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Wei-cheng Sheng

Chun-Hsiu Yeh

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AN XML-BASED CONTINUOUS AUDITING WEB SERVICES MODEL – AN IMPLEMENTATION STUDY

Wei-cheng Sheng, National Chung Cheng University, Taiwan, iceman.shen@gmail.com
Chun-Hsiu Yeh, Chung Chou Institute of Technology/National Chung Hsing University, Taiwan, sheery.yeh@msa.hinet.net

ABSTRACT

The concepts of continuous auditing are now more than two decades old, many researchers have issued differ continuous audit system model for applying over internet technology. A continuous audit is an assurance service where the time between the occurrence of events underlying a particular subject matter and the issuance of an auditor's opinion on the fairness of a client's representation of the subject matter is eliminated. The auditor offer restricted views provided by the continuous audit web services (CAWS) routines on a fee basis to analysts, investors, financial institutions, and other parties interested in obtaining continuous audit (CA) of business performance or other audit objects of interest. In our study proposed not only discuss with how to ensure the integrity and effectiveness of the entire data collection system but also implement the XML web services to enterprise applied for correctness and usefulness well-known the CAWS model. The CAWS design and demonstrate an implementation of continuous audit with the internal auditor data verify for compliance CA domain. The demonstrated CAWS model uses data retrieval layer, data analysis layer and data presentation layer over the internet to continuously monitor by the audit department. The article concludes with suggestion for future research and our implemented experiences.

INTRODUCTION

The concepts of continuous audit have are now than now than two decades old [9], many financial statement accounts are being managed in real-time [7]. The relentless advance of technology during past few years has changed the nature, evidence of the audit process [12]. The audit environment is changing to keep pace with the changing business environment. The information technology improvement is changing from traditionally tools of Electronic Data Interchange (EDI) to recently E-Commerce of "interconnected networks with symbiotic relationships across a unique network" [22]. The electronic business has bought significant efficiencies and cost reductions to supply chains for compressing cycle times, eliminating redundant procedures among trading partner and reducing the amounts of paper source documents [22]. Some index indicated that there have been 71.7 percent of firms implement the ERP systems among the top-1000 firms in Taiwan, in specific Financial & Accounting, Sale & Orders, Production & Manufacturing, Delivering, Purchasing, Supplier & Chain, Personnel and Warehouse & Inventory [14].

The EDI solution is a pioneer tool in the continuous audit world. The EDI required substantial hardware investment and specific intermediaries (i.e. standard formats and translation software) which transmitting data defined with trading partner. The EDI networks have lost the popular tool until the internet network generated. The E-Commerce was not only facilities business transactions through general Internet of WWW browsers, but also enabled more diverse business activities to be conducted globally. The special characteristic of the E-Commerce is open environment and easily application setting which provide small and medium-size enterprises opportunity to application. Hence the EDI solutions had been out of the current information technology with timely basis and reliable information from investor and regulators expectation.

In response to the market's demand for timely and reliable information, AICPA and CICA have just completed that the continuous auditing (CA) is to address the significant issue auditors will encounter in performing this type of services [1]. It seems certain the investor and regulators, and creators will increasingly demand the information about financial performance not only delivery on the more timely basis, but it to be prove with CA by the independent auditors. For example, Just-In-Time (JIT) inventory processes, managed by trading partners who supply chain, make online, real-time reporting of inventories on corporate balance sheets possible. Likewise, JIT cash management procedures, where suppliers of capital are given access to an organization's cash flow, make real-time monitoring and evaluation of cash, payable and receivable account balance sheet [21]. Woodroof and Searcy developed a conceptual of a continuous audit. As proof of such model by design, demonstrate an implementation of continuous audit within the debt environment for the academic community to investigate implications of real-time financial reporting [13].

