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Enhance capability of Enterprise Systems using Integration Manager

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Abstract - Many organization acquire disparate Enterprise Systems in operational. The effort to integrate different Enterprise Systems is needed for satisfying business requirements and agile organization. The agile organization is one of the operational strategies for achieve work efficiency. The fact is many organization still need more time for managing information to support decision making for management. This is the challenges and issues that need to be enhance capacity of Enterprise Systems. This study aims to identify key technologies using integration manager for enhance capacity of Enterprise Systems.

Keywords: Performance, Enterprise Systems, Integration Manager Module.

I. INTRODUCTION

Information Systems has been progressing in achieving work effectiveness and work efficiency in the industrial world as a reason for consideration. The one of tools that can be used to support business processes and functions of Enterprise Systems is using Integration Manager. Integration Manager is a tool processing the data into information in the Enterprise Systems. Integration Manager has a matrix which improves the performance of Enterprise Systems for planning to become more functional, planning emphasis on improving the overall enterprise business. Integration Manager through the implementation of Enterprise Systems, some functional integrate manager contained in the master data and transaction data operations are cornerstones of the availability of the report to plan accurately and quickly, so that existing resources can switch to controlling in accordance with the role and function, however the role integrate manager gives impact for increase application integration and change the way of working to become more optimal so it was decided to build a development Enterprise Systems.

The purposes of this study were to serve three goals. First, was to identify some key technologies for Enterprise Systems. Second, was to find the definition of all key components. Third, the study would give information about the challenges for Integration Manager. This study was to answer the research questions:

- What are key technologies for Enterprise Systems?
- What are challenges for Integration Manager?

II. THEORITICAL BACKGROUND

2.1 Data sets

Business process is an absolute obligation must exist in every organization with managed business data later as management information Systems [1]. as well as in manufacturing companies in this stage is developing and using an integrated application which processes is interrelated and each department will be analysis each department is delivered to the business objectives achieve. The size and complexity of industrial applications continue to grow, such as: the amount of data increase exponentially. There is increasing need to integrate OLAP (Online Analytical Processing), knowledge discovery, data mining functions and data sources for decision support, information integration and other business needs [15; 17]. Application specific middleware, such as: data mining middleware will be increasingly developed and deployed for industrial information Systems integration. Enterprise Systems have impact enhanced revenue opportunities and increase the market can be described the results of action and decision handed down by a focus based on the Systems [2]. We focus on internal business processes to see the parts of the systems that is better than the using a integrate manager. This prediction about the findings that occur with the use of Enterprise Systems which will be adjusted in the category of the SWOT analysis and TOWS Matrix [3]. Integrating of various industry applications are an ongoing task for industry enterprises that are adopting new technologies and embedded devices [12]. Some new trends in this area include: As web services, SOA and ESA are being increasingly applied to complex integration tasks that involve both existing and legacy applications, there is an increased need to ensure Quality of Service (QoS) in the integration process [14].

2.2 Sequence process procedure

Methods of measurement are sorted efficiently done by two steps, information on the reference journal and interviews with the method group discussion forum [4]. as a reference recommendations and action development and analysis with SWOT analysis [5]. In the first step, the collect references Enterprise Systems Substitution with a integration manager, any reference managed and compared to make a summary of the effects other second step is the discussion forum among fellow employees to discuss the results of the questionnaire because of the findings that

there should be a change in the decision to back the development and action, then based on the SWOT analysis is split into 4 matrix [6] then be in a position to know that now exist and will happen in every decision.

2.3 Integration Manager Systems

Business Process Reengineering (BPR) is the changing of organizations business process by following business process of Enterprise Systems [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). EAI approaches is shown in Table 1.

Table 1. Overview of the strengths and weaknesses of Enterprise Application Integration (EAI) approaches [11]

Integration Approach	Strength	Weakness
Data Shares data between multiple data sources	Simple to implement Inexpensive to implement Consistent data Minimum changes to the source or target applications Provides access to wide range of data	Does not invoke business logic
Object Integrates objects distributed	Integrate business logic Reusable	Complex Difficult approach

throughout the enterprise		
Process Business process modeling and integration	Real time tracking and analysis of business process Dynamic process optimization and adjustment Process evaluation	Complex to architect Expensive to implement
User Interface Build new interface by re-mapping old interface	Easy to implement Requires minimum change to existing application	Tightly coupled application Synchronous communication Difficult to maintain Cannot scale Doesn't take place at actual interconnection
Application Interface Exposes an interface for sharing business functionality	Invokes application functionality	interface Exposes an interface for sharing business functionality Invokes application functionality Tightly coupled application Synchronous communication Require same API for both application

Table 2. SI Stakeholders, Concerns, Influences, and Needed Resources

Stakeholder	SI Concerns	Influences	Metrics	Needed Resources
Project Manager	Cost and schedule for performing SI	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
Electronics	Ensure electronics are "correct	Input :Subsystems constraints	Electronics satisfy	EDA tools

Engineer	by construction and compatible with subsystems requirements	Output : Complaint design	interconnection and thermal requirements	
Human Factors Engineer	Ensure that human interactions with subsystems are consistent, inspect able , with manageable cognitive load and acceptable error rates	Input :Interaction requirements, Human Systems integration (HSI) constraints Output : Manageable cognitive load, acceptable error rates	Human acceptance (usability, utility)	HIS tools, MMI prototyping tools

III.RESEARCH METHOD

template integration manager yang telah di sesuaikan pada baris dan kolom yang dibutuhkan.

