Business Intelligence and Analytics applied to a collaboration platform.

Adriana Patricia Devera La Rosa
To the loving memory of my father, Nelson Devera
Who passed away in May 2014.
To my Mum Felicidad, my sister Andrea and my brother Mauricio;
For all their support.
Abstract

**Business Intelligence and Analytics applied to a collaboration platform**

*Adriana Patricia Devera La Rosa*

Idefusion AB is a start-up company which has developed a platform to simplify the collaborative process between companies' employees, university students and people in private life. Their main focus lies on skilled people such as company employees to produce cases based on problems in their work life. These problems can be solved together with students in an interactive environment where the employee can ask, follow up questions and create a crowdfunding environment of ideas. The platform is created for multiple usage areas, such as to make possible for students to interact with a company representative (e.g. a recruiter) and build a valuable network with it, this usage includes interactions between professors and students for different subjects. At the same time, employees can use their platform as both an intranet and a tool to develop ideas and recruit knowledgeable students.

The platform manages profiles with different type or users, where each user can have multiple profiles, related them to different type of organisations such as either companies or universities. These profiles have their own features with separated modules, but the profile types are accessible from each other but separating their user information and give them different tools depending on their organisation type.

Idefusion AB receives a big amount of data that come from users who uses the features included at the platform.

In order to gain an increasing insight about their users, Idefusion AB wants to adopt their own BI&A module according to their needs, this research has included a variety usage of different BI&A tools such as Tableau, Piwik, Open Web, SAS, Google AdSense + Google Analytics, and client server insights; all for increasing the understanding on how to see insight from the extraction of the user’s data hosted in a cloud service called AWS, all these tools were compared according to their features.

The insights were possible to extract by creating scripts added to Idefusion pages with the purpose of connecting the platform with the tools for to observe what do they bring, what do they offer and for to see the usability of the platform in general.

After getting results from the insights Idefusion AB confirmed their needs to create and developed their own BI&A module, this to get their data in a specific way, for making a decision of developing further their actual features or creating new ones.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>LIST OF TABLES AND FIGURES</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>1. INTRODUCTION</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>1.1 THE PROBLEM</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>1.1.1 Description of the problem</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>1.2 General Tasks</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>1.3 Specific Tasks</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>2. BACKGROUND</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>2.1 THE COMPANY</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>2.1.1 Background of the company</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>2.1.2 Idefusion Platform</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>2.1.3 Idefusion Platform</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>2.1.3.1 Company user admin</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2.1.3.2 University user admin</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2.1.3.4 Idefusion Analytics requirements</td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>3. RESEARCH METHODOLOGY</td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>3.1 Research questions</td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>3.2 Purpose</td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>3.3 Delimitations</td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>3.4 Review of literature</td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>4. THEORETICAL BACKGROUND</td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>4.1 Business intelligence (BI)</td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>4.2 Analytics</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>4.2.1 Descriptive BI &amp; A using EUCS model</td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>4.3 Cloud Computing</td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>4.3.1 Cloud and some tools</td>
<td></td>
<td>33</td>
</tr>
<tr>
<td>4.3.2 Cloud clients</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>4.3.2.1 SaaS Analytics</td>
<td></td>
<td>34</td>
</tr>
</tbody>
</table>
4.3.2.2 PaaS Analytics.................................................................................. 35
4.4 Idefusion Deployment.............................................................................. 39
4.5 Features of Idefusion platform where Analytics can be studied and applied .............................................................................. 41
5. APPLICATIONS USED FOR GETTING INSIGHTS ANALYTICS FROM
IDEFUSION PLATFORM DATA......................................................................... 42
  5.1 Tableau ................................................................................................. 42
  5.2 Piwik ..................................................................................................... 42
  5.3 Open web Analytics .............................................................................. 43
  5.4 Idefusion client server (Statistics general insights) ................................ 44
  5.5 Google Analytics .................................................................................. 44
  5.6 Statistical Analysis System S.A.S. ......................................................... 44
6. RESULTS AND ANALYSIS ...................................................................... 49
7. REQUIREMENTS FOR ANALYTICS MODULE AT IDEFUSION .............. 52
  7.1 DEVELOPMENT ................................................................................... 52
     7.1.1 Events attended during the degree project process ...................... 52
     7.1.2 Certification phase ........................................................................ 52
  7.2 User Analysis ....................................................................................... 53
     7.2.2 Interacting with users .................................................................... 54
     7.2.3 Statistical analysis of usage ............................................................ 54
  7.3 Personas and Scenarios ....................................................................... 54
     7.3.1.1 Persona 1 - Middle aged academic worker ............................... 55
     7.3.1.2 Persona 2 - Young adult searching looking for career .............. 57
     7.3.1.3 Persona 3 - Self learned entrepreneur ....................................... 59
     7.3.1.4 Persona 4 - University employee for content management ....... 60
     7.3.1.5 Persona 5 - Superadmin for an IT startup company ..................... 61
  7.4 Scenarios ............................................................................................. 63
  7.5 Design Solution .................................................................................... 64
8. RECOMMENDATIONS ............................................................................. 65
9. CONCLUSIONS ....................................................................................... 66
REFERENCES .............................................................................................. 67
APPENDIXES ............................................................................................... 70
LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>API</td>
<td>Application Programming Interface</td>
</tr>
<tr>
<td>AWS</td>
<td>Amazon Web Service</td>
</tr>
<tr>
<td>BI&amp;I</td>
<td>Business Intelligence &amp; Analytics</td>
</tr>
<tr>
<td>BI</td>
<td>Business Intelligence</td>
</tr>
<tr>
<td>CRM</td>
<td>Customer Relationship Management (Business based on the relationships with clients)</td>
</tr>
<tr>
<td>DSS</td>
<td>Decision Support System</td>
</tr>
<tr>
<td>EC2</td>
<td>Elastic Cloud Computing</td>
</tr>
<tr>
<td>EIS</td>
<td>Executive Information System</td>
</tr>
<tr>
<td>EUC</td>
<td>End-User Computing</td>
</tr>
<tr>
<td>EUCS</td>
<td>End-User Computer Satisfaction</td>
</tr>
<tr>
<td>GA</td>
<td>Google AdSense</td>
</tr>
<tr>
<td>HTML</td>
<td>Hypertext Mark-up Language</td>
</tr>
<tr>
<td>IaaS</td>
<td>Infrastructure as a Service</td>
</tr>
<tr>
<td>MVC</td>
<td>Model View Controller</td>
</tr>
<tr>
<td>OLAP</td>
<td>On-line Analytical Processing</td>
</tr>
<tr>
<td>PaaS</td>
<td>Infrastructure as a Service</td>
</tr>
<tr>
<td>PR</td>
<td>Public relations</td>
</tr>
<tr>
<td>SaaS</td>
<td>Software as a Service</td>
</tr>
<tr>
<td>SAS</td>
<td>Statistical Analysis System</td>
</tr>
<tr>
<td>SOA</td>
<td>Service-Oriented Architecture</td>
</tr>
<tr>
<td>TAM</td>
<td>Technology Acceptance Model</td>
</tr>
<tr>
<td>UCI</td>
<td>Usage Continuance Intention</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
</tbody>
</table>
LIST OF TABLES AND FIGURES

Table 1. Analytics tools used at the research and the comparison between them

Figure 2. “Specific tasks for the degree project”.

