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Accounting, innovation, and incentives

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Abstract

This paper studies two scenarios of incentive issues related to innovation: the first is related to organizational innovation and the second is related to technological innovation. In the first scenario, we show that diversification across substitutive projects can actually make incompetent management more visible, and hence reduce incentive costs. In the second scenario, we illustrate that the new accounting standard on goodwill impairment may have a positive impact on incentive contracts even when the agent does not have control over the result of the impairment test. In both scenarios, we emphasize the out-of-equilibrium stewardship role of accounting information. We also stress the importance of distinguishing information content from value of information in contracting.

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1. Introduction

In the past two decades, companies in the United States have expanded greatly by innovating on various fronts such as researching and developing new products and brand names, as well as redesigning the organizational structure (Brickley et al., 1996; Chandra et al., 2004; Sougiannis, 1994),[1] so much so that the economic and stock market boom of the 90s has been attributed to

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[1] Sougiannis (1994) shows that high technology industries accounted for only 5% of the value of the Russell 1000 growth index as in 1990, but their proportion jumped to 20% by 1998. Chandra et al. (2004) presents time series evidence suggesting that greater income conservatism in high-tech firms is more pronounced, particularly beginning in the mid-1990s, due to increased R&D spending. Brickley et al. (1996) discusses increased organizational structure changes in the U.S. firms.

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innovation and information-based or knowledge-based assets. Given the increasing importance of such non-traditional assets, it is necessary to reevaluate whether accounting convention and practices still fulfill dual roles of accounting information: valuation of assets and performance evaluation/control of management.

Unfortunately, standard setters and accounting researchers have devoted their attention almost exclusively to the valuation issues. As Demski et al. (2002, p. 163) points out, ''My fear is we are in the information business, intellectually and professionally, but have become addicted to thinking, teaching, learning, examining, regulating, and communicating as if we were in the valuation business.'' Accounting standards often claim to provide users with better information by improving their ability to assess future profitability and cash flows, while only indirectly address the issue of the standards' implications on control issues and incentives.[2] Similarly, accounting researchers focus on the valuation and value relevance role of accounting information, e.g. whether prices reflect large intangible assets such as research and development cost.[3] In contrast, impacts of organizational and technological innovations on incentive and control have not been well investigated, although current literature recognizes that information asymmetry is inherently more pronounced in the presence of intangible assets and there exists a general demand for more disclosure and more timely reports.[4]

This paper studies two scenarios of incentive issues related to innovation: the first is related to organizational innovation and the second is related to technological innovation. In both scenarios, we emphasize the out of equilibrium stewardship role of accounting information. Incentive issues related to organizational and technological innovation are often subtle because the innovation can affect the off-equilibrium events in unexpected ways. We also stress the importance of distinguishing information content from value of information in contracting. Our results indicate that information content alone is not sufficient to determine whether an agent should be held responsible for a signal. To be useful for contracting, a signal has to have information content over and above other contracting signals.

In the first scenario, a manager carries out two innovative and diverse projects. We are interested in substitute projects, that is, more effort in one project decreases the manager's marginal productivity in the other project. Current literature suggests that substitutability always exacerbates the incentive problem. On the contrary, we find that diversification across substitutive projects can actually make incompetent management more visible, and hence reduce the agency cost. This occurs because substitutability takes the form of reducing an off-equilibrium probability, thereby lowering the incentive cost. In our second scenario, we study how the new accounting standard on goodwill impairment affects incentive contracts. Conventional wisdom suggests that the ability of the manager to ''control'' or affect the outcome of the impairment test should determine whether the goodwill impairment approach is useful for contracting. In contrast, we find that for the impairment test to be useful in contracting, it is not sufficient that the result of the test provides a signal with respect to the managerial input. Rather, the signal has to be one that makes an undesired off-equilibrium event more visible. A similar point is made in both scenarios: what we do not observe in equilibrium matters.

[2] This is the case for the latest standards on intangible assets, SFAS 141 and 142.

[3] For example, Sougiannis (1994), Lev and Sougiannis (1996), and Aboody and Lev (1988) study whether intangibles such as R&D cost, if measured appropriately, are associated with firm value.

[4] For example, Aboody and Lev (2000) provides evidence that insider gains in R&D intensive companies are significantly larger than that in firms not engaged in R&D. The result is attributed to the increased information asymmetry related to R&D activities.