# Challenge of Integration Manager Implement for Enterprise Systems

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*Abstract* —The organizations acquire disparate Enterprise Systems in internal business. The effort to integrate Enterprise Systems with deferent is needed for help improving organization performance. The goal organizations are enhance the operational achieve more efficiency and effective. The fact is many organizations still need more time for managing information systems to support decision making for management. This is the challenges to be improving the capacity of Enterprise Systems. The study aims to measurement of integration manager implement for enhance capacity of Enterprise Systems.

*Keywords*—*Measurement; Enterprise Systems; Integration Manager*

## I. INTRODUCTION

Information systems have evolved in achieving work effectiveness and work efficiency in the industry as reasons for consideration. One tool that can be used to support business processes and enterprise systems functions is to use Integration Manager. Integration Manager is a data-processing tool into information in Enterprise Systems. Integration Manager has a matrix that enhances Enterprise Systems performance for planning to be more functional, plotting an emphasis on improving the company's overall business. Integration Manager through Enterprise Systems implementation, some functional integration managers contained in master data and transaction data operations is a pillar of the availability of reports to plan accurately and quickly, so that existing resources can switch to control in accordance with the role and function, but the role of manager in managing the results of reports from enterprise application systems still have no more impact in increasing business opportunities in the company. The measurement of integration manager provides positive points generated from the enterprise application reports on the environment nearby. The balanced scorecard approach is expected to provide changes that occur in the application of enterprise systems. This study was to answer the research questions:
What are the challenges of integration manager implement for enterprise systems?

## II. THEORITICAL BACKGROUND

### 2.1 Data sets

The business process is for any organization with business data managed by information systemst [1]. As well as in manufacturing companies at this stage are using applications that interlock and mutual inter department will be analyzed department that has been passed the business objectives achieved. The complexity of industrial applications continues to increase, as: data increases exponentially. There is needed to integrate Online Analytical Processing, discovery of knowledge, multiple data mining functions, data sources to make supporting decisions, information and other business needs [15; 17]. Special middleware applications, such as: data mining middle ware can be more developed. The Company's system has an impact that increases the chance of results. We focus on internal business processes to focus enhance the system better. This prediction of findings that occur with the use of Enterprise Systems will be tailored to the category of SWOT analysis and TOWS Matrix [3]. Integrating various industry system is an ongoing task for industrial companies experiencing new technologies and embedded devices [12].

### 2.2 Sequence process procedure

The measurement method is efficiently sequenced by two steps, the information in the reference journal and the interview with the group discussion forum method [4] is then performed with balanced scorecard approaches. As a recommendation reference and development and analysis of action with SWOT analysis [5]. In the first step, collect the Enterprise Systems Substitution references with the integration manager, a reference that is managed and compared to make a summary of the impact of the other two steps is a discussion forum among fellow employees to discuss the questionnaire results because of the findings that there must be a change in the decision to support the development and action, balanced scorecard approaches make the measurement more objective because it is divided into 4 sections which become the basic subject of discussion, then SWOT analysis is divided into 4 matrices [6] then it is in a position to know that it is now and will happen in every

decision.

2.3 Integration Manager

Business Process Reengineering (BPR) is one part of organizational business process change in Enterprise Systems that implements integration manager [7]. The changes in business process systems, then how to work instead of using the current user is replaced with the integration manager [8]. And a user key functions become more effective, efficient to focus on training [9]. Therefore, It need understand about Enterprise Application Integration. EAI approaches show in Table 1.

TABLE I. EXPLANATION OF CAPABILITIES AND DEFICIENCIES OF ENTERPRISE APPLICATION INTEGRATION [11]

| Integration Approach | Strength | Weakness |
|---|---|---|
| **Master** Information data between another data for information | Simple to run at low cost to determine data stability, Little change in applications to | Does not improvement |
| | prepare information in other departments | |
| **Object** Integrate data provided to all business units | Integrate data mining logic for distribute | Complex for setting enterprise system |
| **Process** Business process enterprise and IM system | Real time identification and business analysis Maximum process and quick adjustment for Evaluation process | Complex to architect Expensive to implement |
| **User Interface** Build each new system by conditioning it in every business | Easy to apply with minimum changes to available apps | Applications tailored to solid communication Difficult to maintain and Can not be shaped on actual activity |
| **Application Interface** explain the interface to share functional information | Calling enterprise applications | every department Displays information for various business functionalities |