Figure 3. “Idefusion AB division”.

Figure 4. “Idefusion platform basic overview of the 5 different profiles”.

Figure 5. “Private user, personal information data shown”

Figure 6. “Specific tasks for the degree project”.

Figure 8. “Company user, work profile info shown”.

Figure 9. Private user creating profiles at the about page.

Figure 10. When a user creates a profiles, it will appear on a list at the private user

Figure 11. “Idefusion Platform, better insight of modules”.

Figure 12. “Private user forum”.

Figure 13. “Company user forum”.

Figure 14. “University user forum”.

Figure 15. “University user Admin view”.

Figure 16. “University Admin User structure”.

Figure 17. “How university forums are connected with student’s profiles and company
profiles (private users adding study profiles and work profiles)”.

Figure 18. “Cloud computing world”.

Figure 19. “Cloud computing clients that work with Analytics”.

Figure 20. “PaaS cloud service illustration”.

Figure 21. “EC2 instance illustration”.

Figure 22. “AWS EC2 instance connected to other instances and services”.
1. INTRODUCTION

Idefusion AB is a company that is developing a collaborative platform called Idefusion, this one is for connecting companies and universities by finding students to solve specific problems such as degree projects, group assignments and so on. Companies are able to find a skilled student or the right applicant when they use the recruitment module, and so many more solutions that will be seen at the following research.

This platform manages profiles, where users are able to have more than one. Gets from users a huge amount of data, which is impossible to analyse and review with a simple insight. The most of this generated data do not show the information needed at the time Idefusion AB has to make a decision, or would like to see the usability of their platform, so, for being able to used them, it is important to transform the data into useful knowledge.

These data are transformed into information when are analysed and are structured in a smart way. Actually, possessing knowledge that comes from understandable information, detailed, relevant and useful is vital to achieve and sustain a competitive advantage in the corporate world. To transform the data and convert it into information, and use it as knowledge, are needed different techniques and processes. All of these data processes are related to Business Intelligence (BI).

Business intelligence is defined as the ability of decision-making. This is achieved through the use of methodologies, applications and technologies that enable people to collect, debug, transform data, and apply them with analytical techniques of extraction of knowledge (Parr 2000), the data can be structured so that indicate the characteristics of an area of interest.
(Stackowiak et al., 2007), generating knowledge about business problems and opportunities to which can be corrected and exploited respectively. (Ballard et al., 2006)

Analytics is the discovery, interpretation, and communication of meaningful patterns in data. Especially valuable in areas rich with recorded information into the database, analytics relies on the simultaneous application of statistics, computer programming and operations research to quantify performance.

The most of organizations may apply analytics to business data to describe, predict, and improve business performance. Specifically, areas within analytics include predictive analytics, prescriptive analytics, enterprise decision management, retail analytics, store assortment and stock-keeping unit optimization, marketing optimization and marketing mix modelling, web analytics, sales force sizing and optimization, price and promotion modelling, predictive science, credit risk analysis, and fraud analytics. Since analytics can require extensive computation (see big data), the algorithms and software used for analytics harness the most current methods in computer science, statistics, and mathematics [8].

BI&A allow people to make predictions and detecting errors to trigger them for decision making at the time of doing a business on time.

Cloud computing is a type of Internet-based computing that provides shared computer processing resources and data to computers and other devices on demand. It is a model for enabling ubiquitous, on-demand access to a shared pool of configurable computing resources (e.g., computer networks, servers, storage, applications and services), which can be rapidly provisioned and released with minimal management effort. Cloud computing and storage solutions provide users and enterprises with various capabilities to store and process their data in either privately owned, or third-party data centers. This technology relies on sharing of resources to achieve coherence and economy of scale, similar to a utility (like the
electricity grid) over an electricity network. It enables organizations to focus on their core businesses instead of spending time and money on computer infrastructure.

1.1 THE PROBLEM

1.1.1 Description of the problem

Idefusion has developed a collaborative platform for private, study and work purposes, this platform possess 3 different types of users, denominated as private, company and university users (company and university are referred to as organization profiles). A private user can use this platform for private use and later registate additional company or university users with modules for project management, in an intranet setting.

These multiple user profiles are used for different needs and creates valuable data which needs to be analysed both for both further beta testing and development as well as for sales and marketing intelligence. For Idefusion it's important to get control of their data and make it possible to track numbers of users accounts, location of users, type of devices used, forums created, and so on. The main problem Idefusion is facing at the moment is to make clear what type of data is relevant to track for later on, after getting insights it should develop their own analytics module or improving an existing one.
1.2 General Tasks

Studying Idefusion platform features and researching about BI&A processes and getting general insights that comes from their data hosted at an instance at cloud computing.
The following report is made up of five chapters, the first chapter describes the company Idefusion AB, what do they do and the solutions they offer. In the second chapter it is described the methodology used for the research of this degree project. In the third chapter, whose name is Theoretical Framework, the theoretical concepts applied during the development of the system are defined, also here there are concepts about Business intelligence, analytics and cloud computing. In the fourth chapter titled was described, which was used for the development of the project. In the fourth chapter called Development, the process of designing and developing the solution is described. Finally, the conclusions, recommendations, references consulted and the appendixes of the study are available as well.
2. BACKGROUND

2.1 THE COMPANY

2.1.1 Background of the company

Idefusion AB is a startup company that builds software for the needs of businesses to simplify the process for organizations such as companies to have a better communication with students at university level. Students also would like to interact more with their teachers/professors, this for solving problems, asking questions about an assignment and so on. This company has developed a platform for being able to have a collaboration between companies and students at the university for finding solutions together. The platform has so many features now for users to have insights of the traffic into the platform, followers, and how to they share the information, companies are able to do their own network according to organization’s email address. The key feature of this platform are the forums that they manage there, later on all forums and features will be explained and illustrated for to know what is this study about.

![Diagram of IDEFUSION AB division]

*Figure 3. “IDEFUSION AB division”.*
2.1.2 Idefusion Platform

Idefusion is a platform for connecting companies and universities and get collaboration from students to solve a problem by using a forum, this platform has 2 different types of accounts, denominated them as private and organisations, a private user will have a profile and can create 2 more different types of profiles inside at their about page, these profiles are called work profile and study profile, a user can have as many as user they would like to have.

Idefusion platform has 5 different types of profiles, such as private, company, university, company admin and university admin, so, the division of Idefusion platform profiles can be seen at the following figure:

![Idefusion Platform Diagram](image)

*Figure 4. “Idefusion platform basic overview of the 5 different profiles”.*
A private profile includes basic information:

- Profile picture
- User’s Name
- Email address
- Location
- Counters:
  - 1) Nr. of Connections
  - 2) Nr. of Followers
  - 3) Nr. or Forums as (Forums the user moderates)
A company profile includes:

- Work, current position
- Location
- Phone number
- E-mail (only current for the user profile, the work email address)
- Counters:
  - 1) Nr. of Connections
  - 2) Nr. of Followers
3) Nr. or Forums as (Forums the user moderates)

A private user has 5 different tabs, such as about, forum, contact, documents and more (calendar, jobs, projects).

