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Total benefit Adminstration for Industry Environment

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Abstract:

Project entitled "Total Benefits Administration System" is primarily focused on maintaining the benefits administration for its clients. It provides a user friendly environment for the both employees of Industry and the end users of the system. This system allows the employees to work closely with every requirement of the clients and the end users. In this application we can easily manage the participant's benefits, inquiries, personalized communication statements, life events, pension calculations, retirement estimation and many more. Users can view their benefit details, history of payroll and can easily apply to trigger the any of the events. This system will allow a new participant details which can be added, deleted, edited in several step of verification process. It provides user management configuration to add or remove the participant. Each user activities maintained by this system and the errors occurred during usage of the system maintained separately. Finally the reports will be generated for the event details

Keywords—*TBA, QAC, Database, Industry, Database Administration.*

I. INTRODUCTION

Normally the industry will require the lot of activities for usage of application. This application helps the users of industry to acquire the total values. Total Benefits Administration (TBA) system will function the various activities through the application [1][2].

1.1 TBA Environments

✓ **PROD**: - Every client has a database in PROD or Production. This is the live participant Environment and it is the most stable.

✓ **QAC**: -This is the primarily Testing Environment. Client Team does most of their testing in QAC and makes several different QAC database. A staging database mirrors the client production database so that regression testing is performed prior to "Migrating To production".

✓ **QA**: - The QA environment designed to a "Holding Ground" for testing new TBA functionality. New program are tested here by TBA base before being send to the client's team in QAC. Client team will use a QA database when they are regression testing the new TBA release functionality.

✓ **DEV**: - Client team do not use this environment-it is where all the initial TBA programming is done .This environment is where the base code development is created .Because of this, it is the least stable environment. The figure 1 shows the TBA environments.

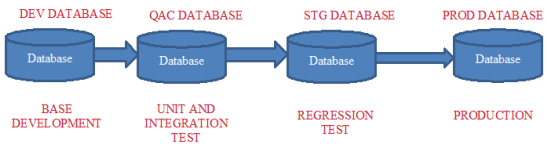

Figure.1 TBA Environments

1.2 Types of data Stored in TBA

Here is some of the types of data stored in TBA:

✓ **Person Data**: - Person data, also known as indicative data, is used to determined and administer each participant benefits. We store information about each participant employed by other client. The specific data stored varies from client to client. Person data may be considered request data or result data. Request data is the data that has not been processed. Result data is the data for completed activity [3].

✓ **Provision Data**: - In addition to person data, we need to store information about the working of the client's benefits plan. Every client's benefits plan has a different rule that dictates how the plan is run. Example, provision data indicates whether loans are allowed, whether transfer or fund reallocation are used, whether contribution are matched or not and which medical option participant can choose.

Provision data allows us to keep this information on the TBA system in each client database.

✓ **Runtime Data**: - Runtime data is information that pertains to dates and time. Example, on a TBA system database there is a calendar that defines the context of the day.

1.3 Problem Definition

Industry is offering many diverse test tools for testing. They have a manual system in place for all their administration work, which has recently expanded beyond what the system can cope with due to demand [4][5]. Naturally this increase in workload requires a new system to ensure the successful running of the company. In previous system it as no support for test case on multiple language and performance of process engine is slow where participants cannot be viewed their details in which it makes indirect way of Processing so, it take more time to complete a process [6].

1.4 Objectives

When an employer benefit provides many choices and options, employers will establish a benefit plan to document and help coordinate the general rules and provisions around the complex benefit choices and options. The benefit plan (often called a plan document) provides a structure of rules, processes, and procedures to make it feasible for the employer to provide complex, optional, and variable benefits to a large population of employees.

The U.S. government also has an interest in seeing that U.S. employers provide health care and retirement benefits to American workers to minimize the need for Americans to rely on government support in these same areas.

By creating a benefit plan, an employer can also document that they are following these government required guidelines.

✓ Defined Benefit Plans
✓ Defined Contribution Plans
✓ Health and Welfare Plans

1.5 Motivation Study

Motivation is an important function which every individual to work for accomplishment of their objective to the organization. Due to the lack of user interface in the existing system, I have intended to propose a study about this project. This system development is very challenging to work and I gained a lot of knowledge's from the proposed system.

II. MODULE DESCRIPTION

2.1 Defined Benefit Plan

Defined Benefit (DB/pension) plans provide income to employees in retirement and guarantee that participant will receive their retirement benefits.

