Chapter 13
Tailorable Technologies for Improving Business Intelligence Systems: Small Business Decision Maker’s Perspective

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ABSTRACT

The Australian farm-based businesses can be benefited from specially designed applications for cost-effective operation while maximizing profits to survive in economic and environmental crises. For decision support, existing business intelligence systems (BIS) approaches scarcely deal with specific user’s provisions to adjust changing situations in decision making, without extra technical exertions. In this chapter, the authors describe a conceptual framework of tailorable BIS solution that is based on case study findings in that the highlighted requirements are relevant to address changing situations through enhancing end user’s engagement. The activities of end user’s engagement supported through the use of tailorable features that reinforce a shift from the traditional BIS process to a new provision where business owners can actively involve in adjusting their features to their decision support.

INTRODUCTION

Although the growth of small and medium sized enterprises (SMEs) has been considered of paramount importance to accelerate local and national economy, the issues of SMEs are not often prioritised for their research problems. Many prior studies identify requirements of computer based applications for improving managers’ performance in selected areas, but application developments research is limited for specially-designed decision systems. The decision systems are mainly for meeting the information demand of smart owners/managers, whose primary function is not information system development but
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to engage and actively involved in lower-end development utilising their own knowledge from SMEs (Ray, 1994; Khan and Khan, 1992; Duan and Xu, 2009).

In SMEs of rural business domains, most of the small or family-based farms are classified as owner operated and their productivity of the businesses are overwhelmingly depended on managers/owners’ innovation (Mustafa, 2012) in particular for decision making. By tradition, the SMEs are defined as relatively small size industry that is (a) actively managed by its owners, (b) highly personalised, (c) largely local in its area of operations, and (d) largely dependent on an internal source of capital to finance its growth (Baumback, 1988). Traditional applications used for smart owners/managers’ decision support are still emergent and underdeveloped, specially to accommodate immediate changes for enhancing decision support. Therefore it is of paramount to investigate the requirements of specially-designed applications of decision support of smart owners/managers.

As the demand of business intelligence systems (BIS) have been increased in organisational decision support, the umbrella term used to describe data warehousing, knowledge management, data mining, collaborative systems, online analytical processing, and various types of decision support systems (DSS) (Gibson et al, 2004). BIS can be considered as the combination of processes and technologies to assist in decision making for managers. The BIS systems have been well-recognized for enhancing the effectiveness of information organisation and provide comprehensive decision support mechanism to meet all levels of decision demands through applications such as decision support systems, query and reporting, online analytical processing (OLAP), statistical analysis, forecasting, and data mining (Stasieńko, 2010). This implies that BIS has influence to operationalise as data-driven DSS1 applications (Power, 2007). Over the past decades, as data driven DSS, BISs have been shown its potential use for decision support for turning business data into support information. Most of the current BIS solution frameworks are designed to support executive managements (Singh, Watson, and Watson, 2002). A decision-making situation relevant to business operations can be more important to keep track of end-level business matters such as resource allocations, in order to cutting-down costs while maximising profits continuously in businesses. Our study focuses on the perspective of designing such BIS that can be classified as data-driven DSS for meeting the demand of smart manager/business owners in the rural business domain.

In context of application development, relatively few studies have addressed decision support issues of SMEs managers/business owners. Our target case highlights the small businesses with less than 10 employees that are located in rural areas. These businesses are mainly based on family owned or operated small farming business. Cox (1996) and Kerr (2004) suggest that most decision support applications for small-farm business owners were based on research models that have the primary aim of discovering and understanding relationships between data, or applied pre-defined models used as decision support mechanisms. Although these applications generate reports from range of data sources, they provide limited user provisions to adjust the changes in decision making.

Most of the cases, the applications hold inappropriate provisions for decision makers and they have lack of features of situational support due to rigid analyses or employing analytics tools, in the face of changing business needs. Most of the cases, these solutions need ongoing reengineering effort to incorporate new information in the system. User factors such as a limited fit with their specific context of decision making problems, differences in problem definition between users and application designers, and poor usability, generally only compound this situation. Duan and Xu (2009) described that managers of small businesses have often been dissatisfied with software packages because of the inability of these to adapt well to their business needs (Heikkila et al., 1991). In-house development of decision support applications is often not straightforward as they associate with potential lack of completeness in