A private user at the about page will add relevant information to their profile, also is able to create other types of profiles such as work and study profile. So, a user could have a private profile, and at the same time 3, 2 or 1 more by adding the information at their about page.

Figure 8. “Company user, work profile info shown”.

A private user at the about page will add relevant information to their profile, also is able to create other types of profiles such as work and study profile. So, a user could have a private profile, and at the same time 3, 2 or 1 more by adding the information at their about page.
Figure 9. Private user creating profiles at the about page.

Figure 10. When a user creates a profiles, it will appear on a list at the private user.
The next tab is Forum, there, the user will see all created forums, the one has followed or the ones who has received invitations from other users.

Contact, is a tab for managing contacts at private user, all types of users can be added at this tab.

Documents, is a tab where a user will be able to add different types of documents, coming them from forums or from the local storage device.

More is a tab that includes calendar, jobs (the user applies to job and can see them at this tab, also will see job offers), projects (the ones the user has been added to solve), all types of users manage their own tabs, so, for example, a private user profile cannot see what the company profile has at a documents tab, every tab is independent, so the user will have data in all 3 types of profiles.
2.1.3 Idefusion Platform

![Diagram of Idefusion Platform]

*Figure 11. “Idefusion Platform, better insight of modules”.*
Figure 12. “Private user forum”.
Figure 13. “Company user forum”.

Company user
Figure 14. “University user forum”.
2.1.3.1 Company user admin

The company admin is just able to see the user’s forums, review them and is able to send messages or block the user if the content of the forum is improper, is able to accept partners, and make their own network.

2.1.3.2 University user admin

The university admin user is just able to see the user’s forums, review them and is able to send messages or block the user if the content of the forum is improper, its tasks includes adding a new sub admin, professors, students and making the university network itself.

![Uppsala University](image-url)

*Figure 15. “University user Admin view”. "*
Figure 16. “University Admin User structure”.
Figure 17. "How university forums are connected with student's profiles and company profiles (private users adding study profiles and work profiles)."
2.1.3.4 Idefusion Analytics requirements.

Reviewing the literature, researching existing analytics tools applying business intelligence
and analytics to Idefusion platform features for afterwards preparing requirements according
to the insights and results of the applications for this purpose and preparing new requirements
for developing their own analytics module for to see all the activities inside the platform,
what all users do, how many followers do they have, activities such as forum creation and
usability of it. The case study is the platform, specifically the feature forum, this data is kept
on the cloud, Business Intelligence and Analytics.

3. RESEARCH METHODOLOGY

3.1 Research questions

The questions that are presented below are the main tasks to be covered in this study.

1. What are the key determinants of Business Intelligence and Analytics success in general?
2. Why is it necessary to apply BI&A strategies at a collaboration platform such as Idefusion?
3. How is Idefusion AB able to do a BI&A study that provides reports and insights from the
   platform?
4. How will Idefusion AB develop an analytics module for their company users which
   enables them to receive insights gaining their recruitment experience?
5. How can a BI&A module track, improve user experience and increase participation in
   forums?

3.2 Purpose
The purpose of the study is to examine the behaviour of the user when he/she interacts with Idefusion platform, which features do they use more (getting focus on the forum) and general insights about usage and performance of the platform.

3.3 Delimitations

As this is a research, and will include a lot of testing between tools for afterward comparing them it will not be able to develop an application for Idefusion platform for to study their own analytics results, meaning this that this degree project will, but it will include a front end implementation for their analytics according to the requirements found at this study.

According to the specifications and reviewing a bit the literature BI&A, therefore, does not provide insights about the area of BI in general, even though the results could be applicable to other BI&A categories, namely prescriptive and/or predictive. It will examine only how users manage their data at the time they use the platform, so it is limited to individuals' perspective.

3.4 Review of literature

The literature review has been developed by reviewing books that explains BI, BI&A, Analytics itself and cloud computing, also the review consist in seeking specific information, relevant to this degree project.

The review included papers done for business students at Lund University, degree projects about cloud computing and some studies that have shorten or extended usage of BI for decision making and Analytics for analysing data on a web application.
4. THEORETICAL BACKGROUND

Business Intelligence is applied for transforming data into information and information into knowledge, so IT applications are able to do this task if they are programmed correctly. Although this research will include experiments applied to Idefusion platform by using different tools and observing which data is brought from there and what is relevant for usage and preparing new requirements for preparing a development to design and implement an interface for creating a basic analytics exclusive for Idefusion platform data. It is important to define an architecture from the business perspective to make a decision on which are the needs of the company for developing this.

4.1 Business intelligence (BI)

In an increasingly globalized world, competition on the markets becomes harder for all involved players and thus boosts the individual need for higher efficiencies and a clearer differing significant due to a higher need for accuracy on the one hand and the opportunities made possible by the introduction of modern technologies such as Decision Support System (DSS) and BI on the other. Leveraging these technologies in the right way will lead to smarter decision making and hence to an advantage over the competitors. BI software arose from ongoing development of DSS on applying simple sensitivity analysis.

According of what Golfarelli, Rizzi, and Cella (2004) says at their article “Business Intelligence?”, where they define Business Intelligence as “the process of turning data into information and then into knowledge (Analytics information for example)”. Negash and Gray (2003) in their article Business Intelligence, go further on to explain Business Intelligence systems as being responsible for data gathering, data storage and knowledge management with analytical tools to present complex and competitive information to planners and decision makers. Both definitions point to the fact that Business Intelligence is a tool used within organizations to gather precise information about business operations, customers and also
competitors which will enable decision makers to make more fact based decisions and leverage their competitive advantage. xom, 2007). Since then it has become an increasingly pervasive tool being used by companies and has taken many variations

**Business experiments:** Business experiments, experimental design and AB testing are all techniques for testing the validity of something – be that a strategic hypothesis, new product packaging or a marketing approach. It is basically about trying something in one part of the organization and then comparing it with another where the changes were not made (used as a control group). It’s useful if you have two or more options to decide between.

**Visual analytics:** Data can be analysed in different ways and the simplest way is to create a visual or graph and look at it to spot patterns. This is an integrated approach that combines data analysis with data visualization and human interaction. It is especially useful when you are trying to make sense of a huge volume of data.

**Scenario analysis:** Scenario analysis, also known as horizon analysis or total return analysis, is an analytic process that allows you to analyse a variety of possible future events or scenarios by considering alternative possible outcomes. Use it when you are unsure which decision to take or which course of action to pursue.