Debreceny and Gray provided the extensible business reporting language (XBRL) standard for on online reporting of financial information. XBRL solution is in the initiation of the audit report. In a continuous audit environment, audit reports should be available when demanded and produced automatically. The data generated by the client, the financial statements could be tag by using XBRL and published to the web. The creation of the XBRL-tagged financial statements is "push" by the client system on to the web [6]. Woodroof and Searcy used the digital agents and alarm triggers sent over the Internet to continuous monitor whether actual values of client's variables are in compliance with standard for CA variables in the debt covenant agreement [13].

The improvement in information technology had been changed by that the official World Wide Web Consortium (W3C) defined the Web-Services. A Web Service is a software application identified by URI [IETF RFC 2396], whose interfaces and

biding are capable of being defined, described and discovered by XML artifacts and supports direct interactions with other software application using XML based messages via internet-based protocols. Murthy and groomer defined the specification of frameworks and technologies that facilities such as a Web-services-based for continuous auditing mechanism in enhanced audit world. The Continuous Auditing Web Services (CAWS) mechanism world run as a "web services" in the audit firm's computing environment and could be applied at a very granular level to provide assurance about the specific business process. It approached facilitates a new "pull" model of auditing [8]. They think that the web model including the browser and web server, reusable the components that encapsulate the business logical and explore the raw data from database to be programmatically accessed internet protocols [8]. Although the technology of SOAP, WSDL and UDDI had been clearly defined the application in the web services, it is still need to define simplify process information or data format for interchange with third party. The web service is unlike the traditional tightly coupled models, such as common object request broker and distributed component object model (DCOM). The web service's client and the server are loosely coupled.

However, the aforementioned model is still being discussed in the academic and lack implemented application for the enterprise with current information technology and business environment. In our study proposal, the main objection is not only discuss with how to ensure the integrity and effectiveness of the entire ERP system but also implement the XML web services to apply enterprise for correctness and usefulness well-known the CAWS. There are three layers in the auditors for CAWS application in our study [5]. The CAWS model include of the data retrieval layer, the data analysis layer and the data presentation layer. The major proposed will use XML based character of freely definition to context for data retrieval and implemented the XML web service is our priority proposal. Follow as: (1) Implement the Web service platform to retrieval data from ERP or other system for real time data collection. (2) Subjection oriented to retrieval the data from ERP system and fit continuous audit criterions. (3) Create the major components of the emerging XML web services framework. (4) Discussion about our experience and concern issue about technology sector and future research in the continuous audit area.

The remainder of paper is organized as follow. Section 2 provides some theory background and discussion the various components of XML web service framework that following the continuous audited criteria. Section 3 implements the prototyping system in to integrated system and embedded the data retrieve component into the web service platform. Section 4 summarized the paper and discussed future direction in the line of research.

LITERATURE

The continuous audit is not only depend third party management, but also emerging IT framework such as XML and Web services. There are divide 5 sections about our topic domain in the literature. We will discuss the XML based for the web services in the Section 2.1. The section 2.2 will discuss about develop continuous auditing criteria in the system. The section 2.3 will discuss Business Process Execution Language for Web Services (BPEL4WS). The section 2.4 will discuss Continuous Auditing using Web Services Framework Components. The section 2.5 will discuss Auditing tool about ACL (Audit Commends Language).

XML based for the web services

XML web services defined in terms of its three essential elements, as follow: (1) XML Web services expose useful functionality to Web users through a standard Web protocol. In most cases, the protocol used is the simple object access protocol (SOAP). (2) XML Web services provide a way to describe their interfaces in enough detail to allow a user to build a client application to talk to them. This description is usually provided in an XML document called a web services description language (WSDL) document. (3) XML Web services are registered so that potential users can find them easily [25]. This is done with universal description, discovery, and integration (UDDI). Recently some research issue the extensible business reporting language (XBRL) tags for external report.