Here are some benefits of a DB plan:

✓ Retirement plan – Provides income to employees at retirement.

✓ Employer contribution – Employer contributes to the plan and assumes the risk of investment.

2.2 Characteristics of a DB plan

Here are some Characteristics of a DB plan

✓ Employer defines the benefits (formula) to provide income to employees at retirement. Employer makes contribution as defined each year to ensure the plan will be able to support payment of retiree benefits. Actuaries determine what amount the employer needs to contribute to meet this objective. Employees usually do not contribute toward the benefit. Employer assumes investment risk and the liability for providing the benefit. The benefit is predictable for the employee (based on a set formula) and is usually paid for his or her lifetime. The employee often has the option to have some percentage of the benefit continue to a survivor after the employee's death for the survivor's lifetime.

✓ Employees usually have to work for an employer for a certain period of years to earn the right to a pension benefit. For example, an employee must work for an employer for up to five years before he or she will be eligible to receive a pension benefit. The time frame over which employee gains the ownership of the benefit is called a vesting schedule.

✓ Employees collect the benefit (usually each month) once they meet early, normal or late retirement rules. Retirement age is determined by the U.S. government and applies to an age at which people typically retire.

2.3 Defined Contribution Plan

Defined Contribution (DC) plans provide income security for retirement years, as well as some access to money prior to retirement [7].

Here are some benefits of DC plans:

✓ Individual Retirement Plan – Helps employees save for retirement.

✓ Tax Advantages – Contributions can be deducted from pay on a before or after tax basis. If before tax, the amount shown as taxable income is lower. This saves the employee money paid in taxes each year.

✓ Choice of Investment – Employees can choose where to invest their money to maximize earnings.

2.4 Characteristics of DC plan:

Here are some Characteristics of a DB plan [8].

✓ Both the employee and the employer may put money into (or contribute to) an individual account for the employee.

✓ Employees choose from a variety of investment funds in which to invest their money. The account can experience gains/loss over time.

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✓ Employees gain ownership (vesting) in the employer contribution over time. Employees are considered immediately vested in their own employee contributions.

✓ Employees collect the benefit (the value of the account) at or after separation from employment, or sometimes sooner.

✓ Employees decide the amount to contribute.

✓ The maximum amount employees can contribute is subject to government limits, plan limits and choice of employee.

✓ The maximum amount the employer contributes is defined by plan rules (and also subject to some government limits).

✓ Because employees choose where to invest their money, they assume investment risk for their account balance.

✓ Active employees may take loans (to be repaid) or withdrawals (not repaid) from their account while employed, depending on plan rules.

✓ The benefit (the value of the account) is portable; meaning the vested portion of the benefit can be moved to another employer's plan upon termination.

2.5 Health and Welfare Plan

Health and Welfare (HW) plans are employer-sponsored plans that offer a group of employee's benefits to ensure their health and well-being. It also protects employees against catastrophic events. HW plans primarily provide employees access to important services during their working years and potentially in retirement [9].

2.6 Benefits of an HW plan:

Here are some benefits of HW plans

✓ Preventive care – It encourages employees to have regular doctor visits to detect potential health-related problems before they progress to a serious stage.

✓ Tax advantages – Employees are able to pay for benefits on a before-tax basis.

✓ Financial security through cost control – Benefits are more affordable when employer-provided. Because a larger group of employees is covered, each employee in the group receives a group-rate which is lower than if they receive coverage on their own.

2.7 Characteristics of an HW plan:

Here are some Characteristics of a DB plan

✓ Employees choose the type of coverage (from an employer-defined list) as well as which individuals to cover (e.g., spouse or spouse and children).

✓ Employers and/or employees pay for all or part of these benefits. Coverage cost varies, depending on the type and extent of the coverage.

✓ Employee costs are usually deducted from employee paychecks.

2.8 Types of HW plans

✓ Health Care
✓ Life Insurance
✓ Disability
✓ Flexible Spending Accounts
✓ Long-Term Care

III. TBA SYSTEM ARCHITECTURE

As benefits plans and HR programs increase in complexity and generate massive amounts of data, the application technology that is used to support these programs becomes even more important. The figure 2 shows the TBA System Architecture [10][11].

