Integration in Electronic Data Interchange For Environments E- CommerceApplication

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Electronic data is type of data access in the internet. Exchange of electronic data is properly utilized for a positive impact for business. Electronic Data Interchange (EDI) is applied business to promote and record all data products SMEs. Representational State Transfer (REST) is one of the most appropriate methods to implement EDI will exchange data from different servers in any promotional media owners of business. This research makes media online campaign on some business to register promotion of their products. EDI is used for the exchange of business information among partners electronically and regularly from one computer to another. EDI of data center system is able for solution when problems occur within each server e-commerce, which led Portal system cannot display in real-time (Optimistic) and sent data way of periodic data replication.

Keywords: Electronic data, business, e-commerce, REST, internet
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1. INTRODUCTION

Information technology is used to create, save, modify, and compete to enter the global market. Electronic commerce (e-commerce) is the process of trading products, services, and information over the Internet information network .Exacly, the customers are greatly increased because it allows customers away. Weakness business owners should update suddently the products, they are sold cheap and attractive to buy . The proposed solution which centralized online media campaign, while data is transferred in real-time into the e-commerce owned, they had been registered as a member. Approximation of electronic data exchange with the Internet had been known as Electronic Data Interchange (EDI). This method is able to send all kinds of information consisting of SMEs profile, product prices and reservations.

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EDI is applied to the cost of an expensive campaign. They argue that management's decision-making focus vis-à-vis EDI offer the formulation and the execution of tactics.EDI is applied to the cost of an expensive campaign. They argue that management's decision-making focus vis-à-vis EDI offer the formulation and the execution of tactics .

. Data may be organized around the general question of how to effectively integrate EDI with internal systems appears for obtaining performance advantages . The great system between two integration concepts, including the integration between the EDI systems and internal systems (interface integration). Based on theory, we propose that interface integration is favorably related to performance outcomes. We conclude that tactical EDI planning should centrally focus of how intensively management plans to use EDI .

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EDI introduces an element of complexity into relationships that arise from the use of interdependence .
The improvements EDI depend on the willingness to invest in computer systems to improve its internal through of information . So, the benefit of firms is greatly contingent to invest in computer resources within firms. Exactly, improvements in coordination are correctly related access to information generated and stored within another firms . Electronic access to this information makes organizational boundaries more include the internal activiities of an organization to become more clearly to external parties. EDI partners have been readily accessed information in ways that the firm is not able to control them. Also, electronic access information introduced new sources which were vulnerability into an relationship

Web system could be designed in a variety of ways. The use of REST Web is servives for the company so that all sales people can visit the customer in accordance with expectations. The interactions with a client through a server contain allstate information is necessary, so the server does not maintain state with clients. These subtantial adventges overs based on applications typically work in their initial phase, but later run in to problem with testing .

The purpose of this research was to implement EDI teechnplogy REST Web Service architecture. This study was designed to establish communication between the member and The SME client using a web or desktop application that can help companie to fasilitate transactions quickly and accurately . Because it is able to eliminate errors resulting from the entry process and can reduce paper usage and reduse cost incurred in using traditional way that is expected to reduce cost s that are not needed and increase profits for businesses. If the process is met, automated internal processes that occur in these users will be better relations withh other parties.

2. EDI (Electronic Data Interchange)

EDI (Electronic Data Interchange) is a method to exchange business data or electronic transactions through computer networks. According to the International Data Exchange Association (IDEA), EDI is defined as structured data transfer with standard format approved performed from one computer system to another computer system using electronic media. EDI has standardize coding commerce transactions, so that the organization of a commercial nature can communicate directly from one computer system that one computer system to another without requiring hardcopy, invoices, and to avoid delays, unintentional mistakes in the handling of files and intervention from humans . Exchange of data on EDI should be structured so that it can be interpreted by a computer. Software that uses EDI serves as a translator of standard EDI message to an internal file on the Electronic Data receiver. EDI software must be integrated with the application used .