The web service was definition by the W3C Web Services Architecture Group state [3] as "a web service is a software system identified by a URI, whose public interface and bindings are defined and described using XML. Its definition can be discovered by other software systems. These systems may then interact with the Web service in a manner prescribed by its definition, using XML based message conveyed by internet protocols." Three major standardization initiatives have been submitted to the W3C consortium to support interactions among Web services in the literature:

WSDL (Web Services Description Language) [24]: WSDL is an XML-based language for describing operational features of Web services. WSDL descriptions are composed of interface and implementation definitions. The interface is an abstract and reusable service definition that can be referenced by multiple implementations. The implementation describes how the interface is implemented by a given service provider.

UDDI (Universal Description, Discovery, and Integration) [24]: UDDI defines a programmatic interface for publishing (publication API) and discovering (inquiry API) Web services [24]. The core component of UDDI is the business registry, an XML repository where businesses advertise services so that other businesses can find them. Conceptually, the information provided in a UDDI business registration consists of white pages (contact information), yellow pages (industrial categorization), and green pages (technical information about services).

SOAP (Simple Object Access Protocol) [24]: SOAP is a lightweight messaging framework for exchanging XML formatted data among Web services. SOAP can be used with a variety of transport protocols such as HTTP, SMTP, and FTP. A SOAP message has a very simple structure: an XML element (called envelope) with two child elements. The first element, the header includes features such as security and transactions. The second element, the body includes the actual exchanged data. A key

difference between an XML-based SOAP message and traditional MIME-typed message is that the web browser merely displays the HTML page, whereas the web service client must interpret the data in the XML message and perform some action based on the data. Standardize HTML tags specify the formatting of data on a web page, XML tags are customized to provide a standard way of representing the contents of data on a web page and logical choice as a message format web services. The SOAP protocol mandates the use of XML to represent the message, but the actual message content depends on the purpose and corresponding design of the Web service.

Many SOAP toolkits provide support for generating WSDL file the exiting program interface for reading the file and communicating with an XML web services, such as Microsoft's Visual Studio.NET. A Web services standards or technologies stack [4] is shown in the Figure 1 to illustrate the relationships and dependencies among various web services standards. It can be use by standards organizations in guiding the standards development efforts and used by IT user organizations to assess deployment strategies for Web services technologies.

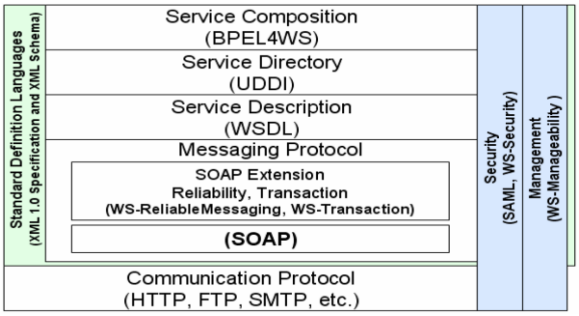

Figure 1. Web Services Standards Stack

Develop continuous auditing criteria in the system

The requirement for correct and timely financial information leads to the need for quality audit service from the auditor to support continuous verification and dissemination of accounting information. In future we will be facing real-time business reporting with real-time auditing [7], In the financial statement audit, the auditor's responsibilities focus mainly on periodically collecting and assessing audit evidence, evaluating the strength of internal controls, and formulating an opinion on the fairness of financial statements. In the continuous audit process is similar with the traditional audit for using the rapid advances in Internet technologies and the increased demand by the public for real-time electronic access to corporate databases, many public companies (e.g. AT&T, Microsoft, IBM) have already released their financial and operating information on their Web sites.

The internet world cause the AICPA and CICA to develop how real-time auditing can be implemented to fulfill the statement-users'needs In response to the market's demand for timely and reliable information, the AICPA and CICA have just completed a research report, continuous auditing address the significant issues auditors will encounter in performing this type of service [1].(e.g. the nature, purpose, scope, and conditions for a continuous audit) and has identified significant matters auditors should consider (e.g. planning a continuous audit, collecting and evaluating evidence continuously, and reporting).

