AN INDUSTRIAL ENGINEERING PERSPECTIVE OF

BUSINESS INTELLIGENCE

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ABSTRACT

AN INDUSTRIAL ENGINEERING PERSPECTIVE OF

BUSINESS INTELLIGENCE

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Summary:

In this thesis the candidate explores the apparent gaps between strategy development and strategy implementation (the strategy alignment question), and between business end-user needs and the suppliers of information technology (IT) related products and services. With business intelligence (BI) emerging as one of the fastest growing fields in IT, the candidate develops a conceptual model in which BI is placed into context with other relevant subjects such as strategy development, enterprise architecture and modelling and performance measurement.

The emphasis is on the development of processes and templates that support a closed loop control system with the following process steps:

- A business strategy is defined.
- The implication of the strategy on business processes, supporting IT resources and organizational structure is formally documented according to enterprise architecture principles.
- This documented blueprint of the organization helps to implement the selected business strategy.
- A performance measurement system is developed and supported by a well-designed data warehouse.
- On a regular basis the measurements that were defined to support the implementation of the strategy, together with information from the external environment are interpreted and this analysis leads to either a new strategy, or refinement of the implementation of the existing strategy. Both options may lead to changes in the enterprise architecture, the execution of business processes and/or the performance measurement system.

Some of the individual components of the model are supported by existing theories, for example the Zachman Framework for enterprise architecture and the Balanced Scorecard from Kaplan and Norton. The contribution of the author was to position them in the bigger picture to indicate how they can add value with regard to the establishment of business
intelligence in organizations. Instead of packaging existing ideas slightly differently under a new name, the author intentionally searched for existing theories to fulfil certain requirements in the Bigger Picture BI Context Model.

Apart from a set of templates that were adapted from various other sources and packaged into practical formats that can be used during facilitation sessions, the author has also developed and described the Fourier Model and the Pots of Money Model. The Fourier Model is a powerful conceptual model that helps a business to package solutions for market related requirements through selections of previously defined building blocks (technical components) that can be delivered through various business entities, depending on the requirements of the opportunity. The Pots of Money Model is a quantitative model embedded in a spreadsheet format to illustrate and communicate the effect of spending decisions in one area of the business on other areas.

The candidate demonstrates the Bigger Picture BI Context Model in several case studies. The thesis is accompanied by a CD ROM, which contains over 700 references to relevant literature (most of them available in full text) and links to internet web sites, as well as examples of the software templates that support some of the steps in the context model.

The following figure depicts the conceptual model in schematic format:
acknowledgements

Various people have assisted the author in many different ways during this learning experience over the last number of years. A mere thank you is probably not enough to show appreciation, but none the less the author wants to acknowledge and show gratitude for the following contributions:

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<tbody>
<tr>
<td>AIM</td>
<td>Absolute information management</td>
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<tr>
<td>B2B</td>
<td>Business to business</td>
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<td>BAM</td>
<td>Business activity monitoring</td>
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<td>BSC</td>
<td>Balanced scorecard</td>
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<td>CD ROM</td>
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<td>CIF</td>
<td>Corporate information factory</td>
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<td>CIM</td>
<td>Computer integrated manufacturing</td>
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<td>Total quality management</td>
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