



The effects of alternative supplementary display formats on balanced scorecard judgments

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Abstract

Using the Balanced Scorecard (BSC) to evaluate performance is a complex judgment task involving a large set of performance measures. Commercially available BSC software provides capabilities for providing decision guidance to the user through the design of supplementary information displays. This study compares the judgment performance of decision makers who received BSC data for two divisions of a simulated company in one of three formats: (1) individual BSCs for each division, (2) individual divisional BSCs supplemented by a side-by-side tabular summary of each division's performance, and (3) individual divisional BSCs supplemented by a side-by-side graphical comparison of each division's performance. Providing supplemental tabular displays did not improve judgment consensus, relative to viewing separate displays, but did improve consistency between performance evaluation and bonus allocation decisions. Consensus for participants using supplemental graphical displays was lower than that for participants viewing separate displays for each division. Further, participants given supplemental graphical displays exhibited lower judgment consensus and lower consistency between performance evaluation and bonus allocation decisions than those using supplemental tables. Inconsistency and lack of consensus are likely to create perceptions of unfairness, thereby increasing dissatisfaction with and resistance to

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continued use of the BSC. Thus, our findings indicate the need for care when designing and implementing BSC decision aids.

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1. Introduction

Many organizations have implemented the Balanced Scorecard (BSC) both to measure performance and as a tool to better implement and monitor strategy (Frigo and Krumwiede, 2000; Silk, 1998). Prior research investigating use of the Balanced Scorecard (BSC) to evaluate performance and allocate compensation (Banker et al., 2004; Dilla and Steinbart, 2005; Lipe and Salterio, 2000, 2002), however, indicates that decision makers do not fully utilize all the measures included in the BSC when making decisions. Failure to fully attend to all the data in a BSC may be due, in part, to its complex nature: typically, a BSC contains from 4–7 measures in each of four categories. This suggests the potential for creating decision aids that improve the quality of judgments made using the BSC.

One way to provide decision guidance in complex judgment tasks is to alter or supplement the manner in which information is displayed (Silver, 1990, 1991). Such informative guidance can improve decision making by making it easier to attend to relevant portions of the information set. Commercially available BSC software, such as the QPR ScoreCard (QPR, 2004) provides tools for creating a variety of supplementary displays of BSC data. A recent study by Banker et al. (2004) found that supplementing BSCs with strategy maps showing how various measures relate to different aspects of the organization's strategy increases the attention paid to those measures when evaluating divisional performance. This suggests that supplementary information displays may indeed be effective decision aids for BSC users.

The supplemental display tools incorporated in commercially available BSC software (e.g., QPR, 2004) allow the user to easily create a variety of tabular and graphical displays. Although this capability is a featured selling-point of BSC software, research has not examined the effect of supplementary display formats on decision quality. This study therefore investigates whether providing alternative supplementary displays improves judgments made using the BSC. It also investigates whether presenting such displays in tabular or graphical format affects judgment quality.

We examine two measures of judgment quality: *consistency* between individual performance evaluation and compensation decisions and *consensus* among users' performance evaluation decisions. It is especially important to consider consistency and consensus as dimensions of decision quality because of their effect on perceptions. Compensation judgments that are inconsistent with performance evaluations or performance evaluations that lack consensus may be viewed as unfair and arbitrary. Managers react negatively to use of the BSC as a performance evaluation tool if they perceive that the evaluation process is subjective and unfair (Malina and Selto, 2001). Indeed, Ittner et al. (2003) found that dissatisfaction with the manner in which the BSC

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