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PENGABDIAN KEPADA MASYARAKAT

INSTITUT TEKNOLOGI BANDUNG - 2014

The Development of Model on ERP Post-implementation Management

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Background for ERP Post- implementation Study

- Competition has forced companies to improve their performance by redesigning their processes and support the business process with IT systems.
- ERP systems, as an integrated systems, help companies to streamline their processes and improve decision making through the availability of transaction data from all parts of the company.
- Despite the wide use of ERP systems, there is extensive evidence (Botta-Genoulaz and Millet, 2005; Govindaraju, 2002) that most companies fail in getting benefits from ERP implementations.

Defining ERP

IS application that integrates information and information-based processes within and across functional areas" (adapted from Kumar and Hillegersberg, 2000, p. 23).

ERP systems support the organisations to manage their resources across the enterprise and enable integration of many different business functions (Davenport, 1998).

ERP systems

- ERP system is the backbone of e-business solution implemented in an organization.
- Currently, there are many e-business application developed and implemented: ERP (e-business the backbone), Supply Chain Management (SCM), Customer Relationship Management (CRM), Manufacturing Execution Systems (MES), Business Intelligence (BI), etc.

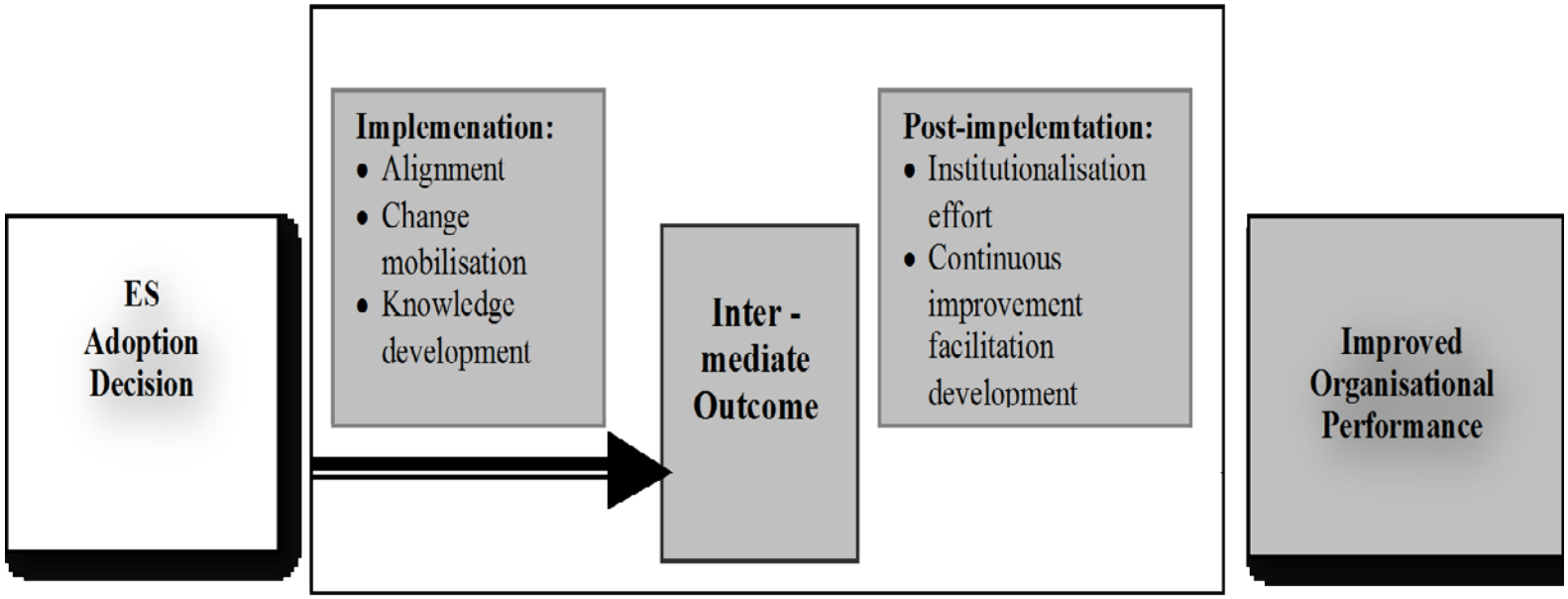
Defining ERP

- ERP is an updated manufacturing resource planning system (MRP II) with relational database management, GUI, and client/ server architecture.
- An Enterprise Resource Planning (ERP) system is a generic term for an integrated enterprise computing system.
- Enterprise computing systems are cross functional systems that provide a variety of functions at different levels of the organization.
- ERP system is a set of integrated business applications, or modules, used to carry out the most common business functions, including inventory control, accounting, MRP, etc.

Defining ERP Implementation

- ERP implementation is often used as a term to describe **a well-defined project** consisting of several activities including software selection, configuration and the training until going live preparation.
- The project is finished when the system is becoming operational.
- ERP project or implementation is often considered as a strategic project because it often involves **not only changes in technical systems, but also a lot of changes in organizational processes and structures.**

ERP implementation and post-implementation stage



Background for ERP Post- implementation Study

- Despite the wide use of ERP systems, there is extensive evidence (Botta-Genoulaz and Millet, 2005; Govindaraju, 2002) that most companies fail in getting benefits from ERP implementations.
- In reality, success is achieved when organisation is able to better perform all its business processes and when the integrated information systems can support the performance development of the company.
- Therefore the optimisation (or efficient use) of such information systems is becoming a major issue for firms striving their performance objectives (Botta-Genoulaz and Millet, 2005).

