

# Chapter XVI

## Real Time Decision Making and Mobile Technologies

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### ABSTRACT

*For business decision making to occur, data needs to be converted to information, then to knowledge and rapidly to wisdom. Whilst Information Communication Technology (ICT) solutions facilitate business decision making, ICT has not always been effective in providing the critical “data to wisdom” conversion necessary for real-time decision making on any device anywhere anytime. This lack of effectiveness in real-time decision making has been further hampered by a dependence upon location and time. Mobile technologies provide an opportunity to enhance business decision making by freeing users from complex information management requirements and enabling real-time decision making on any device anywhere anytime. This chapter discusses the role of mobile technologies in real time decision making.*

### INTRODUCTION

As society exits the industrial age and enters the knowledge era, society suffers from data overload, information is lacking, knowledge is scarce and wisdom is wanting (Balthazard, & Cook 2004). Instead of having the right information, presented at the right time in the right way to make decisions, society is epitomised by people spending large amounts of time trawling and sifting through data to try and find what is needed to make decisions (Adair 2007). This practice of searching and sifting through data

in an effort to find information poses a huge in-built inefficiency with higher costs and un-assured service delivery. Advances in mobile technology are likely to create further challenges to these searches and sorts as they bring in additional dimensions of location-independence and personalization.

The need for the rendering of information in context, as part of work-flow, to any device anywhere anytime to enable real time decision making is the goal of many organisations. The mobile enablement of business, as discussed by Sherringham and Unhelkar (2008a) in a separate chapter in this book,

is expected to further drive the demand for real time decision making services (Ghanbary 2006). The emergence of real time decision making, the elements required to achieve that process and the implications of mobile technologies in real time decision making are discussed in this chapter.

## DATA – WISDOM VALUE STACK

A record in a database, a marketing video or a company's financial report are all data. Data only becomes information when it is analysed, understood and needed. With the application of experience and skills information becomes knowledge and when such knowledge is applied at the right time in the right way, knowledge becomes wisdom (power/profit). This data to wisdom conversion is illustrated in Figure 1.

The familiar example is a hall porter, who by putting a favourite wine in a hotel room collects a reward. The hall porter takes the data elements (arrival at that hotel, to the appropriate room, at that correct time and with the wine) and because the elements are required and understood they are information. Context is given to the information (managing the relationships between pieces of information and used with work-flow) to achieve knowledge, which is then applied at the right time in the right way to realise a profit (Ghanbary and Arunatileka 2006).

The business imperative of the data – wisdom conversion has been widely noted, e.g. Macmanus et al. (2005), but the significance of the value stack

lies in the importance of providing *context* through managing relationships between pieces of information and by the integration of information with work-flow. Within mobile business, the significance of location provides additional context to the information.

Resolution of the data – knowledge conversion allows the right information to be presented at the right time in the right way to the right audience, providing two advantages. Firstly, the need for users to have advanced information management skills to complete the most rudimentary of tasks is reduced. Secondly, the difficulty of managing information on the small screen of current mobile devices is removed. Resolution of the data – knowledge conversion to service both business and mobile business will allow mobility to realise its true significance through the provision of real time decision making (Raton 2006) and provide business with a major competitive advantage (Ekionea 2005).

## ELEMENTS OF REAL TIME DECISION MAKING

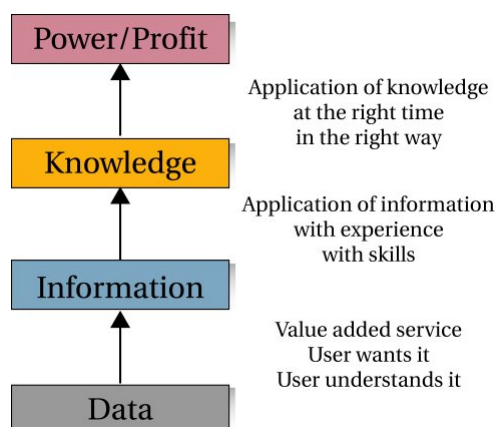
With real time decision making, our favourite restaurants can bid in real time to achieve our patronage on any device anywhere anytime. The information needed to take the best route home is supplied dynamically as the road is traversed and everything that is needed to make a foreign exchange trade is rendered to any device anywhere anytime for decision and execution (Gupta 2006).

The key elements of real time decision making are summarised in Figure 2 and are discussed as follows.

**Consolidated Repository** – Information for real time decision making is accessed from virtual consolidated repositories that combine spatial data, database data, transactional data and documents (including images). To stop the duplication of effort, information is single sourced from virtual consolidated repositories. Within these repositories, content is separated from presentation and from mechanism of delivery. Archiving, backup, recovery and version control, are all performed on the repositories on behalf of the user, freeing up both the end user and the end-device (Sherringham 2005).

The benefits of distributed computing power shall continue within the mobile computing environment but unlike the desktop environment where data were trapped locally, consolidated data storage ensures that

Figure 1. Data – Wisdom value-stack



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