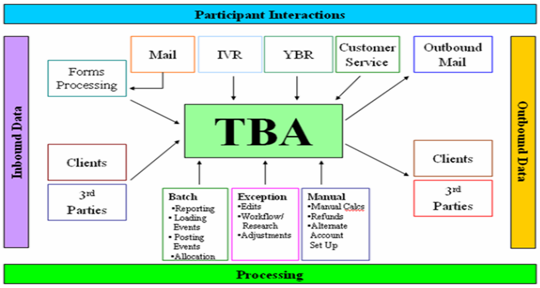

Figure.2 TBA System Architecture

The TBA system offers the comprehensive features and functions required to administer the robust employee benefits programs offered by large companies. The business objects, components, and related event processes of TBA easily accommodate highly variable and complex program design and administrative practices.

3.1 Interfaces of TBA System

✓ Batch: - Loads HR data, updates pending request, start activities for the different populations.
✓ GUI: - A graphical user interface used by IDG, ODG and CSA's to enter request and fixed edits.
✓ IVR: - Interactive voice response, allows a participants to call and make request or check information.
✓ Web: - Allows participants to view and update benefits information over the Internet.
✓ Workbench: - A front-end interface used by the development team that accesses the database on the TBA system.

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3.2 Data Flow Diagram

The figure 3 shows the Data Flow Diagram of TBA System.

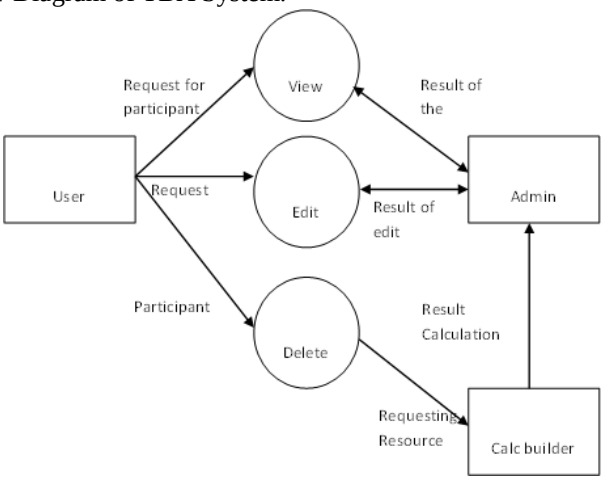

Figure.3 Data Flow Diagram

3.3 System Implementation

Implementation is the stage of the project when the theoretical design is turned into a working system. At this stage the main workload, the greater upheaval and the major impact on existing practices shift to user department. If the implementation stage is not carefully planned and controlled it can cause chaos [12][13].

The implementation stage in a system involves careful planning, investigation of the current systemic and its constraints on implementation, design of methods to achieve the change our procedures, and evaluation of change over methods.

The implementation plan consists of the following samples data.

- ✓ Testing the developed system with sample data.
- ✓ Detection and correction of errors.
- ✓ Making necessary changes in the system.
- ✓ Checking the report with that of the existing system.
- ✓ Training and involvement of user personnel
- ✓ Installation of hardware and software utilities.

The implementation of the system is easy for any system environment as the software is portable one. In this TBA system, the implementation is easy because it requires minimum one computer to install the system and perform the analysis.

3.4 Software Specification

The table.1 shows the software specification used in this application.

Table.1 Software Specification

OS for Web server	Windows, Linux 32/64-bit (x86) etc.
DBMS	Advanced Table Editor
Software Required	Small Talk, TBA, ECHO, CISC, PDM
Web Server	Apache Tomcat 3.0/Any
Database Server	SQL SERVER
Framework	Hewitt tools
IDE	Calc Builder (For small talk perspective)

IV. RESULTS AND DISCUSSION

4.1 Input Design

Inputs to the TBA system are initiated by the life events and system activities. A life event is an event something noteworthy has happened to the participant, which may have some impact on the participant benefits, status or eligibility in benefits plans. Examples of life events are getting married, birth of a child, getting a new job, retire, being terminated and death [14].

System Activity is tasks that performs life event on the system. These activities may trigger other activity to complete the life events, not all system activity ties to a life event.