Research Problem

- Though “optimisation of ERP usage” in the post-implementation stage is very important for the implementing companies, prior studies on ERP implementation mainly focus on ERP **implementation** project. Little works had been done on ERP post-implementation or usage stage.
- Though a few studies highlighted the importance of improvement (optimisation) effort during post-project stage of ERP implementation (Botta-Genoulaz and Millet, 2005; Govindaraju, 2005), there found very limitted knowledge on how to manage the processes.

Research Question

- Considering this literature gap, the central problem addressed in this proposal can be formulated as follows:"

  "What kind of problems happen during ERP post-implementation (usage) stage?

  What actions should be done to optimise the ERP usage in order to realise benefits from ERP implementation?

Research objective

- To identify major problems faced by the implementing companies during the post-project stage that inhibit the benefits from ERP to be achieved
- To investigate how the problems can be managed during the usage (post-project) stage.

Research methodology

- Literature study to collect information about the results of earlier studies on ERP usage support
- Defining a case study protocol
- Execute an exploratory case study in a ERP implementing company
- Analyzing the case study results and proposing a taxonomy of ERP usage problems

Exploratory framework (based on literature study)

Category of problems	Alerts	Actions
Technical	Alerts related to master data and software application (interface, parameter setting, etc.)	Actions taken to solve the technical (data and application related) problems
Organizational	Alerts related to the organizational processes for a better integration between functions and better support for the business processes; organizational performance, organizational structure.	Actions taken to solve the organizational (processes, procedures, and structure) problems
Strategic	Alerts related to company strategy in response to the need for changes inside and outside the company.	Actions taken to solve the strategic problems

Case Companies

- TelCo is a state-owned company providing domestic telecommunication services. The case study was executed in DIVRE IV which is a Regional Division implementing SAP R-3 system.

- PT A, a flexible packaging company located in Jakarta which implement ERP from Orlansoft which consists of logistics and manufacturing modules.

- A steel manufacturing company implementing SAP in Production Planning, Material Management, Quality Management, Sales and Distribution, Financial and Controlling.

Case Study Results

Category	Alerts	Actions
Technical	• Numerous technical data errors • Messages from ERP are not relevant (stock shortages, rescheduling in/out MRP, purchase proposals to the agents) • Numerous manual inventory corrections • Data and information are not sufficiently used by users due to difficulties in understanding the value • Information is not efficiently and effectively distributed to users • Information is not used as a basis for decision making	• Cleaning of the migrated data • Maintain a business project team with a plan of action to realign master-data • Define responsibility for data • Assert the uniqueness of the data in the whole company • Realign master data and application parameter • Rearrangement of the way data and information being displayed • Realign roles and qualification of users (employees)
Organizational	• Best practices are not yet implemented • Contradictions between local and global indicators • Conflicts between services/processes and procedures • The procedures are too complicated • Data is not entered to the systems due to high operational workload • Key performance indicators (KPI) are not monitored	• Rearrangement and optimisation of the supply chain • Revise business rules in the company • Verify the appropriateness of the tool (decision models) to the organisation • Recheck and define better performance indicators • Define responsibility for processes and performance target • Rethink the roles to simplify the procedures • Realign roles, job and workload
Strategic	• Changes of markets, of customer expectations • Changes in the way company operates (example, from make to order into ATP (available-to-promised) or CTP (capable-to-promised) • Collaboration with external partners • Support for strategic decision making	• Reengineering the company and make changes in IT architevture • External integration: B to B • Business Process Management (modelling, process performance measure) • Develop business Intelligence: departmental BI and cross-departmental BI

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Analysis of Results

Based on the case study results we propose a classification of ERP optimization that consists **of four categories of optimization**:

- ***Technical optimization***: focus of the data and technical application environment
  - Realign master data
  - Cleaning of migrated data
  - Rearrange the way data or information is displayed in the workplace

- ***Organizational process optimization***: focus on the organizational processes for a better integration between functions and better support for the business processes:
  - Aligning new ERP processes and organizational procedures
  - Aligning the process attributes/parameters in order to support the business processes properly

Analysis of Results

Based on the case study results we propose a classification of ERP optimization that consists of four categories of optimization:

- ***Structural optimization***: focus on the way organizational structures and jobs are aligned to the ERP systems
  - Aligning roles with employee qualification (such analytical ability for decision making based on data and business intelligence purpose,)
  - Aligning roles, job and work load for users on operational level

- ***Strategy optimization***: focus on company strategy in response to changes inside and outside the company.
  - Implement Business Intelligence (BI)
  - Reengineering the company and change IT architecture

Analysis of Results

Conditions that may support a good ERP post-implementation management:

•**Centrally-decentralized IT organization** structure with IT specialist representation assigned in user departments can be used for facilitating **IT-business collaboration** during the stabilization and enhancement stages.

•To facilitate the necessary improvement efforts to take place during the post-implementation stage, it is important to assign some of **key users and the representation of T organization** in an ERP adhoc support group or a more permanent ERP support structure → "**Competence Center**".

Analysis of Results

Competence center may give the following supports:

- Provide **linking mechanisms between the IT function and business** units
- Manage the increased levels of organizational stability and **enable better business insight and collaboration**
- Improve the operational **performance of business units**
- Support Enterprise's **business intelligence (BI) strategy**
- Facilitate interaction with the firm's core activities and contribute to the development of **collective intelligence (not only departmental BI).**

Conclusion

- In this study, **different types of ERP problems had been identified and four type of ERP optimization process had been defined**: Technical Optimization, Organizational Process Optimization, Structural Optimization, Strategy Optimization.

- A number of **facilitating conditions for a smooth ERP post-implementation** management were recommended.

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