TABLE II. IS STAKEHOLDERS, CONCERNS, INFLUENCES, AND NEEDED RESOURCES [13]

| Stakeholder | IS Concerns | Influences | Metrics | Needed Resources |
|---|---|---|---|---|
| Project Manager | Cost and schedule for performing IS | Input : Systems customer Output : Funding priorities | Earned Value, schedule | Funding |
| Systems project Engineer | Performance, behaviors, operability, physical, electrical restrictions, and functionality of integrated Systems | Input : Project Manager Output : Subsystems engineering priorities and allocation | Requirement satisfaction, performance parameters | Customer use cases, functioning Systems (subsystems), tested interfaces |
| Mission Assurance | Safety, reliability, contamination, physical stress tolerance of integrated Systems | Input : Customers environment Output : Component selection, EMI/EMC, grounding, personnel and equipment safety, test requirements | Temperature range, total dose, shock/vibe, FMECas & FTAs, EMI/EMC susceptibility | Thermal analyses, shock and vibe test results, reliability test results |
| Validation and verification | Assurance that integrated Systems meets user needs (Validation) and that the Systems is correctly designed and meets requirements (verification) | Input :Mission goals and formal requirements Output : test definition, test execution and result certification | Performance characteristics, measure of test completion | Integrates Systems, test equipment, test software |
| Subsystems Engineer | Ensure subsystems interfaces works with other subsystems and human roles | Input : Systems constraints and performance requirements Output : Compliant design | Physical variables in range, satisfy performance requirements | Subsystems test workbench, test software, MCAD tools |
| Software Engineer | Ensure software interfaces with hardware and human roles | Input : Hardware and human constraints Output :Complaint design | Software behavior is predictable | Software development and test environment |

2.4 The measurement of enterprise systems performance

In order to enhance effectively link the organizational practices, such as: results, quality, values, and costs, Balanced Scorecard (BSC) is an integrated tool for measuring them as shown in Figure 1 below:
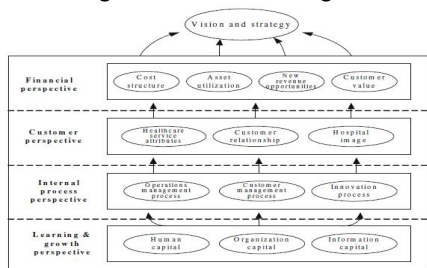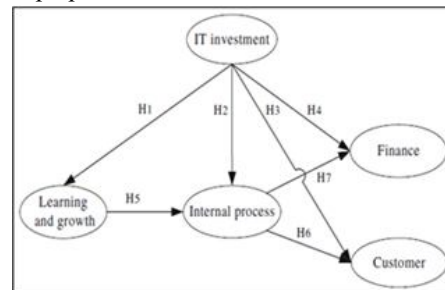


Fig. 1. The BSC Strategy Map (Adapted from Kaplan and Norton [32,34]

The results show new allegations with additional pathways added directly from the learning and Customer growth. That is, the original model, as shown in Figure 2, is proposed



As a full model with a direct link of learning and customer growth through an internal process mediator.

The management evaluation method is choice on a balanced scorecard with multiple attributes. It considers subjective and objective attributes [21]. Balanced scorecard (BSC) has a balanced value between financial and non-

financial forms and has been used in evaluating performance in the field of organization. In addition, in industrial business organizations often see their performance aimed at customer satisfaction in the competitive world of business. [19] Sampling method is an available method and researchers are asked to complete it, referring to the company and providing questionnaires. [20]

### 2.5 Sustainability Balanced Scorecard

Props are focused on the initial scaling of Balance scorecards, it is important to integrate sustainability into BSC logic. The company's sustainability has been defined as a triple bottom line (TBL), in enterprise practice, sustainability is only advanced in certain "most important" (ie strategic) aspects for the company under consideration [22].

### 2.6 integration manager with customers and products

The planning strategy has a very tight focus on the level of management, but the value of the strategy is made when the product grows and is produced for sale to the consumer, so the other side of interest is the impact of managerial level or the employee who runs the strategy activity every day and the balance scorecard occurs as Tools that guide in their work [23].

### III. RESEARCH METHOD

#### 3.1 Data Collection Data Internal Master

In a sample with the operational master data and transaction, where data had been integrate manager. Then the data had been mapped into template integration manager who had been adjusted to the columns and rows needed. Object: Internal master data and transactions that occurred in current period in the application Systems Enterprise Systems were implemented in Argo Manunggal Group.