### 4.2 Analytics

Analytics is the process of using and analysing a large quantum of data (numbers, text, images, and so on) by aggregating, visualizing/creating dashboards, checking repetitive trends, and creating models on which decisions can be made [S. Tripathi, Learn Business Analytics in Six Steps Using SAS and R, page 3 and Chapter 1, The Process of Analytics, 2016]

Opinions expressed by Forbes Contributors are their own. The goal of any business analytic
tool is to analyse data and extract actionable and commercially relevant information that you can use to increase results or performance. But with so many tools available it can be difficult to know what to use and when. (Making a comparison and a study for at least 5 then i will know)

It might be useful to look at some of the key analytics tools in use today and how they can be used in Idefusion platform.

The Dawn of Business Intelligence (REVIEWING AT 07/05/2017)

Typically, early business applications and ERP systems had their own databases that supported their functions. This meant that data was in silos because no other system had access to it. Businesses soon realized that the value of data can increase manyfold if all the data is in one system together. This led to the concept of a data warehouse and then an enterprise data warehouse (EDW) as a single system for the repository of all the organization’s data. Thus, data could be acquired from a variety of incompatible systems and brought together using extract, transform, load (ETL) processes. Once the data is collected from the many diverse systems, the captured data needs to be converted into information and knowledge in order to be useful. The business intelligence (BI) systems could therefore give much more coherent intelligence to businesses and introduce the concepts of one view of customers and customer lifetime value. One advantage of an EDW is that business intelligence is now much more exhaustive. Though business intelligence is a good way to use graphs and charts to get a view of business progress, it does not use high end statistical processes to derive greater value from the data. The next question that business wanted to answer by the 1990s–2000 was how the data can be used more effectively to understand embedded trends and predict future trends.

The business world was waking up to predictive analytics. What are the types of analytics that exist now? The analytics journey generally starts off with the following:
• Descriptive statistics: This enables businesses to understand summaries generally about numbers that the management views as part of the business intelligence process.
• Inferential statistics: This enables businesses to understand distributions and variations and shapes in which the data occurs.
• Differences statistics: This enables businesses to know how the data is changing or if it’s the same.
• Associative statistics: This enables businesses to know the strength and direction of associations within data.
• Predictive analytics: This enables businesses to make predictions related to trends and probabilities. Fortunately, this is the era of software, which can help people do the math, which means analysts can focus on the following:
  • Understanding the business process
  • Understanding the deliverable or business problem that needs to be solved
  • Pinpointing the technique in statistics that will be used to reach the solution
  • Running the SaaS to implement the technique
  • Generating insights or conclusions to help the business [S. Tripathi, Learn Business Analytics in Six Steps Using SAS and R, page 7 and Chapter 1 ■ The Process of Analytics, 2016]

4.2.1 Descriptive BI&A using EUCS model.

So the study will be made using EUCS model in a descriptive context. This can be used for beta version I think

4.3 Cloud Computing

Cloud computing is a global technology that is offering businesses of all types an alternative way to have an information system for their business. Businesses are good at what they do and it is a fact that in today’s competitive world they need a reliable computing system to achieve their goals. Traditionally businesses of all types developed their own in-house computing system, with or without
help from external partners. For small and medium sized businesses, it is a distraction to have to concentrate on having their computing system functional. It costs both time and money to manage an information system [7].

4.3.1 Cloud and some tools

*Figure 18. "Cloud computing world".*
4.3.2 Cloud clients

4.3.2.1 SaaS Analytics

Business Applications Such as email, CRM (Customer Relationship HCM (Human Capital Management), and ERP (Enterprise Resource Planning), are delivered as a service. Usually these are Delivered to the end users through a Web browser. Currently there are Hundreds of available SaaS service offerings ranging from Enterprise applications Horizontal applications to specialized applications for specific industries, and Consumer applications such as web-based email. Oracle CRM On Demand is an example of a SaaS offering that provides both multi-tenant and single-tenant, Depending on the customer's preference. AWS has this technology and they call it SaaS partners. Hundreds of independent software vendors have built its software as a service independently. Some Examples of this model are Oracle Fusion HCM Cloud Service, Oracle Fusion CRM Cloud Service, Oracle RightNow CX Cloud Service and Oracle Taleo Cloud Service [1]

The International Data Corporation (IDC - Press Release, 2010), in a recent report states that in 2010 SaaS BI will be the hottest segment in BI and that it will experience triple the growth of the market overall. Since Business Intelligence has been a growing sector for several years and is expected to
become more and more important for all types of companies regardless of the industry, size or region they act in, this is an extremely young and exciting field to conduct research in. SaaS as a relatively new technology is expected to change the market allowing smaller players to incorporate advanced analytics and reporting in their SMEs) perspectives to investigate the impact of SaaS BI. The new offering of SaaS BI will be compared to the established and prevalent on-premise solutions which have been around for decades evolving from the domain of Decision Support, Executive and Management Information Systems (DSS / EIS / MIS). Special interest will be paid to factors in the software purchasing process which are decisive in helping organizations determine whether to invest into SaaS BI rather than an on-premise system or vice versa. Interest will also be paid to investigating the perceived benefits (tangible or intangible) that were realized as a result of utilizing the system. The aim is to provide a model for SME adoption of BI with respect to important decision factors they considered and the business value achieved as a result of utilizing their chosen BI solution.

SaaS is a subscription based server that can be upgraded depending of that subscription (time and cost) and this software is available until the subscription expires. So a company just pay for the service, without needing to buy a server and having to pay a lot of money at a datacenter for maintaining that server.

Customer Relationship Management

4.3.2.2 PaaS Analytics

A platform-as-a-service (PaaS) provides infrastructure and a software layer on which a web application is deployed. Running a web application from a PaaS removes the need to know as much about the underlying servers, operating system, web server, and often the WSGI server.

The PaaS layer defines how the application accesses resources such as computing time, files, and external services. The PaaS provides a higher-level abstraction for working with computing resources than deploying an application to a server or IaaS.
A PaaS makes deployment and operations easier because it forces the developer to conform applications to the PaaS architecture. For example, AWS Elastic Beanstalk looks for Python's requirements.txt file in the base directory of the repository during deployment because that is the file's de facto community standard location. It also sees the settings.py file, where are all the instructions for that server.

Platform as a Service (PaaS): The platform for development and Deployment of the applications is delivered as a service to the developers that the Used to build, deploy and manage SaaS applications.

The platform Generally includes databases, middleware and development tools, all of which Delivered as a service over the Internet. PaaS offers are often specific to a programming language or API, such as Java or Python. An architecture Grid computing is often the basis for PaaS offerings because grid Provides elastic scalability and pooling of required resources. Oracle Provides a full range of PaaS products for cloud service providers Public, as well as for business customers who want to build their own clouds Public policies. Python apps in the cloud, easy deployment and better configuration.
Amazon Web Services (AWS)

Amazon Web Services (AWS) is a subsidiary of Amazon.com that offers on-demand cloud computing platforms. These services operate from 16 geographical regions across the world. They include Amazon Elastic Compute Cloud, also known as "EC2", and Amazon Simple Storage Service, also known as "S3". As of 2016 AWS has more than 70 services, spanning a wide range, including compute, storage, networking, database, analytics, application services, deployment, management, mobile, developer tools and tools for the Internet of things. Amazon markets AWS as a service to provide large computing capacity quicker and cheaper than a client company building an actual physical server farm.
Cloud computing for AWS is the on-demand delivery of compute power, database storage, applications, and other IT resources through a cloud services platform via the internet with pay-as-you-go pricing.

