

# Chapter XVIII

## A Framework for Using Analytics to Make Decisions

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### ABSTRACT

*Analytics provides evidence for objective corporate decision-making. Lack of understanding of analytical techniques can create confusion amongst decision-makers. Confusion generates mistrust which leads to the exclusion of analytics from the decision-making process. Confusion is avoided by ensuring that results are justified. This requires that the analytical process is auditable. Aligning technological design and deployment with human roles creates the necessary framework for auditability. This is achieved with four analytical technology components: data manipulation, statistical and quantitative analysis, creation, and export of exploratory and predictive models, and delivery of output. These components correspond with key stages and phases of collaboration in the analytical process. Describing the interaction and alignment leads to a proposed framework for the socio-technical development of analytical software and process which considers both user and non-user needs. This framework can be expanded to other domains where technology and users of technology must collaborate with non-users who dictate acceptance.*

*In everything one must consider the end*

—Jean De la Fontaine, 1668

### INTRODUCTION

Business is latching on to the power of analytics using skills derived from fields such as statistics, mathematics and operations research, conducted with

tremendous (and increasing) computing capacity and storage capability. To deliver robust results to business in a timely manner requires deployment of applicable theory, which can only be achieved via suitable software installed on appropriate hardware

and interpreted by someone with relevant domain knowledge. This process is concretizing the abstract; the conversion of raw data and theory to tangible insight, leading to action.

Action in this instance is fact-based decision-making within the corporate environment. This requires collaboration between different entities who tend to have minimally overlapping skill-sets; hence the need for collaboration. To ensure that the outcome of this political process is consensual requires a number of conditions to be met to the satisfaction of several key players. Parallels are drawn between the requirements of the key players with the demands of the process to meet these requirements. This congruence defines the technological requirements.

The key players in a business orientated analytical exercise are: analyst, data expert, consumer, sponsor and analytical software. Analytical software is a tool, or set of tools for quantitative analysis, enabling the four other human roles to successfully combine efforts to the benefit of business. Consequently, analytical software must allow for open, transparent, truthful and cost-effective communication, thereby presenting a unified foundation for decision-making. In order for that to be achieved, the version of the truth presented to the business must be plausible. This requires that the analytical process is transparent, or auditable. Crucial to this is how the analyst interacts with the software and other key players.

“Apart from the price tag, there is very little difference between a model that is not built and one that is not deployed” (Bracewell, 2006, p.5). Many factors influence the acceptance and deployment of analytical results within business culture. Those entities with an interest in the use of analytical software within a business environment are described and their potential impact upon the decision-making process examined.

An observational study of more than 30 Australasian corporations from the banking, quasi-government, utilities, retail and telecommunications sectors over a five year period is coupled with a review of the literature to develop a socio-technical framework

for development and deployment of analytics and analytic software. Despite some industries being more analytically advanced, the needs are virtually identical as far as integrating analytics into the corporate decision-making process are concerned. Consequently there is no need to differentiate between the different industries. The development of analytical software to meet the needs of both the individual and the collective are then discussed. Importantly, the congruence between the needs of the key players and software design determines the manner in which analytics is integrated into the decision-making process. This process is auditable which ensures that those ultimately responsible for decision-making are able to interrogate how a result was acquired, thereby generating confidence in the results, enabling them to deliver the results to the wider business.

Corporate decision-making relies on analytics for a variety of tasks, limited only by the imagination of the business. Generic examples include: deciding whether or not to acquire/sell/close a business, what type of customers to acquire/retain, how those customers should be targeted, the budgetary requirement to acquire/retain and which customers should be personally managed. More specific examples include development of a personal finance product in the banking sector, where various factors such as pricing, likely uptake, target audience and profitability must all be determined in building a business case to have the product accepted.

Present literature describes either the properties of analytical software, or the nature of the analytical process, or those involved, but not the interaction between software, people and process. Whilst a number of analytical tools have the core features, the rationale for these features is not well documented. This has meant that the wide-spread adoption of analytics within business has been slower than would be expected.

The intersection that arises from the software-people-process interaction is used to propose a more coherent model for socio-technical development and deployment of analytical software. This model highlights the importance of those that use

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