TABLE III.    DATA SAMPLE MASTER CUSTOMER

| Class ID | Customer ID | Customer Name | Address ID | Address code | Accounts Receivables | Sales |
|---|---|---|---|---|---|---|
| KE | 31503 | X1 | HO | A1 | 11310100-UMM-TEX-APT | 41101002-UMM-TEX-APT |
| KE | 10978 | X2 | HO | A2 | 11310100-UMM-TEX-APT | 41101002-UMM-TEX-APT |
| KE | 45797 | X3 | HO | A3 | 11310100-UMM-TEX-APT | 41101002-UMM-TEX-APT |
| KE | 13569 | X4 | HO | A4 | 11310100-UMM-TEX-APT | 41101002-UMM-TEX-APT |
| KE | 76543 | X5 | HO | A5 | 11310100-UMM-TEX-APT | 41101002-UMM-TEX-APT |

TABLE IV.    DATA SAMPLE MASTER SUPPLIER

| Class ID | Supplier ID | Supplier Name | Address ID | Address column | Accounts Payable | Purchase |
|---|---|---|---|---|---|---|
| GNR | T9530 | Y1 | HO | B1 | 21220000-UMM-TEX-APT | 11510800-UMM-TEX-APT |
| GNR | T9531 | Y2 | HO | B2 | 21220000-UMM-TEX-APT | 11510800-UMM-TEX-APT |
| GNR | T9532 | Y3 | HO | B3 | 21220000-UMM-TEX-APT | 11510800-UMM-TEX-APT |

TABLE V.    DATA SAMPLE TRANSACTION SALES

| Document no | date acct | Term code | bpartner | sales | opno | Scno | Curr | Tax | Totalamt | Taxamt | Grandtotal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0144/FD/15 | 09/15/2015 | T30 | EA065 | R04 | O1 | 2015/09/0203 | USD | N | 950495 | 0 | 950495 |
| 0145/FD/15 | 09/15/2015 | T30 | EA065 | R04 | O2 | 2015/09/0204 | USD | N | 7504953 | 0 | 7504953 |
| 0146/FD/15 | 09/15/2015 | T30 | EA065 | R04 | O3 | 2015/09/0205 | USD | N | 6504953 | 0 | 6504953 |

### Process

In the focus integrate manager process is symbolized in the reading master data in template to view table and column that exists in integrate manager system, where those links when it is run it will automatically distribute data from the contents of the template is then passed directly into the database so that the stored data as input in the Systems entry application enterprise. Mobile integration manager and specification implementation:

1. Using primary key in each template to integrate data
2. Mapping new column that can be varied.
3. Mapping the primary key with key destination data accuracy
4. Run and the process will happen automatically
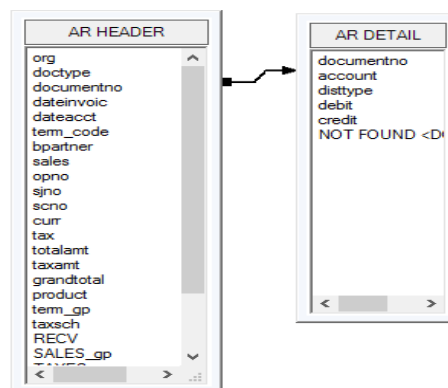


#### 3.2 data integration manager and template upload in action performance.

Data with linked to integration system form of rows and columns that have been mapped to the help of the

Enterprise Application that has been applied. Mapping component enhance integration system is shown in Table 6,

| Integration description | Module | | | | |
|---|---|---|---|---|---|
| | Financial | Sales | Purchase | Inventory | Production |
| Master | √ | √ | √ | √ | √ |
| Transaction | √ | √ | √ | √ | |
| Proses | | | | | |
| Report | | | | | |

Integration manager maintaining enterprise security Systems, then some studies that help to be controlled and can be automatic maximized key value of how the enterprise user. Several modules can be maximized way of working with Systems integration manager is expected to assist in the rule of an integrated security Systems that is fixed.

