Chapter 3
Business Intelligence Maturity Framework

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ABSTRACT

This chapter builds an enterprise-level business intelligence maturity (EBIM) model that facilitates an improved view of the path in business intelligence (BI) implementation. The authors adopted a two-stage qualitative approach, namely a Delphi study followed by case studies. The findings reveal that a comprehensive EBIM model enables organizations to plan, assess, and manage their BI initiatives more effectively than previously. In addition, this study lists important key process areas (KPAs) that influence BI implementation success. The authors found that the KPAs in different levels and dimensions help organizations identify critical areas in need of maximum attention and channel their scarce resources to improve those areas. Further, the entire EBIM framework fosters better use of limited resources in critical areas, which is likely to have a greater effect at the right time.

INTRODUCTION

In this era of data explosion, companies have become more aware of the importance of business intelligence (BI). BI is a broad category term encompassing technologies, applications, and processes for gathering, storing, accessing, and analyzing data to facilitate and improve decision-making (Wixom & Watson, 2010). Its main elements are integration processes, namely, processes to move data from different sources into one integrated place, and storing, analyzing, and presenting data to end users. It means

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that BI is technology that allows business analysts to use data collected from various sources across an organization for analysis and other business purposes. Hence, BI offers a comprehensive view across different organizational functions (Wixom & Watson, 2010). Actionable information from BI may yield competitive advantage in an ever-changing business environment.

However, BI implementation involves a considerable amount of resources and is hence a costly and complex undertaking. Thus, it must be monitored prudently. To identify the strengths and weaknesses of BI initiatives, managers need to assess the maturity of their BI efforts. For this purpose, BI academics and practitioners have developed multiple maturity models to assess organizations' BI implementation toward improving and reaping increased benefits. Maturity models serve as a tool to measure and categorize organizational capabilities against established benchmarks (de Bruin, Rosemann, Freeze, & Kulkarni, 2005).

BI maturity models help stakeholders to understand holistically the issues that affect BI implementation. The models allow BI stakeholders to optimize the use of scarce resources by focusing on key areas more likely to have a greater impact than other areas. These reasons underscore the value of a BI maturity model in aiding BI implementation. However, many organizations are yet to reap the full benefits of BI implementation (Klynveld Peat Marwick Goerdeler, 2009), although their managements have devoted considerable attention to the implementation process. This failure to harvest the full benefits results in a significant loss to organizations.

More importantly, studies that present systematic guidelines for, and assessment of, BI initiatives are limited. Academics and practitioners have proposed numerous BI maturity models, but the reliability and underlying maturity concept of these are unclear and questionable (Lahrmann, Marx, Winter, & Wortmann, 2011; Shaaban, Helmy, Khedr, & Nasr, 2011). Moreover, most of the studies examining these models did not discuss model evaluation. In addition, guidelines on technical issues are absent in the related literature. Lahrmann et al. (2011) also observed two other weakness of these models: the models target specific clients and focus less on BI. However, Lahrmann et al. (2011) did not explain the specific groups of clients targeted by the models and this question remains unanswered. Moreover, the criticism that the existing models' focus on BI is limited is inaccurate because these models cover only some topics under the umbrella term BI.

Further, most prior studies emphasized certain topics such as data and infrastructure and rarely addressed important business areas such as strategic business alignment, organizational structures, and strategy (Lahrmann et al., 2011). Overall, the links between BI technology and BI organizational performance were not specified clearly. Although BI is a broad category that spans a wide spectrum of topics, from technology-related to business-related topics, the current literature is yet to present a comprehensive coverage of the entire spectrum. Lahrmann, Marx, Winter, and Wortmann (2010) recognized this lack of comprehensiveness as a weakness of the existing BI maturity models after comparing 10 such models.

Therefore, a more comprehensive BI maturity model is needed. The main objective of the present study was to develop an enterprise-level business intelligence maturity (EBIM) model to help organizations plan, assess, or undertake large-scale BI initiatives. The overarching research question was "How can a more comprehensive BI maturity model be developed?" To answer this question, we first explored the existing literature and developed the EBIM model. Next, we explored the views of certain BI experts on this model. By building the EBIM model, this study offers three contributions. First, it has developed a more comprehensive EBIM model for BI stakeholders than existing models.

Second, this study presents a clearer pathway to BI stakeholders to increase BI maturity in their organization. By using the EBIM model, they will be able to recognize the current position of their