

## 1. Introduction

### Background Information

#### Company Background

- EY is one of the top accounting firms in Singapore with over 140 partners offering assurance, tax and advisory services to clients

#### Digital Audit Transformation

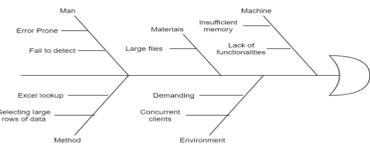
- Due to increasing amount of data being audited, it is important and necessary for EY to move towards digital transformation to handle big data more efficiently

### Project Objectives

- Identify bottlenecks and problems in the current audit process
- Propose and implement proof-of-concept system automation to handle voluminous data, facilitate data validation and processing, and improve auditors' productivity
- Enhance customer relationship management using Info-Comm Technology in the audit process

### Problem Identification

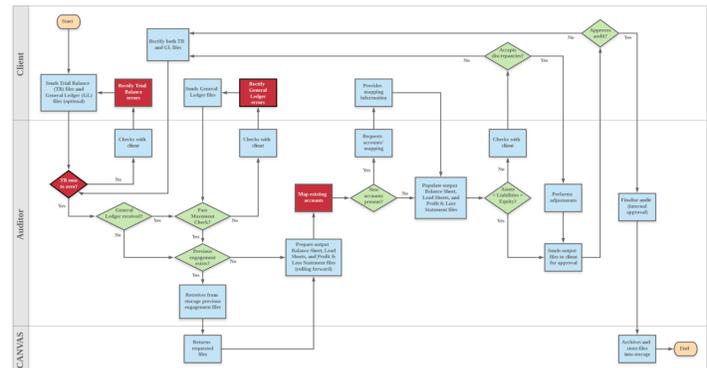
- High Chance of Human Error
- Huge influx of Files from Clients
- Large Manual Work required



### ISE Skillsets Applied

- Project Management
- Systems Thinking and Design
- Decision Making Analysis
- Human Factors Engineering

### As-Is Business Process Flow



- The bottlenecks (areas with high risk of errors) in the process are identified by the red colour
- Additional time taken clarifying correctness of data with client
- High probability of misplacing clients' file due to huge traffic of emails from clients to auditors during peak audit period
- Unstructured process flow in current audit process which hinders the quality and efficiency

## 2. Solution Requirements

### Functional

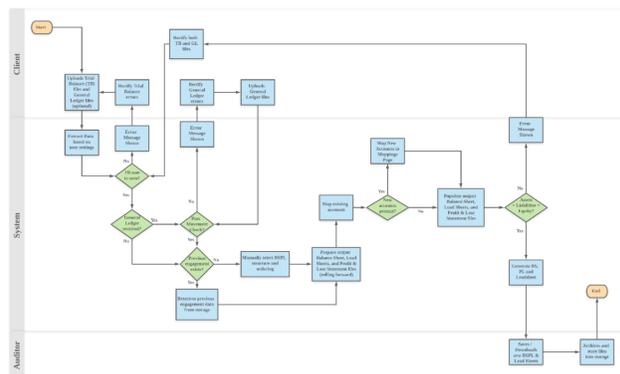
- Login Function
- Client Creation
- File Upload
- Account Mappings
- Generate Output Files
- Data Archiving

### Non-Functional

- Processing Speed
- Scalability
- Centralised Storage System
- User Friendliness
- System Security

## 3. Solution Design

### To-Be Business Process Flow



### Modifications to Current Audit Process

- Allow both client and auditor to kickstart the audit process through input file upload
- Streamlining the audit process towards automation, where the system does most of the work
- Centralised system which can hold large number of users concurrently

### Evaluation of Proposed Approach

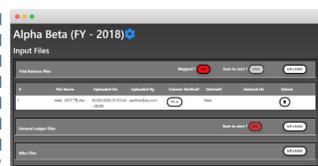
- Higher work efficiency -> Reduce work man hours doing unnecessary manual work
- Higher accuracy of work done -> Greatly reduces number of errors through automation
- Improved Client Engagement -> Saves time in rectifying errors in input files, clients have better control of their own data

## 4. Interface

### Uploading of files directly into cloud server

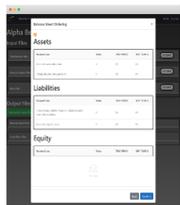
Users can initiate the auditing process remotely and generate BSPL at will.

**Archiving of past engagements** : All past engagements are archived and stored in the cloud database for easy access



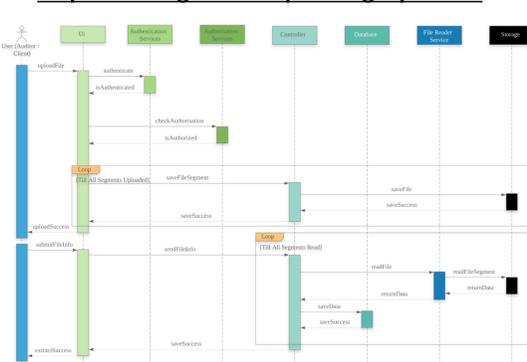
**Highly customizable output structures**: Freedom to select how to display their generated BSPL data

**Saved unique user preferences**: Automatically saves and suggests user selection options based on previous engagements



## 5. Sequence Diagram

### Sequence Diagram for uploading input files



### Interactions between all 7 layers of entities

- User logs in using **Microsoft Outlook**
- Authenticating Service : **IdentityServer4**
- Framework built on : **ASP.net core**
- Database : **Postgres SQL**



## 6. Analysis and Results

### Reduction in man hours

| Activity                         | Before (mins) | After (mins) | % improvement |
|----------------------------------|---------------|--------------|---------------|
| Error spotting in Trial Balance  | 10            | 5            | 50%           |
| Mapping account classes          | 240           | 30           | 87.5%         |
| Cross checking data with clients | 480           | 15           | 96.9%         |
| Rolling Forward of BSPL data     | 960           | 10           | 99.0          |
| Data Cleaning                    | 1440          | 1440         | 0%            |
| <b>Total</b>                     | <b>3130</b>   | <b>1500</b>  | <b>52.1%</b>  |

### Findings from analysis

- Automating routine manual work experienced **>90% improvement**
- Delegating assignment of account classes to the client side received **87.5% improvement**
- Data Cleaning is out of scope : **0% change**

Overall performance increased by **52.1%**

## 7. Conclusion and Insights

### Insights

- Significant savings on manhours and increased productivity with the help of automation
- Improved streamlined process which reduces inefficiencies in the system

### Possible future directions

- Optimization of audit team size
- Look into ways to reduce time taken for data cleaning
- Implement more features in the web application to suit users' needs
- Constant updating of software to ensure up-to-date security and versioning