3.3 Quick information related to customer needs and mobile report

With the integration of managers then the results of the reports required by customers will greatly help provide Customer relationship, so that the customer trust more good. can be explained in the table below :
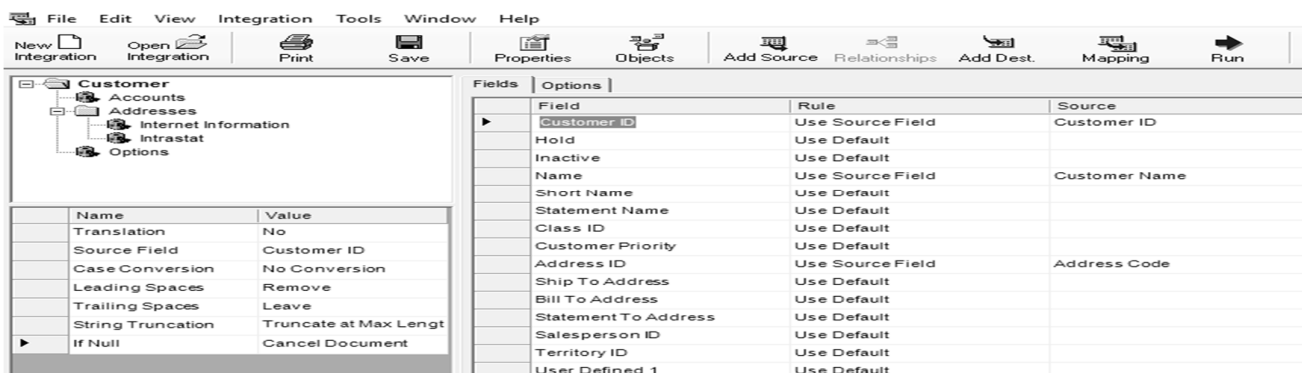
| Customer Perspective | Scale | | | |
|---|---|---|---|---|
| | Very satisfied | satisfied | Less Satisfied | Very Less Satisfied |
| Data | 9 | 1 | 0 | 0 |
| Similarity Information | 9 | 1 | 0 | 0 |
| Actual Report | 9 | 1 | 0 | 0 |
| Repeat Order | 8 | 2 | 0 | 9 |
| Total | 35 | 5 | 0 | 0 |

## IV. RESULT AND DISCUSSION

4.1 Achieving Results Integration Manager and Customer Perspective

Based on the data in the using of integration manager at current system by Enterprise Systems, users is able to bridge the user key Enterprise Systems, there are several integration to many menus in the enterprise systems. With the start of the many data that is not in though later on, create a template that is capable adjusted to the needs of key user, security mapping process the data as needed, these results are forwarded to the process of integration manager so that data is ready in the enterprise system.



Fig. 4.   Integration Manager Enterprise System

TABLE VIII.    MEASURES OF CUSTOMER PERSPECTIVE

| Measures | Findings | Development / Repair |
|---|---|---|
| Customer Perspective | | |
| % of Customer Repeat Order | Repetition of orders occurred within the last few months. | Preparing activities becomes more focused on customer relationships so that the order preparation process becomes more mature and reduces the error rate |
| % of Return Order | The occurrence of errors in orders due to the production process in the machine | Checks can become more focused in the production process on each machine |
| % of Analysis revenue | Increased marketing planning in marketing | With actual and fast data, innovation power in every marketing becomes more dominant and more often presented for the proposed |

TABLE IX.    MEASURES OF FINANCIAL PERSPECTIVE

| Measures | Findings | Development / Repair |
|---|---|---|
| Financial Perspective | | |
| % of administration Cost | ATK cost (paper and ink) usage information is reduced | Prepare activities to be more focused on cash out planning for supplier payouts |
| % of Cash Flow Report | Reporting Time Cash Flow Report is faster than ever | The rest of the time can be used for analysis and entry money planning |
| % of Management Report | Regular reporting within the next 10 months | Reports can be presented and made a decision by management |

TABLE X. MEASURES OF INTERNAL PROSES PERSPECTIVE

| Measures | Findings | Development / Repair |
|---|---|---|
| *Internal Proses Perspective* | | |
| *% of Current Document* | The number of documents becomes more and more accurate. | Documents that operate internally in accuracy and precisely so that information becomes 1 source |
| *% of sharing Knowledge* | The occurrence of training and discussion in solving problem solving | Held a discussion group forum for the development and recording of each problem that occurred |
| *% of Internal Training* | This means that business-related training processes, systems and procedures for its use | Routine activities and continue to be developed, resulting in efficiency and effective in work operations |

4.2 Challenges of Integration Manager for enterprise system

The performance system with using integration manager to efficiency and services criteria analysis shown the integration manager enhance Enterprise Systems with affordable price with to be concluded Enterprise Systems integration. In the description internal data and transaction, there is a point that dominant changes the behavior of the Systems Enterprise in the company, with the integration manager tools More challenges operational in accuracy, information and data more stable, fast, accurate and reduces the workings of key user related operational data, the scale can get 100% challenges in performance on an Enterprise resource planning Systems. With Example number of documents generated 100% more with integration System.