4.2 Output Design

Here different forms of actions in output

- ✓ Web: - As an output the web provider a site for client and participant to used their data once it has been updated from a requested change. Example a participant can review the accuracy of their beneficiary, designation, address information and benefits election.
- ✓ PCS: - Personalized Communication Statement is hard copy request, form or reports, generated to communicate personalized information directly to participants.
- ✓ Reports: - ODG associates and client team can request ad hoc reports or queries that are typically immediate in nature and are one time requests. These ad hoc reports are not a part of standard processing. For Example: the ODG or client make ask for report that includes the number of full time hourly union employees that work in the client north Carolina distribution center
- ✓ TPA System: - Data is sent to the third party administrator to perform their daily business functions. For Example: In defined benefits and health and welfare participant make choices on the TBA system that must be communicated to the client Payroll the file is created from the TBA system and sent to the client's payroll system. So

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the appropriate money can be deducted from participant paycheck.

4.3 Results of XML Tool

TBA Login: This is the TBA login page in this user Id and password of the user and admin in the Industry employees. The figure 4 shows TBA login.

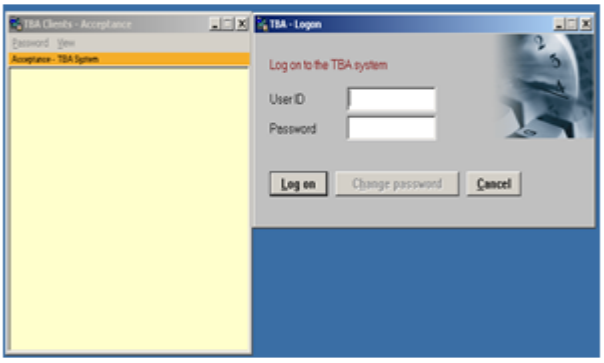

Figure.4 TBA Login

TBA Participant: This is the Employer information and their IDs and choosing the personal selector option. The figure 5 shows TBA participant.

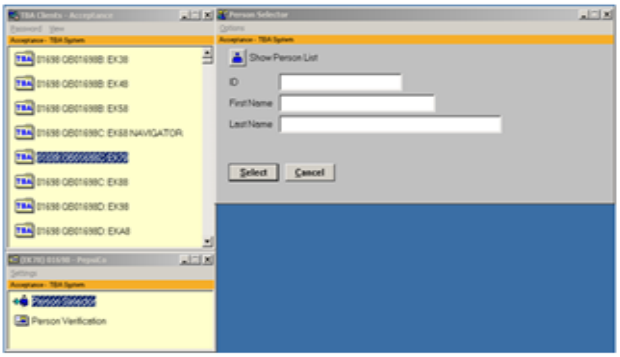

Figure.5 TBA Participant

TBA Event: The particular participant in the table information events can be triggered based on the plan details. The Events are DBEST, CMIRET, SCRTUP. The figure 6 shows TBA event.

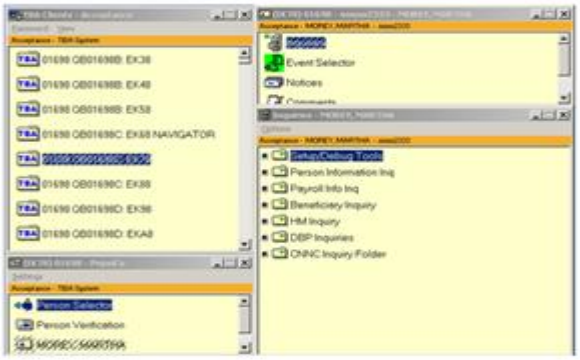

Figure.6 TBA Event

Test Menu Option: TBA test option in this choosing the region for the development are and production area. The figure 7 shows TBA test menu option.

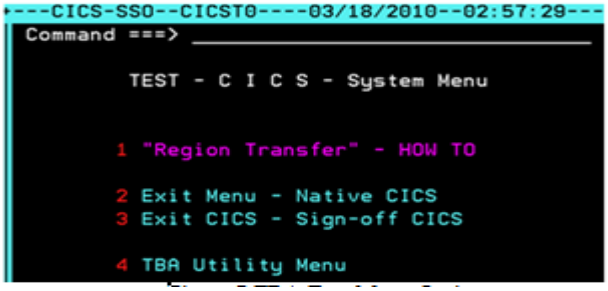

Figure.7 TBA Test Menu Option

TBA Data Transfer: Choosing the path to the data transferring the option and either it can be development or production and the processing of the data through CICS. The figure 8 shows TBA data transfer.

