Comparative Study of ERP Implementation Methodology Case Study: Accelerated SAP vs Dantes & Hasibuan Methodology

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Enterprise Resource Planning (ERP) system is a concept of enterprise system that describes the integration of the whole process in the organization. Study in this field mostly about external development paradigm on information system development. So, issue in ERP is all about how to adopt it in the organization, not about the application development. This paper reviews two methodologies on ERP system implementation, one is vendor perspective methodology and the other one is new generic perspective methodology. Comparison of both methodologies is done in this study by using Roger Sessions’ metric. Result is the vendor perspective slightly more superior than the new generic perspective methodology.

Categories and Subject Descriptors: I.3.7 [Computer Graphics]: Three-Dimensional Graphics and Realism—Animation; I.3.5 [Computer Graphics]: Computational Geometry and Object Modeling—Physically based modeling

Additional Key Words and Phrases: ERP, external development, methodology comparison.

1. INTRODUCTION

Enterprise resource planning (ERP) system is an evolved information system technology. Issues on ERP system are related to the external development paradigm. The main issue on implementing ERP is not about developing application to fulfill some certain objectives, but the feasibility to implement the integrated application that cover the whole organizational business process as one window system.

Many vendors has been researching and developing ERP system based on business best practices. The most popular vendors are SAP, Peoplesoft, JDEdwards, Oracle, and Baan. Vendor’s packages is far to be compared with ERP in house development, or probably, just a few organization did that in their environment. Time deliverable and supporting service after going live, probably are the main reason why many organization decided to adopt the ERP system as an external development rather than developing in house application.

So then, the main issue on this external development paradigm is not about building the packages, but it refers to adopting it into the organization. Is there any correlation between the adoption methodology and the success of ERP system implementation?

This paper is discussing ERP implementation methodology or kind of framework on adoption ERP system to the organization. Framework itself can be defined as “A structure for supporting or enclosing something else, especially a skeletal support used as the basis for something being constructed. An external work platform; a scaffold; A fundamental structure, as for a written work; A set of assumptions, concepts, values, and practices that constitutes a way of viewing reality”. The paper contains a review of two different perspectives, one is vendor perspective and the other is generic perspective. We are comparing two ERP implementation methodologies with certain metrics measurements and see how is the different between vendor provided methodology and generic methodology.

2. ERP IMPLEMENTATION METHODOLOGY

ERP implementation methodology has similar factors with software development life cycle or framework on developing software. However, the main difference is, in the ERP implementation methodology, we do not talk about how to develop ERP system. We are mainly discussing how the way to adopt ERP system with the organization rather than collecting requirements to build the suitable application, main activity when implementing ERP system is matching the organizational business process with the ERP system business process.

This paper review discusses two different perspective of ERP implementation methodology. One is vendor perspective methodology represented by Accelerated SAP [4], another one is generic methodology represented by Multi-factor Enterprise System methodology that published by Dantes & Hasibuan [5].

3. METHODOLOGY ASSESSMENT

This paper review used the metrics measurements. Sessions provide 12 criteria with 4 ratings in each criteria. The ratings are very poor (1), inadequate (2), acceptable (3), and very good (4). Sessions criteria is quite relevant being easy way to choose whether the organization have to adopt complete ERP system, or just having several implemented (from one vendors), or combined packages from more than one vendors as the result from the evaluation. The 12 criteria used (just) to assess new ERP implementation methodology with existed vendor perspective one by criteria as follows:

a. Taxonomy completeness
b. Process completeness
c. Reference-model guidance
d. Practice guidance
e. Maturity model
f. Business focus
g. Governance guidance
h. Partitioning guidance
i. Prescriptive catalog
j. Vendor neutrality
k. Information availability
l. Time to value

4. ACCELERATED SAP

Accelerated SAP (ASAP) provide step by step guidance on implementing SAP on the company. One of the main point from the ASAP, business process re-engineering is the best practice on adopting SAP into the company.
The phases of ASAP (can be seen on the figure 1) are divided into 5, here is the explanation of the phases with direct quotation with some additional explanation from [4] and [9]:

a. Project Preparation
b. Business Blueprint
c. Realization
d. Final Preparation
e. Go Live & Support

5. DANTES & HASIBUAN METHODOLOGY

Dantes & Hasibuan began their research on ERP by finding key success factors (KSFs) on ERP implementation [2]. Then, they held quantitative experiment by observing some company in Indonesia related to their ERP implementation on their companies [10][11][12].

The proposed of new methodology begin with publication of [13] and [14]. Basically, this new methodology has not been widely used by the professional, but evaluation procedures can be done due to the complete documentation and characteristics as an ERP implementation methodology. Dantes & Hasibuan methodology focused on 5 aspects that become the subject of ERP implementation system. The phases that construct the whole methodology are divided into 5:

a. Project Preparation
b. Technology Selection
c. Project Formulation
d. Implementation & Development
e. Post Implementation

6. HEAD TO HEAD ASAP vs DANTES & HASIBUAN METHODOLOGY

Review on two methodologies above is complete enough to explain the detail of each methodology. The visualization can be seen in Table I.

| Criteria | Accelerated SAP | Dantes & Hasibuan Methodology |
|----------|-----------------|-----------------------------|
| Taxonomy completeness | 1 | 4 |