The EDI architecture technology has been shown in the figure 1, is less investment where businesses no longer need to buy new equipment as the infrastructure for the exchange of documents .

3. REPRESENTATIONAL STATE TRANSFER (REST)

The REST architectural style has become more popular by Roy Fielding, when applied to the design of the system will create software architecture. So, we implement all the guidelines of REST based on the work of fielding, approximate the system owns the data, components, *hyperlinks, communication protocols and data consumers who have a special role*
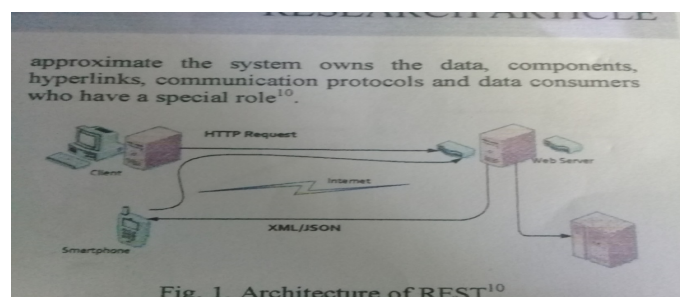

Fig 1. Architecture of REST

HTTP is a rather underlying this protocol has been described as *Representational State Transfer (REST)* has become an important foundation for many Web applications. The main idea of REST is design applications which implemented their functionality completely with HTTP being the access method for URI-addressable resources. In such an application, the application fully blends into the Web does not use any special API, but they have been accessed to resources through HTTP. The application of REST improved HTTP of application using HTTP modeled as a set of CRUD (Create, Read, Update, Delete). These operations since late with method POST, GET, PUT, and DELETE HTTP. By the way, a set of actions has been standardized. HTTP approach can identify the resource. The names associated with the resource (eg/users/1) are generally consistent, robust and understandable. The names associated with service endpoints (such as / UserService) tend to be too wide outside the specifications, while the names associated with RPC call (such as / users / create, when accessed by POST) is redundant. The both states making of a new resource RESTful principles, the phrase should be POST/users/1, which specifies the HTTP verb action and URI-kan specifying the object of the action. resource can have multiple representations, but all must be identified as the same resources.

REST and replication processes running on the web e-commerce among SMEs and SME portal. Process of using the method is applied to the data transfer of SMEs:

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1. Customer can direcly access the product data with checking the connection to the URL SMEs.
2. If the URL connection is successful, then customer will choice and buy the product data in a database e-commerce SMEs.
3. If the URL connection fails, the data that will be represented are the result of data replication which performed at a regular time. Since, the system uses the task scheduler.
4. After obtaining the selected data, the data acquisition process willbe displayed instantly.

The data replication process and analysis the data transfer by using Pessimistic and Optimistic method, the following explanation:

1. Set the destination URL to be replicated and get the data using a link of using REST.
2. Admin will check the network connection, if successful, the system will obtain data from the duplicate. However, if a system failure occurs, the replication connection also failed.
3. The data exchange system can run, the previous admin will store data in the database portal service cooperatives. The system will transfer data asynchronously at any time. Analysis of the data transfer rate use optimism and eptimisme method.

4. ELECTRONIC COMMERCE IS THE USE OF INTERNET – BASED TECHNOLOGIES

Information and communication are for commercial activities such as dvertising in the sale of products and services. Transactions can be done on the internet, among others ordering / purchase of goods where the goods will be sent by mail or other means after the money is transferred to the seller's account   . Use of the Internet as a medium for marketing and sales channels proved to have the advantage among others for certain products more in line offered via the internet; cheaper rates considering creating a site on the internet less costly compared to open retail outlets in various places; Internet is a medium enterprise promotion and the most appropriate products with relatively cheaper prices; as well as purchasing over the Internet will be followed by the delivery of goods to the service at the customer. Ecommerce web development process by implementing EDI focuses on: data structure, software architecture, interface representations, and detail (algorithm) procedural. This stage will produce a document called software requirements. The picture explains that in our e-commerce system, there will be a two-way interaction between the consumer and that allows SMEs owners can

communicate with reciprocity as in conventional transactions in the real world.