Continuous auditing has been articulated by the CICA-AICPA Joint Study Group [1]. A continuous audit is a methodology that enables independent auditors to provide written assurance on a subject matter using a series of auditor's reports issued simultaneously with, or a short period after, the occurrence of events underlying the subject matter. The conduct a continuous audit, a number of conditions must be present in the study. These conditions are the following:

(1) The client must have highly reliable systems. These systems must be able to provide the necessary subject matter to the auditor on a timely basis.
(2) The subject of the audit has suitable characteristics necessary to conduct the audit. For example, if the audit is focused on evaluating internal controls, then the auditor must be able to electronically interrogate these controls.
(3) The auditor must have a high degree of proficiency in information systems, computer technology, and the audited subject matter.
(4) Automated audit procedures will provide most of the audit evidence necessary to opine on the subject of the audit.
(5) The auditor must have a reliable means of obtaining the necessary audit evidence so that an opinion can reached.
(6) The auditor must have timely access to and control over any audit evidence generated as a result of the continuous auditing procedures.
(7) It is necessary to have a ''highly placed executive'' in the client organization who will serve as a champion for the adoption and support of continuous auditing.

In this section as we know that the CA have to compliance 7 criteria to design the XML based CA system.

Continuous Auditing using Web Services Framework Components

The XML Web services as facilitator for continuous auditing, conventional techniques, such as EAMs and software agents, lodged within the client's computer system are no longer applicable. Murthy and Groomer [8] had design CAWS to describe how continuous auditing would operate in an XML-enabled business processing environment. In the research scenario, users requesting assurance on client business process on a continuous or frequent basis by invoking auditee-specific CAWS winthin the auditor's computing environment. Consider an XML-enabled e-commerce sales transaction processing application for an

auditee. One aspect of verification demanded by assurance customers is whether the revenues being report by the audit client were valid. The sample depicted how a sales transaction CAWS would work to provide CA regarding the revenue amounts being reported by the audit client. A potential extension to the model was for the auditor's CAWS to request confirmatory data from the appropriate external agents responsible for the execution of specific subprocesses within the overall sales business process for the audit client in the figure 2 [8]. In this sample, the external auditors would use CAWS to assist in the gathering of audit evidence to support an opinion on an audit client's financial statement. Hence we will inherit the sample character to implement in our case study.

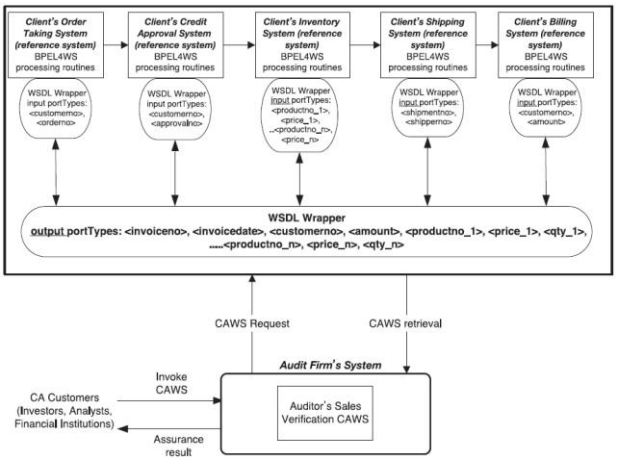

Figure 2. CAWS for sales verification (DataSource: Murthy and Groomer(2004))

Auditing tool about ACL (Audit Commends Language)

The otherwise, ACL is the preferred software tool of audit and financial professionals for data extraction, data analysis, fraud detection, and continuous monitoring. ACL expands the depth and breadth of data analysis, increases auditing findings. With ACL, organizations can achieve fast payback, reduce risk, assure compliance, minimize loss and enhance profitability. Providing a unique and powerful combination of data access, analysis and integrated reporting, ACL reads and compares enterprise data—any data, flat or relational databases, spreadsheets, report files, on PCs or servers—allowing the source data to remain intact for complete data quality and integrity. Used as a standalone PC application and/or as the client with the Server Edition software, ACL employs a single, consistent client interface and provides easy, immediate access to data. For example, analyzing server data, to information stored on mainframes, to mySAP for ERP data, or networked PCs. This ensures optimized performance and optimum flexibility in accessing new sources of data (ACL Institude,2001).