AWS Elastic Beanstalk Easy to begin, Impossible to outgrow AWS Elastic Beanstalk is an easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, Nginx, Passenger, and IIS. You can simply upload your code and Elastic Beanstalk automatically handles the deployment, from capacity provisioning, load balancing, auto-scaling to application health monitoring. At the same time, you retain full control over the AWS resources powering your application and can access the underlying resources at any time. There is no additional charge for Elastic Beanstalk - you pay only for the AWS resources needed to store and run your applications.

**Elastic Cloud Computing (EC2)**

Amazon Elastic Compute Cloud, also known as "EC2" is an IaaS service providing virtual servers controllable by an API, based on the Xen hypervisor. Equivalent services include Google Compute Engine and Rackspace or on-premises equivalents such as Amazon Elastic Compute Cloud (EC2) forms a central part of Amazon.com's cloud-computing platform, Amazon Web Services (AWS), by allowing users to rent virtual computers on which to run their own computer applications. EC2 encourages scalable deployment of applications by providing a web service through which a user can boot an Amazon Machine Image (AMI) to configure a virtual machine, which Amazon calls an "instance", containing any software desired. A user can create, launch, and terminate server-instances as needed, paying by the hour for active servers – hence the term "elastic". EC2 provides users with control over the geographical location of instances that allows for latency optimization and high levels of
redundancy [1]. In November 2010, Amazon switched its own retail website to use EC2 and AWS [2].

4.4 Idefusion Deployment

*Figure 21. “EC2 instance illustration”.*
Figure 22. "AWS EC2 instance connected to other instances and services".
4.5 Features of Idefusion platform where Analytics can be studied and applied.
5. APPLICATIONS USED FOR GETTING INSIGHTS ANALYTICS FROM IDEFUSION PLATFORM DATA.

5.1 Tableau

Tableau is business intelligence software that helps people see and understand their data. It has fast analytics which is able to connect and visualize data in minutes. This tool is ease of use, so anyone can analyse data with intuitive drag & drop products. No programming skills are needed, just an insight of it. This is able to analyse Big Data, and any Data that comes from spreadsheets to databases to cloud services, explore any data. It includes smart dashboards to combine multiple views of data to get richer insight. Best practices of data visualization are baked right in.

The data is update automatically, it gets the freshest data with a live connection to that data and gets automatic updates on a schedule a person defines.

Tableau helps people transform data into actionable insights. Explore with limitless visual analytics. Build dashboards and perform ad hoc analyses in just a few clicks. Users are able to share their work with anyone and make an impact on your business. From global enterprises to early-stage startups and small businesses, Tableau is used to see and understand data.

5.2 Piwik

Piwik is a free and open source web analytics application written by a team of international developers that runs on a PHP/MySQL webserver. It tracks online visits to one or more websites and displays reports on these visits for analysis. This software has been translated to more than 45 languages.

Piwik displays reports regarding the geographic location of visits, the source of visits (i.e. whether they came from a website, directly, or something else), the technical capabilities of
visitors (browser, screen size, operating system, etc.), what the visitors did (pages they viewed, actions they took, how they left), the time of visits and more. In addition to these reports, Piwik provides other features for analysis of the data it accumulates, such as:

Annotations, which has the ability to save notes (such as one's analysis of data) and attach them to dates in the past.

Transitions, is a feature similar to Click path-like features that allows one to see how visitors navigate a website, but different in that it only displays navigation information for one page at a time.

Goals, has the ability to set goals for actions it is desired for visitors to take (such as visiting a page or buying a product).

Piwik will track how many visits result in those actions being taken, includes E-commerce, which has the ability to track if and how much people spend on a website, also this tool has a page overlay, which is a feature that displays analytics data overlaid on top of a website.

5.3 Open web Analytics

Open Web Analytics (OWA) is an open source web analytics software that you can use to track and analyze how people use your websites and applications. OWA is licensed under GPL and provides website owners and developers with easy ways to add web analytics to their sites using simple Javascript, PHP, or REST based APIs. OWA also comes with built-in support for tracking websites made with popular content management frameworks such as WordPress and MediaWiki.
5.4 Idefusion client server (Statistics general insights)

Private host that has insights on the usability of the domain http://www.idefusion.com

5.5 Google Analytics

Google Analytics is a free Web analytics service that provides statistics and basic analytical tools for search engine optimization (SEO) and marketing purposes. The service is available to anyone with a Google account. Google bought Urchin Software Corporation in April 2005 and used that company’s Urchin on Demand product as the basis for its current service [http://searchbusinessanalytics.techtarget.com/definition/Google-Analytics].

5.6 Statistical Analysis System S.A.S

SAS is a software suite developed by SAS Institute for advanced analytics, multivariate analyses, business intelligence, data management, and predictive analytics.

SAS is a software suite that can mine, alter, manage and retrieve data from a variety of sources and perform statistical analysis on it. SAS provides a graphical point-and-click user interface for non-technical users and more advanced options through the SAS language.

In order to use Statistical Analysis System, Data should be in a spreadsheet table format or SAS format. SAS programs have a DATA step, which retrieves and manipulates data, usually creating a SAS data set, and a PROC step, which analyses the data. Each step consists of a series of statements. The DATA step has executable statements that result in the software taking an action, and declarative statements that provide instructions to read a data set or alter the data's appearance. The DATA step has two phases, compilation and execution. In the compilation phase, declarative statements are processed and syntax errors are identified. Afterwards, the execution phase processes each executable statement sequentially.
Data sets are organized into tables with rows called "observations" and columns called "variables". Additionally, each piece of data has a descriptor and a value. The PROC step (PROC means displays output) consists of PROC statements that call upon named procedures. Procedures perform analysis and reporting on data sets to produce statistics, analyses and graphics. There are more than 300 procedures and each one contains a substantial body of programming and statistical work.

PROC statements can also display results, sort data or perform other operations. SAS Macros are pieces of code or variables that are coded once and referenced to perform repetitive tasks. SAS data can be published in HTML, PDF, Excel and other formats using the Output Delivery System.