The Web architecture evolved more in a bottom-up manner rather than starting as a top-down designed information system, but there is a design rationale behind many of the Web's technologies, and the most important of

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these rationales as a whole constitute the *Architecture of the World Wide Web*   . While some of the finer points of Web technologies still show their evolutionary beginnings and probably would be designed differently when starting over to day, the fundamental de sign choices of the web as loosely coupled system have been greatly successed.

The most important property of the web is that it is a *loosely coupled* system which is based on *interchanging resource representations* rather than using APIs.
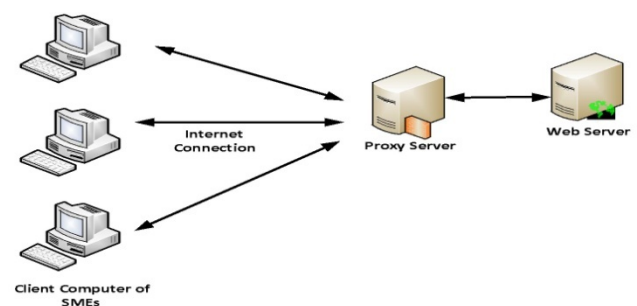

Fig 2. Internet access between client and server

The most important parts of the Web's architecture are *Uniform Resource Identifier (URI* for resource identification using an extensible system for identifying resources using a variety of identification schemes, the *Hypertext Transfer Protocol (HTTP)* as the main protocol for interacting with resources in a lightweight and loosely coupled way, and the *Hypertext Markup Language (HTML*] as the primary resource representation which is universally understood and again is a lightweight and loosely coupled language providing hypermedia features. HTTP is a rather simple protocol, and the design idea underlying this protocol has been described as *Representational State Transfer (REST* and has become an important foundation for many Web applications in the last years. The main idea of REST is to design applications which implement of SME functionality Figure 2. That is as a set of URI addressable resources, with HTTP being the access method for interacting with them. In such an application, there is no need for any special interface, the application fully blends into the Web and interacting with it does not use any special API, it simply provides access to resources through HTTP

Tthe REST architectural style has become more popular, it is not the best style for all applications. However, this paper argues that by using the REST approach to build a Web of Things, it becomes possible to build a Web which integrates physical resources as seamlessly as possible, and allows new applications using this unified view of the Web of today and tomorrow's Web of Things. These applications could be considered physical mashups, where many of the currently popular Web 2.0 technologies to build applications could be used to fundamentally extend the reach of what is possible on the Web
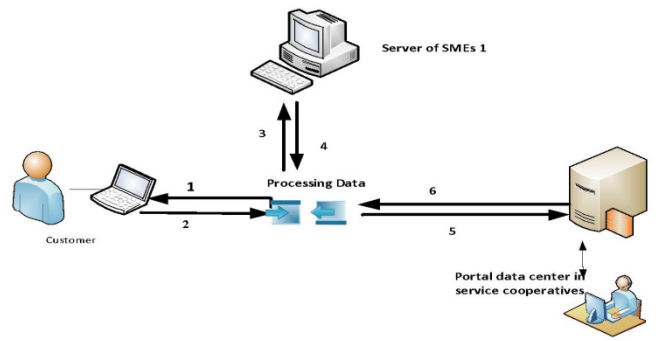
Fig. 4 Transfer data between data and Client owner

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5. EXPERIMENTAL RESULT

Electronic transactions offer goods or services over the Internet to customers that happens on the Internet in general take place in a paperless transaction, while the documents used in the transaction but a real digital document. The mechanism of electronic transactions with e-commerce began with the offering of a particular product by the seller at a site through a server located in Indonesia.

If the Indonesian consumers make purchases, the consumer will fill mail orders that have been provided by the sellers. For example in figure 3, describing the SME Portal system is a representation of technology that enables content manipulation of SMEs that are integrated with other SME Portal system. When consumers ask for transaction processing, then the system will automatically redirect to the respective e-commerce SMEs.