ACL Continuous Controls Monitoring (CCM) solutions provide an independent mechanism to automatically monitor internal controls effectiveness, supporting compliance efforts, and minimizing the risk of error and fraud. ACL CCM solutions are multi-platform capable and work with any source of data - enabling the visibility critical to effective management of the order-to-cash cycle. Following the COSO (Committee of Sponsoring Organizations) internal controls framework as figure 3 to identify key controls objectives, ACL CCM analytics perform complex transactional analyses and identify control failures. A sample of the control objectives covered by CCM analytics follows:

(1). Manage Customers: Ensuring credit limits are appropriate and that users have not created fictitious customers or are selling to OFAC-listed and other restricted organizations.
(2). Order Entry: Ensuring credit limits are not exceeded or been change without authorization; monitoring for excessive discounts.
(3). Manage Pricing: Monitoring for pricing errors or excessive discounts.
(4). Sales Invoicing: Ensuring shipment of sold goods only and monitoring for unbilled shipments or delays in shipments.
(5). Receipts: Monitoring for disputed billings, delays in collections and unapplied receipts; ensuring customers do not exceed terms.
(6). Collections: Monitoring for disputed billings, collusion or fraud, and revenue write-down

The order-to-cash cycle typically crosses several corporate functions, the resulting handoff from department to department can become a source of error, fraud, and delays resulting in reduced cash flow. In addition, large amounts of data are typically housed in multiple IT silos, and these disparate data sources make it difficult to gain insight into the critical data that underlies the entire process. As a result, the order-to-cash cycle can be prone to a high degree of risk, making it more important than ever to put in place a set of controls to identify sources of revenue leakage, suspicious activities, and inefficient processes [2].

Figure 3. COSO internal controls framework

RESEARCH METHODOLOGY

The literature chapter 2 discuss about information technology of XML based web service and continuous audit concept which we know the CAWS model is still a lack of discussion on how to apply modern Internet techniques to facilitate the implementation of continuous auditing. In our study combines two domain knowledge as the XML technology and continuous audit for complete the research targets. The research methodology based on the meta-research from McCarthy which the information accounting research methodology is inherit the two domains of information technology and information management. In our methodology of used system presentation and implementation which the CAWS model research topics which is classify innovative, constructive and modeling by case study.

The case study is one of key part vendor in the TFT-LCD industry, the company had deployed multi-site manufactory between the Taiwan and China which implement the ERP system about Financial & Accounting, Sale & Orders, Production & Manufacturing, Delivering, Purchasing, Supplier & Chain, Personnel and Warehouse & Inventory and implement business process management which to been linked the business process management (BPM) for system authorization approval. The company had been developed paperless in the all site and used the BPM system to replace artificial signing. In the current time, the audit department was very nervous traditional audit method and business trip to remote site for the auditing, in this way it's too late to find the internal operation risk and effect the timely audit efficiency. We are great to read the continuous audit paper for improve the timely audit by the web services. It is caused us try to implement the continuous audit model. The company has been the completely information system, such as enterprise resource planning (ERP), manufactory execution system (MES), business process management system (BPM), document control center (DCC), human resource management system (HRM) and knowledge management (KM). The more detail information technology infrastructure as figure 4.