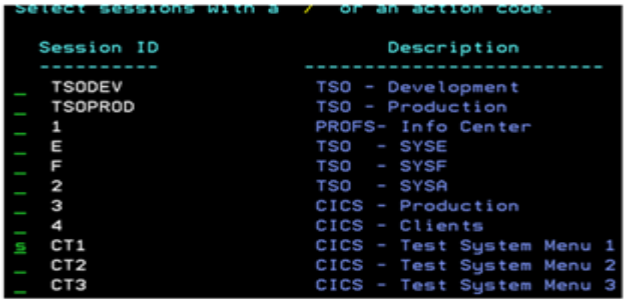

Figure.8 TBA Data Transfer

TBA Setup: TBA transaction ids are generated in the event and it can be setup the date and time for the current activity. Effective date should be added in the sections. The figure 9 shows TBA setup.

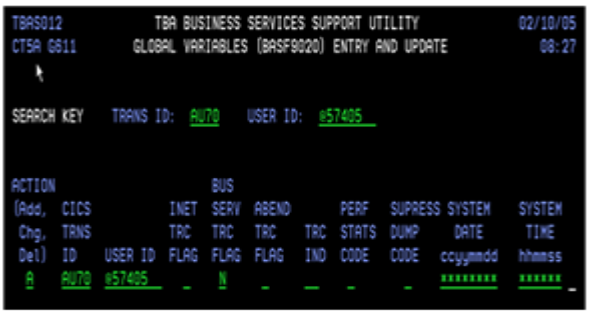

Figure.9 TBA Setup

TBA Work Bench Login: Work Bench Login page it can be process in this Time Sharing Option and checking the parameter and all details. The figure 10 shows TBA work bench login.

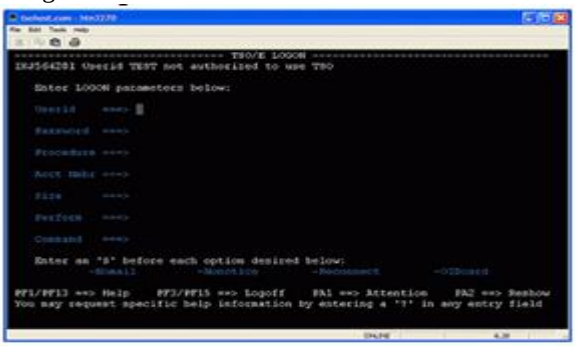

Figure.10 TBA Work Bench Login

TBA Work Bench Data Loading: Work Bench Data can be loaded through time sharing option and it gives a proper result and displayed in the benefit resources. The figure 11 shows TBA work bench data loading.

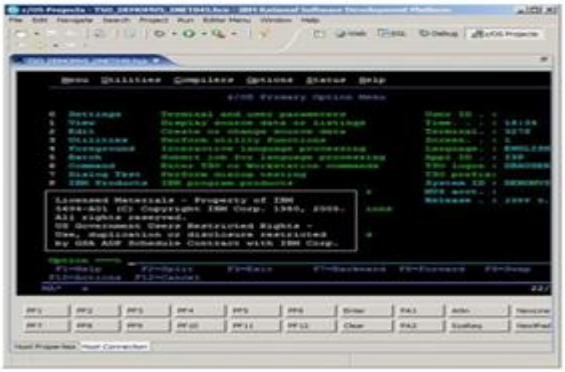

Figure.11 TBA Work Bench Data Loading

VI. CONCLUSION

TBA system is the project which includes the benefits, contribution and health and welfare of the employees from the integration perspective. Basically after the configuration of the system by development team there is a need to test the system as a whole, so we do an integration testing for this. In this we use many tools and perform testing on the test databases. Test database is as similar as the original one but it is used for the testing purpose we follow a series of action in our testing task, like test planning and designing and test implementation and execution and evaluation. Testing also many types like Graphical user interface and web based testing and also it includes benefits calculation for the employees.

TBA has a wide scope in future like we can use some more testing tools available in market like QTP and Load Runner. Quick testing professional software provides functional and regression test automation for software applications and environments part of the HP quality Centre tool suite. HP QTP supports keyboard and scripting interfaces and features a graphical user interface, part of it regression testing and re-testing increases the scope of the testing in the project. Information about the participant result can be transferred to mobile which can be viewed by users. Different kinds of alerts can be provided. And in this Environment Can be upgraded to the many languages to be supported in the Future.

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