Needs virtualbox from oracle for being able to run it. There is a student version for this tool and is free, this is why this tool has been chosen to test it
<table>
<thead>
<tr>
<th>Tools</th>
<th>Observations</th>
<th>Date of testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tableau</td>
<td>- Blend data sources combine website data with offline data, customer records, demographics, social media, and more.</td>
<td>13/04/17, 14/04/17, 02/05/17</td>
</tr>
<tr>
<td></td>
<td>- Ease of use explore your website analytics data in an easy, visual way to find patterns and trends.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Powerful dashboards build dashboards for up-to-date analysis of traffic, content and source trends, all in one place.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Share with anyone, anywhere publish a dashboard with a few clicks to share with colleagues live on the web and on mobile devices.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Update automatically get the freshest data with a live connection to your data or get automatic updates on a schedule you define.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fast Analytics Connect and visualize your data in minutes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Is 10 to 100x faster than existing solutions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- It has a trial version that last 7 days, after this people has to pay for premium version</td>
<td></td>
</tr>
<tr>
<td>Piwik</td>
<td>- It is a very good tool that do not need to get connected to your database but it requires the person who is using it to configure a MySql database into their domain in order for piwik to save the data collected from the activity of the website such as clicking buttons, visiting and viewing.</td>
<td>17/04/17, 18/04/17, 19/04/17, 02/05/17</td>
</tr>
<tr>
<td></td>
<td>- There is a problem by seeing the country where the visitor comes from.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- General information is shown on the dashboard that piwik has.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- It is responsive and can be seen by using a mobile device such as tablets, ipads, mobile phones.</td>
<td></td>
</tr>
<tr>
<td><strong>Open Web Analytics</strong></td>
<td><strong>Idefusion client server (Statistics of)</strong></td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>- It offers real time analysis</td>
<td>- General insights of the website</td>
<td></td>
</tr>
<tr>
<td>- It is free because is a beta version but they ask for collaboration for continuing the development.</td>
<td>- It is not an analytical tool, but it shows traffic from the behaviour of the platform.</td>
<td></td>
</tr>
<tr>
<td>- Real time reports</td>
<td>- It shows location and traffic in a graphical way</td>
<td></td>
</tr>
<tr>
<td>- It as a delivery model of Open Source Software</td>
<td>- Show results per page and which pages has been visited most.</td>
<td></td>
</tr>
<tr>
<td>- Technologies PHP, MySQL, Javascript</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Cookie Model First Party Also has optional third party mode.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Has none data/loggins limit</td>
<td></td>
<td></td>
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<tr>
<td>- It measures site usage, page views, visits, etc.</td>
<td></td>
<td></td>
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<tr>
<td>- Click Heatmaps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Mouse Movements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- (recording and playback).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Reporting &amp; Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Javascript Tracking Client</td>
<td></td>
<td></td>
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<tr>
<td>- Programmed in PhP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Data Warehousing Is the core database schema implemented as a data warehouse.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- PHP Tracking Client</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- It is not free</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

03/05/17, 05/05/17, 06/05/17, 07/05/17
<table>
<thead>
<tr>
<th>general insights</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scenario Analysis (S.A.S.)</strong></td>
<td>07/05/17</td>
</tr>
<tr>
<td>- Friendly interface</td>
<td></td>
</tr>
<tr>
<td>- It has a student version</td>
<td></td>
</tr>
<tr>
<td>- Offers price by quote</td>
<td></td>
</tr>
<tr>
<td>- Trial version and premium version</td>
<td></td>
</tr>
<tr>
<td>- Combining business intelligence and analytics to discover and gather enterprise-level data.</td>
<td></td>
</tr>
<tr>
<td>- SAS Business Intelligence features that possess data visualization, easy analytics, mobile BI and reporting collaboration and self-service Business Intelligence</td>
<td></td>
</tr>
<tr>
<td>- Real time reports</td>
<td></td>
</tr>
<tr>
<td><strong>Google AdSense + google analytics</strong></td>
<td>07/05/17</td>
</tr>
<tr>
<td>- My ad</td>
<td></td>
</tr>
<tr>
<td>- Allow and block advertisements</td>
<td></td>
</tr>
<tr>
<td>- Performance reports</td>
<td></td>
</tr>
<tr>
<td>- Optimization</td>
<td></td>
</tr>
<tr>
<td>- It has a tracking code that must be added to every page of the website for being able to see the report at google website</td>
<td></td>
</tr>
<tr>
<td>- Real time reports</td>
<td></td>
</tr>
</tbody>
</table>

*Table 1. Analytics tools used at the research and the comparison between them*
6. RESULTS AND ANALYSIS

For Tableu server, which is used for analytics, it had a very friendly interface, this tool was able to be runned by connecting to Idefusion database directly, this tool is able to get connected to other database servers such as PostgreSQL.

**Figure 2.** “Specific tasks for the degree project”. Dashboard and overview of idefusion.com web domain of one year shown
Figure 25. “Specific tasks for the degree project”. Map overview of all the countries from visits at Idefusion.com

Figure 26. “Specific tasks for the degree project”. Traffic of Idefusion.com (overview of 1 year)

All reports are given per year
Piwik.

Figure 27. “Specific tasks for the degree project”. Dashboard overview of Idefusion.com web app from 2015 - 2017

Figure 28. “Specific tasks for the degree project”. Google Adsense + Google Analytics
7. REQUIREMENTS FOR ANALYTICS MODULE AT IDEFUSION.

7.1 DEVELOPMENT

7.1.1 Events attended during the degree project process

- AWS summit 2017
- AWS webinars deployment 2017

7.1.2 Certification phase

Google Analytics certification at 03/05/2017
Google Fundamentals certification
Google AdWords certification
7.2 User Analysis

In systems design, user analysis is the means by which scientists, engineers and technical writers determine the characteristics of users which will influence the development of software systems or other technological products [1]. During the process, developers in technical fields gather information about users of their products through interviews, focus groups and other forms of qualitative research. This is typically performed by forming use cases based upon the actual workflow tasks which the users will perform while using a given piece of technology. Such analyses are vital to the composition of software documentation. Though very distinct, user analysis is related to task analysis.

7.2.1 Approach

When developing new technology or software, identifying the potential users of a system and their attributes is necessary in order to ensure that said technology or software will be more user friendly.

During this development, the user analysis is the basic research phase which takes place before actual drafting of the technology's technical documentation [2]. In this way, it's typically the first step of the document composition process. Such an analysis is intended to result in tacit knowledge, or a set of facts regarding the users' values, behaviours, knowledge of the documentation and product and motivation for using said documentation and product [3]. Revealing the tacit knowledge of users' activities, as opposed to the simple operations which a given technology can perform, is often referred to as an unspoken but understood trick of the trade for the technical communicators who conduct user analyses [4]. A good technical communicator will perform a user analysis aimed at finding both what exactly a user needs to do, and what the user would do with the technology in question. Some experts in the field of user analysis have emphasized the importance of understanding the transfer of learning during this process [5], though the concept itself is a controversial one [6].
7.2.2 Interacting with users

User analysis is a process which calls for qualitative research. Because such research usually (though, not always) centered around human subjects, the degree of formality is an issue [7]. In the modern era, users are often reached via virtual communities, which themselves often form around the use of a particular technology.

7.2.3 Statistical analysis of usage

Besides traditional way to interacting with users, analysis can be done with statistical analysis of the usage of log of users. With artificial techniques like machine learning, tremendous analysis results can be generated in parallel [8].

7.3 Personas and Scenarios

The following task includes a design solution for developing the analytics module for Idefusion platform.

For being able to come with this solution, it was necessary to use personas with user stories and scenarios that included activities.

The design solution it cannot be done itself at the time that according to the interaction between people (personas).

All this task results involve:

- Based on interviews, observation and research.
- Serve as a guide to the design process for the analytics module.
- Does not substitute involving real users in the process.
**User stories:** is the written sequences of actions and events that lead to an outcome.

