Company Project # 2015-1428

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User Behavior Analysis Using Decision Trees

Abstract

Write something sensible.

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1   Introduction

2   Simplesite ApS

2.1   Product

Simplesite produce and manage an inhouse website Content Management System (CMS) and operate a hosting location where this CMS runs. Customers can register for a free account allowing them to host a website that is edited through the CMS. The free accounts are under restrictins on number fo pages, images and videos that can be added to the site. Customers can then change to a paid subscription which allows them to have more pages, images and videos on their website.

Simplesite also offer additional services to their customers that can be bought for an extra fee if you are already a paying customer, this includes the ability to have a domain attached to your website, a webshop as well as more additional pages, images and videos.

The product is hosted partially on Simplesites own hardware in an offsite location, and using a number of cloud services to provide faster response times for certain data types.

2.2   Departments

- **Administration** - Situated at the ground floor of the Copenhagen office, this department contains the HR functions as well as finance.
- **Sales** - Also on the ground floor of the Copenhagen office, sales consists of full time employeess and student helpers. The primary task is to sell the product, currently through localized ad management.
- **P & C**[1] - The department sits on the upper floor of the Copenhagen office and is responsible for planning new features in cooperation with the

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[1]Product and Communication.

developers as well as manage content on Simplesites own websites. P & C also manages communication such as newsletters and localized ad texts.

- **In-House Development** - Sitting next to P & C on the upper floor the developers are responsible for implementing new features as well as maintenence, analytics and bug fixing of the product.
- **Operations** - Daily operations are handled primarily by the company CTO, Thomas, as well as 2 part time students, operations sits on the upper floor in Copenhagen next to the developers.
- **Support** - Since the product is offered in several languages, a supporter is hired per language in a part time basis. All supporters work from home but get together once a month for a status meeting and to make sure new knowledge is shared and that relevant information can be given from the regular departments.
- **Remote Dev 1** - A small number of developers are hired in Bulgaria and have their own office in the Sofia, they are offered machines in the Copenhagen office they can VPN into and use for work. This allows the operations department to work from Copenhagen and still service the remote developers.
- **Remote Dev 2** - A number of developers are also hired from Serbia, like the remote developers in Bulgaria, they also VPN into the Copenhagen office and work on machines maintained by the regular operations employees.
- **Miscellaneous** - Simplesite also occasionally employs external specialists or consultants. Depending on the need, they will either work in the Copenhagen office or from some remote location using VPN.

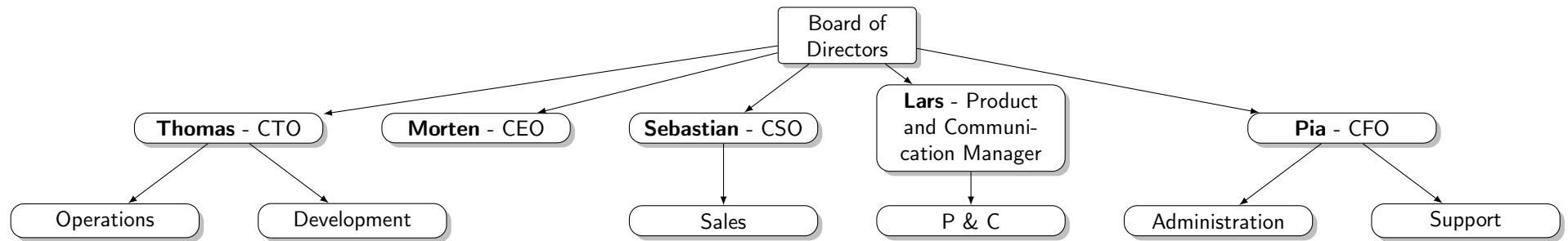## 2.3 Company Structure

Figure 1: Organizational diagram for Simplesite ApS

3   Problem Description

Simplesite changed their subscription service to a so called freemium model during 2015. This model means that everyone can have a website for free, and it will never be closed. This way of doing subscriptions means that more people sign up, and become potential customers, however a trend is that most customers that sign up either don't become paying customers, or simple make a site and stop using it after a few days.

Simplesite wishes to map the life-cycle of customers in an attempt to find out how paying (good) users use their site, as well as look at the life-cycles of the many free or abandoned customers. They hope to discover what, if any, the significant differences is in the different lifecycles. The goal is to attempt to guide new customers down the paths that are known to be "good" and hopefully detect if customers are stuck or have forgotten about their website.

3.1   Requirements

This is garbage, fix it.

Simplesite have already started working on creating datasets and attempting to map variables. In order work with their existing code I was given access to a code repository which I can commit to.

The existing code is written in R[2] and as such, the code I will be producing will also be written in R. Furthermore, in order to easy human understanding of the data models worked out, decision trees (and related machinelearning models) was chosen as the model. Decision trees, once constructed offer an intuitive way to look at what parameters lead to different outcomes. They also closely resemble a number of customer life-cycles combined into a graph.

4   Problem Analysis

5   Competencies and Methods

6   Conclusion

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[2]`https://www.r-project.org/`