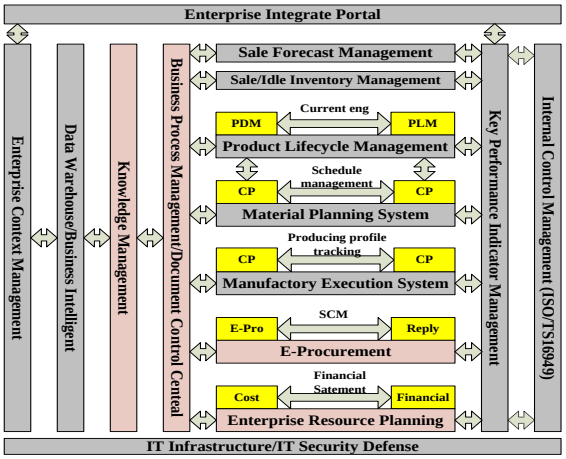

Figure 4. IT infrastructure from case study

An XML-based Web Services Auditing Model

Murthy and Groomer [8] made a continuous auditing web service model sample for continuous auditing in an XML-enhanced computing world and described the context of a hypothetical scenario. Consider an XML-enabled e-commerce sales transaction processing application for an auditee. The specification of verification demand by assurance customers is whether the revenues being report by the audit client are valid. How a sales verification continuous auditing web services would work and provide continuous auditing regarding the revenue amounts being reported by the audit client. The audit client retrieved data from the audit client's sales system on parameters defined at the time the continuous auditing web services was invoked by the continuous audit customer. The data retrieved by the continuous auditing web services from the sales system comprise fields defined as output port types in the web services definition language wrapper of the sales system. The data items from the sales system, the sales verification continuous audit web services in the auditor's system then requests confirmatory data from reference system [8].

In our study refer the Murthy and Groomer (2004) [8] CAWS for sales verification model and revise for closely our practice in the figure 4. There are two product systems to join the prototype building, the Data System ERP control 4 modules as sales system, inventory system, accounts receivable system, accounts general system. The other process management is Agent-Flowing BPM system to control ERP system flow linkage and the control notes mapping the internal control system by the electronic assign (TS2, ISO). All the system have been connected to the WSAL Wrapper and import the ERP transaction data

and Agent-Flow process data into the each XML Based Data Retrieval Component. The Continuous Audit Web Services must be created for each business process, define the audit client's business parameters and specified in the client business process WSDL wrapper. The <input> operation of each CAWS portType must be fed by the <output> portType of the client business process that is being checked by the auditor's CAWS. The audit operation uses the generalized audit software (GAS) for Web Service data detection, such as audit command language (ACL).

The Continuous Audit Process Design

Although this research report has described the continuous audit framework in various aspects Many research previously issued about the continuous audit techniques (CATs) and focused on the use variants of embedded audit model (EAM), discussed how EAM could been employed in the database environment [8]. The continuous auditing implementation in the corporate setting of main objective for who auditors must gather the enough evidence achieved audit risks acceptable. The audit process is necessary conduct test of control and analytical procedures to be like EAM or general audit for gather necessary evidence. In the example, the traditional test of transaction audit objective like existence, completeness, accuracy, classification and timing. In our study use the sale cycle to evidence system prototype available, integrate and complete by the objective audit process. Detail sale cycle audit objectives and control procedures are in the table 1 for mapping the section 2.2 Continuous Auditing Process Criterion.

Audit objectives in sale cycle	Transaction evidence and control procedure
Recorded sale transaction and indeed occur(Existence)	1. Check customer no of invoice whether in the customer data table. 2. The order number whether in the accounts general journal.
Finish recorded sale transaction(Completeness)	Tracking the shipping no, invoice no and account general journal linking.
Accuracy in the record numbers(amount of money)	Recalculating sale incomes which the same with posted it.
Recorded sale transaction in the actual date(timing)	Compare the sale transaction date and shipping date.
Recorded sale transaction in the account received table and accuracy summary(post and summary)	Summary day book amount which tracking a general ledger and accounts receivable.

