# Business Intelligence Utilisation through Bootstrapping and Adaptation

**Wanda Presthus**
Department of Applied Information Technology
IT Faculty
University of Gothenburg

UNIVERSITY OF
GOTHENBURG

Thesis for the Degree of Doctor of Philosophy in Informatics to be defended in public on Thursday September 10th 2015 at 13.00 in room Torg Grön at the Department of Applied Information Technology, Forskningsgången 6, Göteborg.

## Abstract

*Business Intelligence (BI) has traditionally been viewed as a technology-driven, rational process, which would lead to better decision-making in organisations. Fact-based decisions are expected to reduce costs and increase income for a company, but also, for example, prevent crime and illness on a more global scale. A shortage of data is not the problem and data warehousing and end-user tools can provide people with consistent data, which have been tailored to their needs.*

*A common problem is that BI solutions are rarely utilised to their full potential. For example, while a BI solution offers advanced reporting, queries, dashboards and data mining techniques, the most widespread product remains to be simple two-dimensional reports. Throwing more and upgraded technology at the users is common but does not increase utilisation. Although BI research is plentiful, we lack knowledge about (1) how the users interact with the technology, and (2) what makes a BI solution useful over time. A BI solution can be purchased, implemented, and provide everything the vendor promises, but it is a waste of time and money if the people do not use the solution.*

*The aim of this PhD thesis is to increase our knowledge about how the utilisation of BI can be developed. The thesis applies the concepts of bootstrapping and adaptation from Hanseth and Lyytinen's theory of Information Infrastructure. Bootstrapping means that an information system must be initiated through a self-sustaining, internal process, and adaptation means self-organizing growth. Through the study of five cases of development of the utilisation of BI, this thesis exploits BI beyond the use of reporting tools, which again results in several benefits for the companies. The research question reads:* How can BI utilisation be developed through bootstrapping and adaptation?

*From a thorough analysis using techniques from Miles and Huberman, several aspects appeared. The BI process should be addressed in two phases with different focus: if users are exposed to lightweight BI tools first (in the bootstrapping phase), they are more likely to want to explore the more advanced tools later (in the adaptation phase).*

*From this PhD study emerges one theoretical and one practical contribution. On the theoretical side this thesis offers a conceptual reframing of BI; as a self-reinforcing installed base that endures bootstrapping and adaptation. In the bootstrapping phase, focus should be placed on agile tools, technology demonstration and arousing curiosity for the user. The bootstrapping phase may eventually turn into adaptation, which requires a different focus. A close interplay between the users and the developers is crucial for the adaptation phase; however, the users can tolerate some delays in usefulness. From this conceptual reframing four patterns are identified, which are operationalised into management guidelines for practitioners in the industry who either want to start using (bootstrapping) or improve their current use (adaptation) of the BI solution. Hopefully, this study can lead to BI being utilised to a greater potential in any organisation, and thus benefit from the many advantages that BI can provide.*



Key words: Business Intelligence, utilisation, Bootstrapping, Adaptation, Installed Base, Information Infrastructure

Gothenburg Studies in Informatics
ISSN 1400-741X (print), ISSN 1651-8225 (online)
ISBN: 978-91-982069-3-7