- Good stories are standalone, short and testable.
- Bridge between users, designers and developers.
- A quick way to process new requirements.
- Describes one specific need.
- Not too detailed.
- Testable in real time.

The user stories could be seen like: "As a <role>, I want to <do what> so that I could <benefit, how>".

E.g. "As a fashion designer teacher, I want to easily get connected to my students after classes and help them out for any issues they are handing on".

7.3.1 Personas for Idefusion.

After a user study based on interviews with people having different backgrounds, a feedback was received and got documented from a handful of representative personas (they were 5). These personas were then used in created some typical user scenarios for Idefusion platform, which then are going to be used in the design process.

7.3.1.1 Persona 1 - Middle aged academic worker

*Name: Axel*

*Computer Usage: Low*

*Social media Usage: Low*

- Private User

*General Description: Axel is 45 years old, happily married with 2 children of age 5 and 10. The most of his free time is spended together with his family in their house in Uppsala. His
private interests are fishing, sport and music. Because of his family situation, he lacks sufficient time to engage in his interests.

**Goals:**
- Since Axel lack time, he would like to have a platform where he easily can get oversight
- Axel also finds it important to discuss with people that have high level of knowledge in with same interests, without creating several accounts for niched platforms

❖ **Company User**

*General Description:* At work, Axel have a senior management position in one of the bigger pharmaceutical companies. In his work, he have to communicate with a wide variety of employees from different department. This is a demanding work and they have different systems for internal and external. Axel is also responsible for student collaborations and finds this process too long, he also finds it hard to get in contact with students and to follow their work progress.

**Goals:**
- Axel would like to have one company platform where he easily can collaborate with all other employes and at the same time invite external users through one platform.
- He also would like to get an overview of what people are working with and make it possible for other employees to give feedback on his work
- Axel wants a platform where he can initiate ideas for students and collaborate with them as a group

❖ **University User as Alumni**
**General Description:** Even though there were almost 20 years ago since Axel finished his study, he would like to connect with his old classmates, participate in events and discuss new technology with current students, in a easy way that his current University Alumni provide him.

**Goals:**
- A site where old students can continue discussing topics with other students
- Create the Alumni connected as an addition to the users Private and Work users and make Alumni network easier and more attractive to access.

7.3.1.2 Persona 2 - Young adult searching looking for career

**Name:** Andrea  
**Age:** 25  
**Computer Literacy:** High  
**Social media app usage:** High (15-20 /week)

**General Description:** Andrea is 25 years old and she is a fashion designer who is doing a Master's in Business Administration and Management of Fashion, which also is here biggest private interest. At her free time, she tries to go to gym, spend time with her friends and family.

Andrea is an interactive person that is growing up so fast personally and professionally, she is planning to open her own company for designing kid’s swimwear. Since she wants to open a company, she looks for a place online where she can meet people with similar interest and discuss about startups. Andrea also would like to be able to get connected with fabric providers and other sellers that makes easier for her to make a decision.

Professor at Felicidad Duce Fashion Institute Barcelona, Spain, she works at this institute by teaching Patterns Design course, she has about 15 students and she would like to interact
with them after classes by having a communication and solving any doubt or issue the students has in every design project they have.

She is meanwhile studying Master's in Business Administration and Management of Fashion at Felicidad Duce Fashion Institute in Barcelona.

Goals:

- **Private User:**
  - Andrea wants to be able to create a personal profile and connected with other people that share her design interest.
  - With her big private interest in fashion and design, Andrea wants to be able to create and actively moderate her own forums.
  - Since she sometimes lack motivation in her gym training, she wants to join other training forums and become as a participant.

- **Company User (University Employee):**
  - With Andrea’s design interest both private and in work, she wants to be able to connect to users from private platform.
  - To create and lead a discussion with her students after classes and solve issues they find interesting.
  - Andrea would like the option to branch out the main topic into subtopics in order to so they can have discussion for different topics.
  - She want to become role model for here students and make her classes interesting.

- **University User (as an active student):**
• As a student she wants to be able to focus on her study, group assignments and relevant class/program discussions
• She wants to be automatically connected with all her classmates, professors and relevant staff at University
• Companies should be present in University User and an active part, driving discussions about interesting topics about thesis and design projects

7.3.1.3 Persona 3 - Self learned entrepreneur

_Name: Joel_
_Age: 34_
_Computer Literacy: High_
_Social media app usage: Medium (8-10h /week)_

_General Description:_

Joel is an entrepreneur that is opening his own company in IT, this company is related to IT consultancy, web development and IT services such as cloud computing. Joel has also a part time job as a programmer, so he is expending the other part of his time in his company. As Joel is new in the field, he would like to have a website or a portal when he can join other people with same interest or other startup companies that wants to talk about his issues. Joel also think it would be beneficial to get help from other “old” startup companies to solve common problems.

As is a startup company, Joel has only a few employees and he would like his company to grow in time of development.

_Goals:_

Company Admin:

- He wants to be able to try the usabilities of the function for free, at least one month
- The registration process should be easy and not take too long time
- He wants to be able to upload company information to present for visitors
- Possibility to set direct, daily or weekly updates to his mail
- Add employees to his platform
- Become partner with other companies and show your network for visitor

Company User:

- Main interest is to collaborate with other company user as well as private users. As a startup it's he lacks interest of becoming to theoretical
- University students could be interesting to him but had bad experience from previous University collaboration
- He wants to represent himself and his company in all forum

7.3.1.4 Persona 4 - University employee for content management

Name: Linnea
Age: 28
Computer Literacy: High
Social media app usage: High (20-30h /week)

General Description: Linnea is an employee from a university, she is responsible to have updated the content of the website of the university and any other information that appears online.

She also is responsible to contact students in case is needed.
Goals:

- University admin

- Linnea will create an account at Idefusion platform in order to have an organization’s account in this platform.

- After she creates the profile, she must wait until Idefusion super admin will accept her request and then Linnea will receive a notification by email with confirmation of an account and a password to let her in for the first time.

- She will be able to get into the platform and the first thing she will do is changing the password given (it was a random one), so after this she will be able to create a university network with students, employees and professors that not only are already on the platform but by adding them inside the network module. It will be also possible for her to see how many forums the users have created, and all the activity of them thank to a new analytics module for getting insights.

7.3.1.5 Persona 5 - Superadmin for an IT startup company

*Name:* Olle

*Age:* 33

*Computer Literacy:* Medium

*Social media app usage:* High (15-20h /week)

*General Description:*

Olle is a Master in Business and Entrepreneurship and lives in Uppsala. He works for a company as their CEO and is the founder of his company. Since Olle has his background in economics he understands the need to include an analytics module for not only to get insights
from the users, prioritizing of further development as well as for showing progress for investors.

**Goals:**

Being a super admin and having all the privileges for the access at the platform.

Olle is the super admin of idefusion platform, he works at the company full time and he is able to see how other people are using the platform.

He can monitor users and forums. He is able to deactivate or delete users from the platform.

At the admin panel, Olle is able to see how many users are registered and how many profiles do they have. So, if a user has 2 company users and 3 university users, then, Idefusion admin will be able to see this.

