



## **Chapter XI**

# **Autonomous Environmental Scanning on the World Wide Web**

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## **Abstract**

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*Environmental scanning (ES) improves managerial decisions by linking the business environment with the organization's internal capabilities. This chapter provides an overview of current developments in ES, underscoring the link between the managerial decision-making process and the different modes of scanning both internal and external information sources, particularly the World Wide Web (WWW). The psychological foundations of human ES activities are scrutinized, and cutting-edge technologies that support monitoring or even scanning of autonomous information sources are discussed to integrate both aspects in a holistic perspective on ES. We identify the most serious challenge in ES to be the detection of relevant sources in vast information environments. Based on the Information Foraging Theory (IFT), we propose an innovative approach to assessing the information gain offered by digitally available sources.*

## Introduction

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ES refers to the way in which managers study their relevant marketing environment. Scanning is a more challenging task than monitoring information sources, because a broad range of internal and external sources have to be exploited, data in different (often ill-specified) formats have to be combined, and the topics, as well as the information sources of interest, cannot be exhaustively described a priori but rather, emerge during the scanning activities. Aggravating this, managers typically have to limit their attention to very few data sources and, thus, exclude all other potentially relevant information sources. Consequently, there is constant competition for the manager's limited attention between different topics, information sources and fragments. Herbert A. Simon highlighted this interrelationship in the following way (quoted by Varian, 1995, p. 200): "What information consumes is rather obvious: It consumes the attention of its recipients. Hence, a wealth of information creates a poverty of attention and a need to allocate efficiently among the overabundance of information sources that might consume it."

The importance of ES activities to managerial planning processes is widely accepted and supported by empirical results. Several studies show a strong connection between ES efforts and business success (Analoui & Karami, 2000; Daft, Sormunen, & Parks, 1988; Dollinger, 1984; Miller & Friesen, 1977; Newgren, Rasher, & Laroe, 1984; Ngamkroekjoti & Johri, 2003; Subramanian, Fernandes, & Harper, 1993; West, 1988). ES helps managers foresee favorable as well as unfavorable influences and initiate strategies that enable their organizations to adapt to their environments. Slaughter (1999) has noted that ES is an up-and-coming industry. ES should improve short- and long-term planning (Sutton, 1988), and should lead to a better understanding of external changes. At its best, ES is the first step in a well-organized chain of activities that lead to environmental adaptation (Walters, Jiang, & Klein, 2003); however, the actual managerial reality is found to be less structured and orderly (CIO Insight, 2003; Muralidharan, 1999). Meanwhile, the massive body of scholarly work (see Choo, Detlor, & Turnbull, 2001; Dishman, Fleisher, & Knip, 2003) for a detailed bibliography of scholarly contributions in the fields of competitive intelligence and ES, respectively) has not found a suitable impact on managerial practice (Wright, Pickton, & Callon, 2002), for various reasons. First and foremost, this might be attributed to the perception of managers that systematic ES is user unfriendly (because of its quantitative methods) and too complex (and thus simultaneously oversimplified, because of reducing scope to very few of the relevant variables) and, therefore, might make them lose ground (Day, 2002; Wind, 1997). Instead of systematically seeking for information on developments and changes, managers tend to reduce their cognitive load by restricting information gathering to exceptional events, such as preparation meetings devoted to strategic planning. In this case, the information-gathering task is commonly delegated to assistants or specialized market researchers and consultants (Chouldhury & Sampler, 1997; Lim & Klobas, 2000).

Previous research establishes that managements' cognitive inertia in responding to environmental changes increases the probability of mistakes in marketing planning (Daniels, Johnson, & De Chernatony, 2002; Reger & Palmer, 1996). But, even when this psychological obstacle is overcome, the manager faces serious difficulties in utilizing information from ES activities. Wright et al. (2002) report from an empirical investigation

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