3.1 Data Collection

Master Data

Dalam sample yang akan di ambil ini adalah data master dan transaksi operasional yang terjadi pada Argo Manunggal Group, dimana data akan di integrasikan pada integrasi manager. Kemudian data tersebut akan di mapping kedalam

Object

Master data dan transaksi yang terjadi dalam beberapa periode terakhir dalam penerapan Systems enterprise Systems yang di implementasikan di Argo Manunggal Group

Table 3. Data Master customer

Class ID	Custo mer ID	Customer Name	Address ID	Address code	Accounts Receivables	Sales
KL	3995	A&A SERVICES	HO	HOUSE # 353 (1ST FL), RO	11310100-UMM-TEX-APT-TGR	41101002-UMM-TEX-APT-TGR
KL	1097	DANDONG FOREMART GARMENT	HO	27, ZHEN YANG DONG STREET	11310100-UMM-TEX-APT-TGR	41101002-UMM-TEX-APT-TGR
KL	3591	A&A GARMENT, CV	HO	KAWASAN PANGKALAN TRUK	11310100-UMM-TEX-APT-TGR	41101002-UMM-TEX-APT-TGR
KL	5287	AAN CECEP	HO	JAKARTA	11310100-UMM-TEX-APT-TGR	41101002-UMM-TEX-APT-TGR
KL	4075	AB BLAKLADER	HO	BOX 124	11310100-UMM-TEX-APT-TGR	41101002-UMM-TEX-APT-TGR
KL	1214	ABADI	HO	JAKARTA	11310100-UMM-TEX-APT-TGR	41101002-UMM-TEX-APT-TGR

Table 4. Data master supplier

Class ID	Custo mer ID	Customer Name	Address ID	Address column	Accounts Payable	Purchase
GNR	T9530	ANEKA STAINLESS	HO		21220000-UMM-TEX-APT-TGR	11510800-UMM-TEX-APT-TGR
GNR	T9531	BINO MITRA SEJATI PT.	HO		21220000-UMM-TEX-APT-TGR	11510800-UMM-TEX-APT-TGR
GNR	T9532	GETMAXS REFILL CENTER	HO		21220000-UMM-TEX-APT-TGR	11510800-UMM-TEX-APT-TGR
GNR	T9533	DAIKIN APPLIED SOLUTION IND.	HO		21220000-UMM-TEX-APT-TGR	11510800-UMM-TEX-APT-TGR

Table 5. Data transaction sales

documentno	dateacct	term_code	bpartner	sales	opno	scno	curr	tax	totalamt	taxamt	grandtotal
0147/FDE/15	9/30/2015	T180	E00613	R03	2015/0282/E	2015/0033/E	USD	N	93214.57	0	93214.57
0150/FDE/15	9/30/2015	L001	E01751	R03	2015/0229/E	2015/0104/E	USD	N	27198.2	0	27198.2

Process

Dalam fungsi integrate manager proses ini dilambangkan dalam proses membaca template dengan melihat table dan column yang ada dalam tools integrate manager, dimana link tersebut ketika dijalankan maka akan otomatis mendistribusikan data dari isi template kemudian diteruskan langsung dalam database sehingga data tersimpan seperti menginput dalam Systems entry aplikasi enterprise yang digunakan.

Mobile integration manager and specification preparation :

- Menentukan primary key dalam setiap template dengan integrate manager
- Mapping column additional yang bisa bervariasi dengan variable yang sudah ditentukan
- Mapping destination primary key sebagai kunci akurasi data tanpa terjadi data sama disetiap integrate manager
- Jalankan dan proses akan terjadi secara otomatis

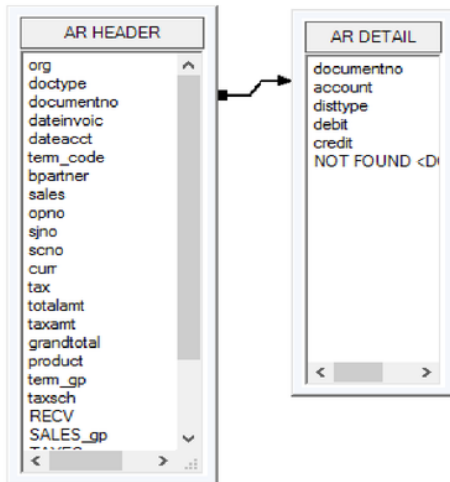


Figure 1. Literature process Integration manager

3.2 data integration manager and template upload in action performance.

Data can be linked to integration manager form of rows and columns that have been mapped to the needs of the Enterprise Systems that has been applied. Mapping component enhance integration manager is shown in Table 6

Table 6. Mapping Component enhance integration manager Systems

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

Module

In the integration manager maintaining enterprise security Systems, then there are some studies that need to be controlled and can be automatic maximized key function 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.