Taxonomy: “The classification of organisms in an ordered system that indicates natural relationships; the science, laws, or principles of classification; systematic; Division into ordered groups or categories” [15]. So, taxonomy is another term for classification or categorization. Dantes & Hasibuan methodology classify focus area into five aspects (1) organization & people, (2) process, (3) application, (4) data, and (5) infrastructure meanwhile ASAP didn’t explain focus area in direct way.

| Criteria | Accelerated SAP | Dantes & Hasibuan Methodology |
|----------|-----------------|-----------------------------|
| Process completeness | 4 | 3 |
| Reference-model | 1 | 1 |
| Practice guidance | 4 | 3 |
| Maturity model | 2 | 4 |
| Business focus | 4 | 2 |
| Governance guidance | 2 | 2 |
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| Table IX | Session’s Performance Metrics on Partitioning |
|----------|-----------------------------------------------|
| Criteria | Guidance                                      |
|          | Accelerated SAP | Dantes & Hasibuan Methodology |
| Partitioning guidance | 4 | 2 |

| Table X | Session’s Performance Metrics on Prescriptive Catalog |
|----------|-------------------------------------------------------|
| Criteria | Accelerated SAP | Dantes & Hasibuan Methodology |
| Prescriptive catalog | 4 | 3 |

| Table XI | Session’s Performance Metrics on Vendor Neutrality |
|----------|---------------------------------------------------|
| Criteria | Accelerated SAP | Dantes & Hasibuan Methodology |
| Vendor neutrality | 1 | 4 |

| Table XII | Session’s Performance Metrics on Information Availability |
|----------|------------------------------------------------------------|
| Criteria | Accelerated SAP | Dantes & Hasibuan Methodology |
| Information availability | 3 | 1 |

| Table XIII | Session’s Performance Metrics on Time to Value |
|-------------|-----------------------------------------------|
| Criteria | Accelerated SAP | Dantes & Hasibuan Methodology |
| Time to value | 4 | 3 |

7. CONCLUSION

The conclusion in this comparative study is the ASAP has slightly superior than Dantes & Hasibuan methodology. There are some aspects of metrics especially, taxonomy, maturity model, and vendor neutrality that ASAP is inferior compared to Dantes & Hasibuan methodology. However, ASAP is evolving and widely used by many organizations in the world. Dantes & Hasibuan methodology has very good theoretical background and research as if it is rated quite good, just slightly inferior than ASAP. More evolving this framework, and more wide its usage, the new generic framework will grow into robust ERP system implementation methodology.

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| Table I | Comparison of Accelerated SAP vs. Dantes & Hasbun Methodology on Structural Framework |
|---------|-------------------------------------------------------------------------------------|
|         | **Accelerated SAP** | **Dantes & Hasbun Methodology** |
|         | **Project Preparation** | **Project Preparation** |
|         | Initial project planning, scope and goal setting | Identification of organization maturity level |
|         | Implementation strategy | Defines clear goal & objective |
|         | Implementation sequence | Business process re-engineering |
|         | Team formation | Evaluation of IT |
|         | Project kick off | Analysis of existing IS/IT |
|         | Analysis of Lead Technology | |
|         | **Business Blueprint** | **Technology Selection** |
|         | Refining goals and objectives | Determination of Project Team Composition |
|         | Requirement gathering | Determination of Steering Committee |
|         | As-Is and To-Be documentation | Selection of Consultant |
|         | Gaps analysis | Defines Project Scope & Schedule |
|         | Documentation | Determination of ERP Implementation Strategy |
|         | | Conduct Risk Management |
|         | | ERP Product Selection |
|         | | Database Product Selection |
|         | | Hardware Product Selection |
|         | **Realization** | **Project Formulation** |
|         | Business process requirement implementation based on defined blueprint | Define Job Description of Project Team |
|         | Baseline configuration and configuration | Functional Requirement Building |
|         | Integration configuration | Develop Implementation Plan |
|         | System management | Conduct Change Management |
|         | Final configuration and configuration | Identification of Legacy System |
|         | Development of program interface | (Retain, Replace) Identification of Database |
|         | | (Retain, Replace) |
|         | | Identification of Networks (Redesign, Replace) |
|         | **Final Preparation** | **Implementation & Development** |
|         | Unit testing | Project Monitoring |
|         | Integration testing | User Acceptance Test |
|         | User training | User Training |
|         | System management | ERP Customizing |
|         | Cutover | Software Change |
|         | | Reporting |
|         | | Integration with Legacy System |
|         | | Functional Testing |
|         | | Online Support Services with ERP Vendors |
|         | | Data Analysis & Migration |
|         | | Data Test |
|         | | Hardware Installation |
|         | | Hardware Testing |
|         | | Hardware Vendor Support |
|         | **Go-Live & Support** | **Post-Implementation** |
|         | Migration to production environment | Top Management Decision for Go Live |
|         | Support | Evaluation & Audit System |
|         | Monitoring | Monitoring Application |
|         | Performance optimization | Refine Bug (if any) |
|         | | Update Patches (if any) |
|         | | Upgrade ERP Version (if any) |
|         | | Monitoring Database |
|         | | Refine Database (if any) |
|         | | Monitoring Performance Hardware & Network |
|         | | Improve Performance Hardware & Network (if any) |