

# **Master Data and SOA in a distributed organisation**

## *Thesis proposal*

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# 1 Introduction

In today's rapidly changing and fast paced business environment enterprise agility has become an increasingly important factor. To achieve this, enterprises implement and maintain information systems that will make them agile enough to take part in emerging business opportunities and/or help them facilitate changing business requirements. Maintaining key organisational data has always been an important, e.g., knowing who the customers and suppliers are and which projects they are involved in are essential to be able to strengthen the customer relationship or rationalise decisions affecting the organisation, just to name a few. A commonly used term in context is master data. Master data consists of data that more or less defines the enterprises and constitutes only those data that are critical to the organisation (e.g., projects, customers, suppliers, products etc.). It is thus not hard to understand why master data is the most valuable data the organisation owns, and the subject for many acquisitions.

Having a consistent and enterprise-wide understanding of what defines, for example, a project is essential as this both helps prevent bad things from happening - such as different business units within the corporate group bidding against each others - and to seize beneficial business opportunities by analysing the customers involved in the projects and through that anticipate a latent need of customers.

In many organisations today, however, it is the case that master data resides in a number of overlapping systems across the enterprise. This quickly becomes cumbersome as increasing complexity (due to change, growth, mergers & acquisitions or technology transformations) has made it hard for enterprises maintain consistent master data across the enterprise.

## 1.1 NCC

NCC is one of the leading construction and property development companies in the Nordic region with offices located in Sweden, Norway, Finland, Russia and Denmark. The NCC group had sales worth of SEK 57 Billion in 2013, with approximately 18 000 employees. Recent initiatives by NCC group include the establishment of an group IT function on corporate level to enforce a more holistic and unified view of how IT supports the enterprise. Each subsidiary NCC office around the Nordic region had up until recently had their own, more or less independently run, IT function which have led to locally optimal IT solution architectures with the drawbacks of having inconsistent definition master data across the different business units. For example, NCC which is a company highly centered around projects do not have an enterprise-wide understanding of what constitutes a project.

## 1.2 Problem formulation

With the absence of enterprise-wide setup to handle master data at NCC this has led to an inconsistent definition of what, for example, constitutes a project or even which customers are shared across the various business units. Imagine, if a large customer of NCC would be in business with several of NCC's business units, this is indeed an important customer which should be treated so accordingly. However, since business lacks the necessary mechanisms to realise this, this customer is likely to be viewed as a small customer. Not only can this lead to missed business opportunities but also the chance of permanently losing an important customer.

Consequently, the aim of this master thesis project is to look at how to best approach the problem of establishing a master data management solution at NCC. Furthermore, as the NCC group is a fairly decentralized organisation, with its master data residing in different subsidiary organisations and with a organisational structure likely to remain we need to investigate how we, despite this fact, can establish a master data management solution that addresses aspects such as data inconsistency and quality.

Moreover, we will also look at how we can assist access to master data through services using a service-oriented architecture (SOA) approach.

### **1.3 Delimitations**

Due to the limited time frame for this project we will solely focus on a subset of master data - project data. Nevertheless, we believe that the learning outcomes from this project will greatly be of assistance stretching this work to remaining master data.

## **2 Methodology**

Conceptually this project can be divided up into three parts *theory, current state analysis, future state analysis and implementation roadmap*.

### **2.1 Theory**

During the theory phase the objective is to gather and build the necessary theoretical foundation for the area of MDM and SOA. This could both be achieved through literature studies but also by meeting with consultancy firms to understand this is solved in the industry.

### **2.2 Current state analysis**

The purpose with this phase is to identify where the master data resides and which business processes actually accesses the master data. Furthermore, to understand how the master data differs between the business units we will need to identify their respective information models; focusing primarily on project data. By doing this we hope to understand how the master data is altered and how their information models (or master data definition) differs.

### **2.3 Future state analysis**

Based on what we learned from the previous phases we will look at some different target architectures and analyse them with respect to areas of consideration (e.g., data accuracy, consistency, timeliness, synchronization, quality, security etc.). The biggest challenge during this stage will be to compare the different information models and decide on which how an improved model could look like.

## **2.4 Implementation roadmap**

Based on the analysis provided from the future state architecture analysis we will provide a roadmap of the necessary actions that needed in order to realise the chosen future state architecture. Moreover, providing master data only do not guarantee that good data quality is maintained; instead looking at the governance processes will also be a increasingly important factor both in terms of data governance and SOA governance.