The kinds of operational supporting reports, in getting the types of transactions in table 2, and therefore the routine operations can be maximized key user with the integration manager is a master and transaction, so as to maximize the integration manager Systems then the performance of key user is able to grow from point others outside the operational activities such as controlling the process and the resulting report.

IV. RESULT AND DISCUSSION

1 This section is the summary and results of the study.

We discuss for the answers to research questions :

4.1 Achieving Results Integration Manager and Solutions Enhance Performance Enterprise Systems.

Based on the findings in the implementation of integration manager at live by Enterprise System, users of the system which now is able to bridge the user key system Enterprise, there are several integration to many menus in the enterprise system. 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. Improvement in Enterprise System becomes more real time and the actual integration process manager with this, so the Enterprise system capable in development and presented a report into the management through the mobile application and forwarded to system management dashboard.

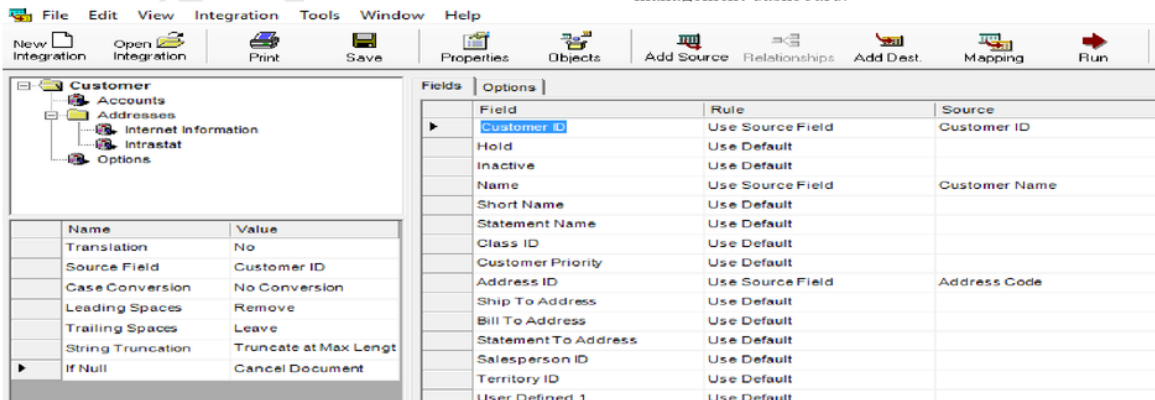


Figure 2. Integration Manager Enterprise System

4.2 Achievement of Current Integration Manager, Solutions System Enterprise and action performance.

TAMBAHKAN PENJELASAN! SEBELUM ADA TABLE

Table 7. Process likert scale integration manager Systems

More Increase

PIECES (Performance, Information, Economy, Control, Efficiency, and Services criteria analysis shown the integration manager enhance Enterprise Systems with affordable price with can be concluded Enterprise Systems integration [14]. In the description master and transaction, there is a point that dominant changes the behavior of the Systems Enterprise in the company, with the integration manager tools More Increase operational in accuracy, information and data more stable, fast, accurate and reduces the workings of key user related operational data, the scale can get 90% increase in performance on an Enterprise resource planning Systems.

Increase

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 Increase

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.

Table 8. Table Integration with the relationship Efficiency Working time

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. This raises the efficiency of time is much that can be allocated for controlling the data

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.

Based on the discussion in the previous chapter, it can be concluded with that derived by TOWS Matrix[10]:

Table 9. TOWS matrix integration manager challenges

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

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 advanced and COBIT so companies can see the results of measurement of information technology value of existing Enterprise Systems more thoroughly.

4.3 The limitations

This study only information the key technologies integrate manager and challenges integrate manager for enterprise systems based on case study Argo Manunggal Group for general organizations. Therefore, the researcher have understood that this study has the limitation of this current research, such as: the search

process was done manual for search journal and conference proceedings; the number of CSFs Issue COMPONENTS %

Frequency Management Management support & commitment 7% 15 Organizational Business Process Reengineering 7% 16 Software System ERP performance 7% 15 Users User training and education 4% 10 Technology Integrating 4% 8 databases has restricted access from journal or conference proceedings publication, no determine and analyze to size of the organizations.

V. CONCLUSION AND FUTURE RESEACRH

IT Supply Management and IT Development Management can be concluded that the needs to the involvement of people actively with the Enterprise Systems is to determine the successful Enterprise Systems implementation. The beside that the needs to develop Enterprise Systems. It helps executives make decisions and ultimately improve the synchronization of business strategy and can be optimized to integrate all data and information flow of business processes.

Kesimpulan gak nyambung, kesimpulan dengan pembahasan untuk menjawab research question ini:

- b. What are key technologies for Enterprise Systems?
- b. What are challenges for Integration Manager?

Thus, we have concluded that key component of knowledge management in order for enhance performance of Enterprise systems with survey and specific industry is necessary for future research.

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PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6
