

How a knowledge-based approach might illuminate the notion of human capital and its measurement

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Abstract

Human capital measurement and accounting has been under discussion for years without any satisfactory methodology emerging. The economic significance of today's knowledge-intensive organizations makes better HC measurement more pressing. We draw on insights from the knowledge-based theory of the firm and conclude we can only make sense of its human capital by looking in detail at its practices. Human capital is the value added at the level of the work practice—as traced by activity-base accounting. Overall the firm's human capital totals into its goodwill. The human capital can be estimated and then managed by allocating the goodwill to the activities taking place, a complex distribution process but one precisely complementary to that of activity-base accounting.

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1. Introduction

The widespread enthusiasm for a knowledge-based (KB) approach to understanding the nature of the firm and the possible basis for sustained competitive advantage has renewed interest in human capital accounting (Chen & Min, 2004). Training typically costs money and educated people are important corporate resources (Adner & Helfat, 2003). Indeed, it is estimated that the level of US corporate investment in intangible assets, around \$1 trillion annually, almost matches investment in tangible assets (Lev, 2002). But how can such assets be valued and brought under the normal mechanisms of managerial control? The question has been raised often in recent years (Dekker & De Hoog, 2000; Liebowitz & Wright, 1999; Wilkins, Van Wegen, & De Hoog, 1997). While many attempts have been made to develop structured 'objective' methods for addressing intellectual capital (Petty & Guthrie, 2000) none have been widely adopted in the business world. Does the KB approach offer new possibilities? In this paper, we answer with a tentative yes, but in ways that leave much work undone, not least on our expectations of what can be achieved.

Our argument follows from the observation that whatever human capital means, it must ultimately be evident in skilled predictable performance. Even this is only a first level of analysis, since human capital should also include the potential for skilled performance under circumstances, which have not yet arisen—a sort of second loop or level of analysis. A great deal of training, for rapid response in the event of a bio-terrorist attack, for instance, is undertaken in the hope that it will never result in performance. Nor is its exercise anything other than training. Performance is not elemental, in the sense of being constituted separately or standing apart from its context. It needs to be understood in the context of its being integrated into, and as a constituting part of, the production function. Hence, performance measurement and human capital must be based on the specific system of practices internal to the firm.

Our central point is that in important ways, the sum of these practices constitutes a significant part of a firm's identity—on which the value of the human capital is thus contingent. This internally oriented view is quite different from the externally oriented basis of conventional accounting which looks outwards, depending on the existence of markets in which resources are accounted for in terms of the price paid to acquire them. Clearly, the externalist and internalist bases for valuation are different, as are the purposes in performing the evaluation. We might also consider a third more pragmatic valuation basis, the future

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revenue stream that might result from the ownership and deployment of particular assets. To expect that human capital can be measured and added into a balance sheet showing the prices paid as if they were tangible assets is to doom the project to immediate failure. It would be to mistake gravely the differences in the natures of the assets involved. But this argument cannot go anywhere without a complementary understanding of practice and its place in a theory of the firm, for it is only through the presentness of practice that the potential of all resources becomes of value. Here, the emerging knowledge-based insights into practice may be helpful.

For at least a century, economists and accountants have pondered the implications of the difference between the value of the firm as a ‘going concern’ and its ‘book value’ (Petty & Guthrie, 2000; Veblen, 1965). Many presumed this was a failure of accounting, or of market perception, especially since the gap seems to have widened markedly in recent decades—to which Tobin’s Nobel-winning work drew attention (Lindenberg & Ross, 1981). Accounting dismisses the matter rather arbitrarily by adding in a balancing item as the firm’s ‘goodwill’ (Seetharaman, Balachandran, & Saravanan, 2004) thus overcoming the ambivalence of a market system that on the one hand prices the sum of the resources going into the firm at X and on the other the value of the integrated outcome at Y . Goodwill, portending profit and the return to the entrepreneur integrating these resources, is $G = Y - X$. Which leads directly to the puzzle of how value and wealth are, in fact, added, a matter on which, as we all know, both Smith (1986) and Penrose (1995) had much to say.

In addition, the notion of goodwill aggregates the value of a wide variety of relationships between the firm and its environment. The knowledge implied is both of the firm as a whole, but also that in the minds of the individuals, firms, suppliers, customers and other communities that interact with the firm. Goodwill is a complex concept in the sense of our explaining precisely how such a gap between the tangible assets and the valuation might arise. It reflects the firm’s past performance, of course, but also outsiders’ expectations of the firm’s future behaviour. Since these are perceptions of future events and potentialities rather than simple evaluations of what has already occurred, it is also a matter of the trust existing between these actors, and an indicator of the state of the local node of the network of economic and social relationships in which the firm is embedded.

At first sight, goodwill seems aggregated and outwardly focused on others’ views of the firm, while the idea of human capital (HC) seems disaggregated to the individual level and thus inwardly focused. Training, for instance, produces competencies that can be understood as expectations of future performance within the firm’s systems of practice that are not directly observable in the market, reiterating the point that measures of HC assets need to be grounded in the firm’s internal practices and problems rather

than in those in the world beyond the firm’s boundary. But intentions and purposes also come into play, and in the complex network of the firm and its relations there are many of these. One of many reasons to measure HC is that managers might thereby objectify their anticipations of individual or group performance; just as some try and rate a sports team’s chances. They might then be able to anticipate the results of investing in an individual or a team’s knowledge.

2. What is knowledge anyway?

Most writing in this area, now seen as distinct part of the knowledge management (KM) literature, makes profound and sometimes heroic assumptions about the term ‘knowledge’. We presume managers are interested in knowledge because getting more of it gives them more power over the situations for which they are responsible. Better knowledge enables them to frame and grasp experience and develop and evaluate alternative actions. It enables better planning, leading to better performance and execution (Spender & Marr, 2005).

Many KM writers see several types of knowledge. They often distinguish explicit or declarative knowledge (Singley & Anderson, 1989), which can be stated and tested in the manner suggested by the scientific method, from knowledge, which is tacit or performative (Nonaka & Takeuchi, 1995). The latter is readily evident in successful practice but is tough to define or spell out in language. We cannot measure what we cannot describe, so this makes for difficulties not only in accounting but also in managing the acquisition, transfer, and application of performative knowledge. On the other hand, many argue tacit knowledge is not so much of a different type of knowledge as under-codified explicit knowledge, a condition potentially resolved by further research (Boisot, 1998).

Knowledge, we assume, is held by individuals who use it to shape or determine their performance. More and more employees are involved with ‘knowledge work’, the manipulation of symbols conveying data, information, ideas, and so forth, rather than the manipulation of materials (Reich, 1992). Knowledge can also be collective, held by teams and communities as shared ideas and values, interlocking collective practices, common language and so forth (Brown & Duguid, 2001). Sometimes knowledge can be bought and sold, for instance, as the rights to manufacture a drug, in which case it has been made explicit, institutionally ‘fixed’ as these legal rights (Teece, 2000). Human capital is seldom like this. At best it might be fixed with a contract to perform a specific service such as writing a program or wiring a house. The purpose of measuring knowledge more broadly is to make better economic sense of one’s expectations of future performance. That way we can approach the goal of managing all of its determinants rather than being obliged to restrict ourselves to only those

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