Chapter 12

Justification of Data Warehousing Projects

Reinhard Jung and Robert Winter
University of St. Gallen, Switzerland

Project justification is regarded as one of the major methodological deficits in Data Warehousing practice. As reasons for applying inappropriate methods, performing incomplete evaluations, or even entirely omitting justifications, the special nature of Data Warehousing benefits and the large portion of infrastructure-related activities are stated. In this chapter, the economic justification of Data Warehousing projects is analyzed, and first results from a large academia-industry collaboration project in the field of non-technical issues of Data Warehousing are presented. As conceptual foundations, the role of the Data Warehouse system in corporate application architectures is analyzed, and the specific properties of Data Warehousing projects are discussed. Based on an applicability analysis of traditional approaches to economic IT project justification, basic steps and responsibilities for the justification of Data Warehousing projects are derived.

INTRODUCTION

An empirical analysis (Helfert, 2000) of large companies’ research needs in the field of Data Warehousing shows that Data Warehouse project justification is regarded as a major issue which requires a considerable research effort. As a consequence, only 53% of the participating companies tried to set up a Data Warehousing business case at all. Of those companies that performed an evaluation of costs and benefits, 58% used multi-attribute utility techniques, 33% used investment techniques, and 17% used various other approaches (Helfert, 2000). Superficial or missing analyses of Data Warehousing projects are usually attributed to the special nature of those projects, e.g., to the “obvious impossibility” to

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assess “intangible benefits” (McKnight, 1999). If estimations are made, the return
on investment (ROI) ranges from -1857% to an incredible 16,000% with an av-
erage of 401% (IDC study cited in McKnight, 1999).

In analogy to the term database system, the term Data Warehouse system
denotes the entire range of applications and databases that is needed to utilize a
Data Warehouses for business purposes. Data Warehousing then denotes all ac-
tivities that are linked to the development, utilization, and operations of the Data
Warehouse system.

Several facts contribute to the problems that companies are facing when they
try to calculate ROIs for Data Warehousing projects:
• The Data Warehouse system is a complex middleware architecture built up
incrementally by several Data Warehouse development projects.
• If a large number of data sources is integrated and a large number of applica-
tions is supported by the Data Warehouse, a huge investment is necessary, and
lots of internal and external side-effects may be influencing the project(s).
• The Data Warehouse system comprises various components which are utilized
by different business units in a different manner while the investment maybe has
to be made jointly. While data consuming components (e.g., interfaces to deci-
sion support applications or horizontal applications) can be assigned quite eas-
illy to “consuming” business units, no such assignment can be made for
infrastructural components (e.g., the core Data Warehouse, interfaces to source
applications, meta data management).
• Due to the dynamic nature of many management processes, the Data Ware-
house system is subject to frequent changes. From an investment theoretical
point of view (Jung, 1998, p.38), diversification investments have to be taken
into account in addition to initial investments.
• Although less frequently, not only information consuming applications, but also
source applications are subject to changes (e.g., migration to standardized soft-
ware packages).

In this chapter, the economic justification of Data Warehousing projects is
analyzed, and first, descriptive results from a large academia-industry collabora-
tion project in the field of non-technical issues of Data Warehousing are pre-
sented. As conceptual foundations, the role of the Data Warehouse system in
corporate application architecture is discussed, and the specific properties of Data
Warehousing projects are analyzed in the next section. In the following section,
the applicability of traditional approaches to economic IT project justification is
discussed. Based on that analysis, basic justification elements (i.e., tasks and re-
 sponsibilities) for Data Warehousing projects are derived in the next section en-
titled, Methodological and Organizational Aspects of Data Warehousing
Project Evaluation, and summarized in the last section.
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