Created forums discussions and every subtopic inside will be able to create subtopics for different purposes.

Being a super admin and having all the privileges for the access at the platform.

Olle is the super admin of Idefusion platform, he works at the company full time and he is able to see how other people are using the platform.

He can monitor users and forums. He is able to deactivate or delete users from the platform.

At the admin panel, Olle is able to see how many users are registered and how many profiles do they have. So, if a user has 2 company users and 3 university users, then, Idefusion admin will be able to see this.
Created forums discussions and every subtopic inside will be able to create subtopics for different purposes.

7.4 Scenarios.

- Consists of goals, expectations, motivations, actions, and reactions.
- Aims to mirror the real context and usage.
- Does not yet include system-specific solutions. Eg.: "Olle creates a forum by clicking plus (+) button on the header...." Better: "Adriana proceeds to join...."
- Olle would like to collect and use data about:
  - Total numbers of Private, Work and Study users in the platform
  - Total numbers of Company and University platform registration
  - Variations, growth rates, peaks etc. related to specific dates which can be view later in graphs, diagrams etc.
  - User information about each user profile such as age, gender, interests etc. This data makes it possible to increase sales functions such as ads, promotion activities and recruitment by making sure that targeted content will reach a relevant target market
  - Locations is important to see if the forum is growing locally or worldwide, it is also important for Olle when marketing the platform to see if the campaign had expected impact in selected area
  - By collecting all relevant data, Idefusion has expectations to in a close future develop an analytics module where each user can see their own key data and present it for others in order to gain motivation and a way to build user credibility for other platform users.

7.4.1 Registering at Idefusion Platform.

1. Axel visits idefusion.com and decides to register himself at the platform.
7.4.2 Creating a Forum as a company user.

1. Andrea has just created a forum by using her company user for this purpose, she has the role as a professor, so she will be able to invite students, other professors and also people with the same type of profile, indeed there are cases that people with another type of user such as private, could be invited to the forum as well.
2. Andrea follows the steps for creating the forum and inside she makes all the invitations for adding all users.

7.4.3 A company user invites a private user to a discussion

1. Andrea invites all her students to the created forum.
2. Andrea creates 4 different subtopics inside the forum, 1 for questions and consults, another for projects, other for projects and the last one for feedback.
3. After having all people into one place, these students could join the different subtopics Andrea as a professor could create.

7.5 Design Solution

It is required to do an analytics module for Idefusion platform by using BI&A process to complete it, the personas studied before will help out for completing this task by describing their needs and after this i will do an activity flow for the usage of the platform and connecting them through the forum, so, the connection between people with different types of profiles could be seen as follows.

The personas and scenarios make easier to get the design solution for creating a new module for analytics that will be able to be manage for private, company and university users, as well for admin modules.
8. RECOMMENDATIONS

After reviewing Idefusion platform and being able to see how does it works, what does it have and who are the potential users, here are some recommendations that Idefusion AB company can follow for being able to build their own analytics module.

- A Dashboard that includes the following information:
  - User information.
  - How many contacts each user has.
  - Forum information (visits).
  - Personal data such as gender, age, interests and so on.
  - How many contacts, follower and connection between user types.
  - Forum information, such as created forums, joined forums, followed forums, nr. of post made in which forum tags etc.
  - Create aggregated views of relevant data (common data) disparate data.

That was done in order to know what activities are really driving results at the platform, it was very important to gather and analyze data about how users reach, interact with, usage and navigate at Idefusion platform. Using this information, could be used for all sorts of things, such as improve customer experience, increase resources for underperforming areas, or identify potential problems that users have when using the platform.

Analytics is the name given to software designed to allow companies or users to gather and interpret this kind of information. Without the correct analytical solution in place, this all becomes very hard to understand and gets. Web analytics can give to the company pretty much everything is needed to make smarter online marketing decisions.
Throughout this research has been used various analytics platforms such as Google Analytics, and this one was not about features of platforms or even how to use them. It studied more about general insights, counting visitors at every page of the web application.

It is recommended for Idefusion AB to adopt these technologies to take advantage of the power of BI&A in order to survive in the business world [4].

9. CONCLUSIONS

After finishing the research, it was possible to prepare a study by using personas and scenarios, this, in order to explore the usability of the platform for afterwards preparing a design of the new analytics module. That module will be used for bringing not only insights but results of the usability of the features that this platform includes, this, by making more concrete the people who will use the platform and the types of things they will do with it.

So, by using personas and scenarios, could be appreciated that it was more than a story or a narrative from a user’s perspective, a thought experiment that is used to help to explore a set of tasks and interactions that are required for the new BI&A module design. The created scenarios described the user's goals and motivations in real life. Describing specifics tasks that needed to be accomplished. This also was used to see some of the interaction, with enough detail to make it compelling, but not so much detail as to be overwhelming. Provides a shared understanding about what a user might want to do or need and how they might do it.

The scenarios helped to see how to construct the sequence of events that are necessary to address in the user interface of the platform.

It is important for mention that it was possible to give recommendations for the company to prepare the requirements of BI process include: Support for repeatable, operational decisions
rather than for infrequent strategic decisions made at the highest levels of an organization. Employment of advanced analytics for decision optimization and analytics-driven workflow addition of collaborative support on top of access to information by individuals. Business activity monitoring and also event-driven automation. Another benefit of business intelligence software is that it enables greater consistency in the way decisions are made. This is important not only for competitive reasons but also, increasingly, for compliance reasons, companies must demonstrate that decisions were not arbitrary, but followed established procedures.

Using BI initiatives at this research, can be seen that Idefusion AB could be gaining insights from growing volumes of data generated by applications such as web analytics. Enabling access to diverse data, manipulation and transformation of these data, and provide business managers and analysts the ability to conduct appropriate analysis and perform actions [15]. The insights are important to be seen in order to make observations on the behaviour of the user, what do they share, what do they do at the platform and the usability itself.

Idefusion AB could see the usage of their platform in real time and got insights from the users thank to BI&A.

Idefusion platform can have their own BI&A module developed with new requirements. This will be possible.

REFERENCES


Figure 2. “Specific tasks for the degree project”.
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Figure 2. “Specific tasks for the degree project”.

Statistics by one.com, server that host idefusion client

Dashboard
Traffic

Location
Technology

Piwik Installation
Piwik # Open Source Web Analytics

Congratulations
Congratulations! Your Piwik installation is complete.
Make sure your JavaScript code is entered on your pages, and wait for your first visitors!

Continue to Piwik »

Installation status
100 % Done

SAS installation

Thank you for creating a SAS Profile. You're almost done!
A verification email has been sent to the address you provided. To verify your email address and activate your profile, click the link in the email (subject: Please activate your SAS Profile). You will then be prompted to set a password.

It may take a few minutes for the email to reach your inbox. If you do not receive the email, check your junk email folder.

To ensure that emails from SAS are not blocked by your mailserver, add sas.com to your list of safe sender domains.

If you have trouble creating your SAS profile, send email to SASProfileHelp@sas.com.
Google analytics
Real time users report