Chapter 7
The Analytics Asset

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ABSTRACT

Analytics is currently treated as an emerging profession that comes from a convergence of techniques rooted in the fields of statistics, operations research, industrial engineering, computer science, as well as the fields of psychology and decision analysis. A leading professional body, INFORMS, defines analytics as: "The scientific process of transforming data into insight for making better decisions" (Robinson, 2012). We can treat analytics as an emerging profession because the body of knowledge required for analytics has become extensive, and business people have started to designate teams and departments as being specialists in analytics. An ecosystem of service providers has evolved for this profession, including conferences, degrees, professional consulting services, certifications, etc. Analytics technologies support algorithms for forecasting, optimization, visualization, etc. using techniques such as linear regression, machine learning, design of experiments, simplex, queuing, simulation, etc. We should also include Business Intelligence (BI) and Data Warehousing (DW) under the umbrella of analytics technologies. Analytics is best understood as a business asset that is used to improve decision-making and execution. This chapter outlines the analytics landscape and aims to help organizations gain a shared understanding of issues that must be addressed to plan, build and use the analytics asset.

INTRODUCTION: PERSPECTIVES AND OBJECTIVE

There are three stages in the way businesses use analytics (Saxena & Srinivasan, 2013):

- In the first stage, they use databases, dashboards and reports to get the information needed to help make business decisions. The assumption is that the decision-makers know how to use the analytics provided. This stage is data oriented.
- In the second stage, business leaders turn to analytics professionals to help make sense of the data, conduct analyses, generate insights, and to make recommendations. This stage adds model orientation to data orientation.
- In the third stage, business, analytics professionals, and IT work together to create, use, and evolve decision cycles for the organization. Decision cycles go from decision-need to business outcomes, and help you drive results from analytics – this stage

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is results oriented. Analytics becomes embedded in business practices and also becomes an asset that can be assessed and continuously improved.

Each stage adds to the previous stage, and generates greater business value. You can use all these stages in parallel, aligned to business needs (Figure 1).

In Stage 1, business people work with IT teams to specify, develop, use, and evolve dashboards, reports, visualization and querying tools. Nowadays the IT team is often designated as a "business intelligence" (BI) or "data warehousing" (DW) team, and can sub-divide into specialists in designing data models, managing metadata, loading data into databases and transforming it, user experience designers, report/dashboard developers, etc. There exists an entire ecosystem of IT tools and services providers to serve the BI and DW needs.

At Stage 2 we encounter the emergence of analytics professionals who provide a second source of analytics supply for business people. These analytics professionals may be housed in businesses, IT, or a separate staff function – or in all of these locations for large and complex organizations. A new set of systems and processes support the analytics teams. This has given rise to an analytics ecosystem that works in parallel with the IT-oriented BI & DW ecosystem. Analytics teams place a different set of demands on IT to serve their needs, mostly formulated in terms of broad data access – analytics people want IT to enable them to get the data they need, and then they will perform the analyses they wish. Sometimes IT also provides the analytics infrastructure and supports analytics applications.

The use of information technology (IT) and analytics is not new. We have learned to incorporate it in our habits and the ecosystem players that support these have deep roots, often decades

Figure 1.The three stages of analytics (© 2014, Cobot Systems Pvt. Ltd. Used with permission.)