop change management strategy in IS/IT area together with systems thinking is helpful, but not as helpful as SSM because SSM methodology required the involvement of group discussions since the beginning of the process.</p> <p>As an alternative to Norrseptiyanti (2011), this thesis used the John-Kotter 8-steps (Kotter, 1996) to develop strategy. There is significant benefits of this method specially in steps analysis and brainstorming of strategy.</p>

Conclusions

Our experience in using AHP to choose best fit change management strategy for IS/IT implementation lead us to conclusions as follows :

- The change management strategy generation using brainstorming process is much better when using the combination methods / concepts : IS/IT SWOT analysis and either John Kotter 8-steps in change management or Kurt-Lewin 3-steps (field force analysis). IS/IT SWOT analysis only is not sufficient, because it will produce generic IS/IT strategy, not change management strategy in IS/IT area.
- It is recommended to use systems thinking methodology, and it is much better if soft-system methodology (SSM) is used for this case. SSM requires the involvement of the expert participants since the beginning of the process, and conducting AHP analysis is much easier. Our experience shown us that AHP match to SSM in this case.

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