TABLE XI. PROCESS LIKERT SCALE INTEGRATION MANAGER SYSTEMS

| Integration description | Scale | | | |
|---|---|---|---|---|
| | More Challenge | Challenge | Less Challenge | Very Less Challenge |
| Master | 10 | 0 | 0 | 0 |
| Transaction | 7 | 2 | 1 | 0 |
| Proses | 1 | 2 | 7 | 0 |
| Report | 8 | 1 | 1 | 0 |
| Total | 26 | 5 | 9 | 0 |

Challenge

In point Likert scale are already able to represent an increase in points More Increase, because the role of Systems integration manager is acting as tools that increase the benefits of these tools are in the range of successful More Increase or so does not increase. In this point is not too obtrusive

Less Challenge

Within the scope of integration is seen a description of the process, because the process is not so visible role of key user so that the user does not make the point so respect this process and less visible direct integration manager role.

Very Less Increase

This point shows an increase of very poor description improving the integration report, because the report is a result produced by the enterprise resource planning Systems. Integration Manager with Measurement of Balance Scorecard Approach

IT Supply Management and IT Development Management can be concluded that the need to involve people actively with the enterprise system is to determine the implementation of successful enterprise systems. In addition.

The need for enterprise systems is able to improve competitiveness in the business world.

TABLE XII. TABLE INTEGRATION WITH THE RELATIONSHIP EFFICIENCY WORKING TIME WITH BALANCE SCORECARD APPROACH

| Integration description | Scale | | | |
|---|---|---|---|---|
| | High Efficient | efficient | Less Efficient | Very Less Efficient |
| User | 9 | 1 | 0 | 0 |
| Key User | 9 | 1 | 0 | 0 |
| Manager | 7 | 3 | 0 | 0 |
| Management | 9 | 1 | 0 | 9 |
| Total | 34 | 6 | 0 | 0 |

User and key user

By implementing integration manager, data maintained by the user can more quickly enter the Enterprise Systems with an accuracy of internal data with enterprise applications accordingly.

Manager

Withdrawal of reports and report processing in planning strategies in each department more quickly informed and submitted to the management to be carried out of decisions and actions as the basis for the exercise of the new planning.

Management

Integration manager needs to be developed and more intensive attention to raise more efficiency now running. Because of the performance impact and change the way work is expected to increase user confidence in running applications and using enterprise applications resource planning as the internal user data for a long time.

TABLE XIII. TOWS MATRIX INTEGRATION MANAGER CHALLENGES

| | Internal Strentgh : | Internal Weakness : |
|---|---|---|
| External Opportunit ies : | SO<br>1. Able to an increase in the number of orders.<br>2. All orders will be achieved through the delivery process in application<br>3. E-Faktur can be directly run with integrate upload | WO<br>1. Prepared for the implementation integrate of the investment planning production Systems<br>2. Prepared to be eliminated the old Systems.<br>3. Find for the dashboard integrate Systems |
| External Threats : | ST<br>1. Perform additional qualified staff in the field of IT mindset | WT<br>1. Doing Business Process Reengenering (BPR) |

Keep holding advanced research at manufacture company related modules of Enterprise Systems and the expansion of other components of the measurement using the method of SWOT Analysis and TOWS Matrix so companies can see the results of measurement of information system value of existing Enterprise Systems more thoroughly.

## 4.3 The limitations

This study only informed the integration of technology managers and the measurement of the balanced scorecard approach in integrating managers to enterprise systems based on Argo Manunggal Group case studies with manufacturing organizations. The authors are also aware of not including the discussion of the manager of the integration of detailed management reports by linking to the four approaches of the balanced scorecard, limiting the restrictions on user key performance that are still limited in the scope of operation, and phase analysis is still necessary.

## V. CONCLUSION AND FUTURE RESEARCH

Enterprise systems are increasingly in place, major improvements found in integration managers that develop system integration capabilities that help improve the performance of key business processes. Technology develops corporate system management challenges in receiving more accurate information and is able to provide the best decisions in strategic business planning, business competition becomes more focused on it. Thus, we have concluded that the measurement of integrate manager implement with balanced scorecard as a key component of knowledge management in order to improving the organization performance. The future work can consider for measurement study cases specific industries by IT balanced scorecard as further research.

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