Table 1. Sale cycle of audit objectives and control procedures

Moreover, on a monthly basis, auditors are used to drive these monthly cycle detection. By the way the audit objective has nothing change the underlying focus for the audit work. Only techniques and methods for gathering the evidence have changed.

The System Prototype Design

We will build an XML-based Web Services prototype and system interface for data retrieval in the session 3.2. The prototyping development need to meet the continuous auditing criterion and XML-based Web Services technology limited. We introduce our case information technology environment and prototyping development tools here.

Prototyping Development tools
Operation System: Windows Based Series Version.
Web Server: IIS
Program Tools: Java Client Application
Application Software: Oracle 9i

Data Retrieval Layer

The layer provides a bridge between the Client and Auditor which contains the data retrieval for CA data preparation. The <input> operation of each CAWS portType must be fed by the <output> portType of the client business process that is being checked by the auditor's CAWS [8]. On a continuous basis, the client generates and stores financial reports (such as the receiving report, perpetual inventory summary, and cash payment summary in our vendor invoice example) and transaction log, and cash-disbursement log in the web services of audit database. The financial report the associate transaction log files are the main

input to the CAWS, the data retrieval mechanism has to implement input the controls to make sure that: (a) the received data are from the right client; (b) the received data are not modified or illegally accessed during network transmission, and (c) the client can't repudiate the data transmitted. The data retrieval layer collects the relevant information and documents from ERP and BPM system. Following the system form is in figure 5.

Figure 5. Data Retrieval Layer

Data Analysis Layer

The data analysis layer consists of the audit database and an audit tool of ACL (Audit Commands language) for supporting verification and analysis of financial reports. The specific field of financial reports and transaction log files are identified and automatically read in the ACL project database. The data analysis layer should adopt certain control procedures to ensure that (a) the transactions comprising the financial reports and transaction logs are complete, and (b) no modification has been made to transactions that have been previously audited.

The ACL audit database and its associated knowledge base are the core in the CAWS to support all fundamental analyses, diagnoses, verification, and exception reporting for typical acquisition cycle, the ACL the associate audit database should include the all applicable GAAP and auditing rules. These rules are used to link accounting metrics to standards for measurement and evaluation. For example, measurement and recognition criteria for inventory, accounts payable, and various expenses for evaluating the system operation, and cutoff tests of accounts payable are included as predefined rules. The extracted data are analyzed and evaluated using these current GAAP and auditing standard for checking appropriateness and accuracy, some typical auditing rules may appear and detect form as below and figure 6:

Rule #1: JOIN PKEY OEA03 FIELDS OEA01 OEA03 OEA032 SKEY OCC01 UNMATCHED TO "join" OPEN PRESORT
OEA01: Serial NO filed in the Sale Order table
OEA03: Customer NO filed in the Sale Order table
OEA032: Customer Name filed in the Sale Order table
OCC01: Customer NO in the Customer Profile table

Rule #2: JOIN PKEY OGA01 FIELDS OGA01, OGA02, OGA03 SKEY OMA10 UNMATCHED TO "join1" OPEN PRESONT
OGA01: Serial NO filed in the shipping table
OGA02: Shipping date field in the shipping table
OGA03: Customer NO filed in the shipping table
OMA10: Serial NO filed in the account received table

