



## **Chapter II**

# **Intelligent Agents for Competitive Advantage: Requirements and Issues**

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*“The test of a first-rate intelligence is the ability to hold two opposed ideas in mind at the same time and still retain the ability to function.”*

*- F. Scott Fitzgerald*

## **ABSTRACT**

*This chapter presents a high-level model for employing intelligent agents in business management processes, much like has been successfully accomplished in complex telecommunications networks, in order to gain competitive advantage by timely, rapidly, and effectively using key, unfiltered measurements to improve cycle-time decision making. The importance of automated, timely, unfiltered (versus “end of period” filtered) reports is highlighted, as are some management issues relative to the pressures that may result concerning an organization’s employees*

*who must now take action in near real time. Furthermore, the authors hope that understanding the underlying assumptions and theoretical constructs through the use of employing intelligent agents in business management processes as a sub element of, or tool within Business Intelligence (BI), will not only inform researchers of a better design for studying information systems, but also assist in the understanding of intricate relationships between different factors.*

## **INTRODUCTION TO MEASUREMENT AND REPORTING SYSTEMS**

Since 1494 and the appearance of the double-entry accounting system (the development of which is accredited to an Italian by the name of Pacioli), those involved in business have attempted to measure business performance in an organized manner. As many accounting functions are repetitive in nature (e.g., payroll, inventory, etc.), accounting was one of the first business disciplines to which early computing technology was applied. From this humble beginning, today we see comprehensive enterprise models that have been incorporated into ISO Standards in an attempt to build quality, capability, and uniformity into business enterprise systems. Supporting these models and systems is an effort to also launch the Extensible Business Reporting Language (XBRL), such that metadata models gain uniformity and make business information more readily accessible across systems and enterprises.

Yet despite all the gains and improvements in models and systems capabilities, many in management today are still dealing with stale data — that is, data presented at the end of a reporting period (month, quarter, year) versus as it is taking place. And even those entities that are slightly more advanced require their professionals to proactively seek out data between “end of period” reporting periods via making system requests for such data (“dynamic query”).

This chapter addresses a concept for transitioning from an “end of period” reporting model to one based on “push agents” delivering to the pertinent manager information that is key to managing the enterprise in near real time in order to gain a substantive competitive advantage. The high-level model in *Figure 1* demonstrates the suggested movement from an “end of period” model to an automated push agent model, with an intermediate step already utilized in some enterprises that is a dynamic query model.

Comparing where we are today in business reporting practices with those practices being used in the virtual real time management of many telecommu-

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