Figure 4. Show describe bridge to connect the consumer / client with data center server who basically want to promote a product from many SMEs. Then, Data center Server in service cooperative will be simultaneously replicated of data synchronisation.
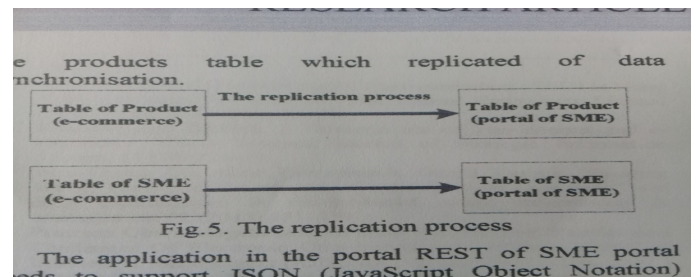
Fig. 5 The Replication Process

The application in the portal REST data center needs to support JSON (Javascript Object Notation) based in part on programming Languages JavaScripts as a as a data exchange format that is easy to read and translated by computer.

Requires encode should be included in the ystem of e-commerce SMEs, as decision data from SMEs. data_product

1. Encode data_product
2. BEGIN
3. SET 1 IN index ke-i
4. IF data_product NOT null THEN
5. WHILE data_product
6. SET data_product[index ke-i] IN produk[index ke-i]
7. SET i+1 IN i
8. ENDWHILE
9. ENDIF
10. END

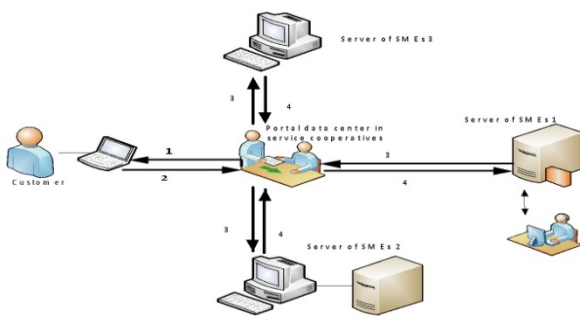**Tabel 1 Test Results of Rresponses time**

Fig. 3 Configuration Transfer business data

Flow diagram data access between client and data center
1. Users access the Portal POST data center in service cooperative
2. User Portal GET on data center in service cooperative
3 .POSS command from the User Server of SMEs
4. GET from[logic] processing data
5. While REST runs, corresponding user Server of SMEs
6. OSTGET from data center server in service cooperative

Title	Time Respon Optimistic	Time Respon Pessimistic
Access 1	0.65413	0.00185
Access 2	0.68472	0.00144
Access 3	0.70151	0.00128
Access 4	0.71024	0.00185
Access 5	0.69135	0.00185
Mean	0.68912	0.001654

The time respon which taken transfer using Method Optimistic and Method Pessimisticc. Representation experiment of the data collection process in the real-time from e-commerce data center using method Optimistic and Method Pessimistic show table 1.

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SMEs portal system has been able to perform synchronization and Electronic Data Interchange (EDI) in real-time with e-commerce systems owned by each SME using Representational State Transfer (REST). The process of collection of data from the data center replication centered at the official portal of data distributed to each SME. Exactly, Replicat can read the extracted data changes and changes in the content specified in the configuration Replica, and vice versa.

6. CONCLUSIONS
The results of the study EDI (Electronic Data Interchange) on Portal data center using REST (Representational State Transfer) to build two systems, namely the data center as the web server and the SME Portal. Both portals have been able to perform synchronization of data in real-time SMEs. E-commerce system that we have built this web-based, already meet the standards of e-commerce in general, with the specification: transaction / booking, description of how to order, details on how to be a reseller, further details of SMEs, which as a whole has been dynamically changed through the system administrator.

Both Portal system that we have built have been able to anticipate when problems occur within each server e-commerce SMEs. If there is a problem in Optimistic, then it will be done by replicating data regularly (Pesimistic).

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