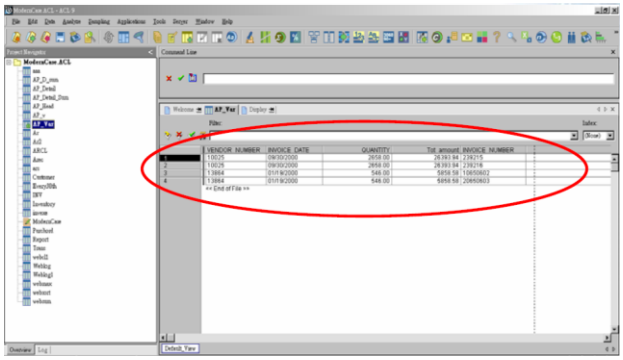

Figure 6. Data Verified

Data Presentation layer

To develop the XML web services to connected the client internal database by the web interface in a continuous environment. The web interface solution uses the JAVA client to complete. The web interface sophisticated the data flows that are specifically system specification fitness. In example of ERP system connected BPM system. The data transmissions have be worked when

the user login to the web services and click the continuous subjective tags which import the joint data into web services database for ACL verify. The data presentation layer provides operational and presentational user interface for the auditor to browse, navigation, and the review final outcome summaries and related accounting information and documents.

CONCLUSION

In our study of CAWS model derived three layers as data retrieve layer, data analysis layer and data presentation layer. First, the data retrieve layer created major components of merging XML web services framework and connected the internal database (ERP system, MES system, BPM system) to retrieve the data which was continuous subjections oriented to collect the data. Second, the data analysis layer used the continuous audit tool as ACL which is almost prefer audit tool for verify the continuous subjective data for business assurance to verify the sample model of sale cycle in the company. The CAWS model to be applied is verified that the internal control implementation within the audit client's system with functioning properly. The CAWS had the interface with the client's system to retrieve the internal database relating to periodic sale cycle data which continuous audit data preparation. The data transmission had been made the XML format documents for the auditor to data transfer by the audit tools (ACL). The auditor used the ACL to analysis the data for the sale cycle subject auditing and completed the data verify in the subtask. The CAWS configured with a series of subjective test transaction of sale cycle and designed to verify the proper operation of internal controls by the ACL within the audit client's system. Finally, the data presentation layer had been received the audit documents and upload it in the web services.

The CAWS was the automatically web-based platform and improvably the data transmission efficient from the auditor to the client. The data retrieve layer could avoid the manipulative error and promote the correctly audit quality for reduce the audit cost from traditionally audit methods to data transmission. In this manner, the control verification CAWS invoked by users whenever business assurance about the functioning of internal controls in the audit client.

Furthermore, Remin and Prather [19] was issued about the XBRL international financial reporting standard (XBRL IFRS) initiative for a common international XML tag set for financial report. The XBRL IFRS specification is intended to integrate with XBRL GL which is a creation of "data hub" that receives XML-based inputs from company's internal accounting system and provides XML-based outputs to systems within or outside the company. The data hub could be used by a company firm to simplify the process of XML information interchange with its audit partner. In our study, the data analysis layer as ACL freely data connected with XBRL format for data import/export with XML data format. The case study model with CAWS efficiently and effectively to reduce the audit cost and improve multi sites audit quality without complicated criteria that the client, the auditor and related third parties [13].

IMPLICATION AND FUTURE RESEARCH

The article proposed an architecture for accomplishing a pull model of continuous auditing which included three layer as data retrieval layer, data analysis layer and data presentation layer for completely build CAWS model. The data analysis layer was the most popular and easy-use audit tool although it worked with the general audit tool of package software. For practice, the majority of Taiwan enterprises have building the manufacture sites across Taiwan to China areas, therefore the business environment need strong continuous audit for assurance business process in this competitive era without timely the XBRL development gaps connected with audit partner. In our study, the CAWS model to been implemented based on continuous audit criterions and applied general audit system as ACL to analysis the verified data. This CAWS model could reduce the system development cost without stringent criteria that the client, the auditor and related third party must be motivated and have the expertise to participate [13]. But it is still need to simply the process data format definitions.

Continuous audit was a comprehensive electronic audit process that enables auditors to provide some degree of assurance on the continuous information simultaneously with, or shortly after, the disclosure of the information. We will continuous to research the CAWS model by this principle which reduce the audit cost in the system development and enhance the audit quantity in the future research, such as compare system implement cost with other model.

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