

Managing Knowledge Assets and Business Value Creation in Organizations: Measures and Dynamics

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Published in the United States of America by
Business Science Reference (an imprint of IGI Global)
701 E. Chocolate Avenue
Hershey PA 17033
Tel: 717-533-8845
Fax: 717-533-8661
E-mail: cust@igi-global.com
Web site: <http://www.igi-global.com/reference>

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Library of Congress Cataloging-in-Publication Data

Managing knowledge assets and business value creation in organizations :
measures and dynamics / Giovanni Schiuma, editor.

p. cm.

Includes bibliographical references and index.

Summary: "this book provides an advanced, state-of-the-art understanding of the links between the knowledge assets dynamics and the business value creation, focusing on the theory, models, approaches, methodologies, tools and techniques for measuring and managing organizational knowledge assets dynamics supporting and driving business performance improvements"--Provided by publisher.

ISBN 978-1-60960-071-6 (hardcover) -- ISBN 978-1-60960-073-0 (ebook) 1.
Knowledge management 2. Intellectual capital--Management. I. Schiuma,
Giovanni. II. Title.

HD30.2.M36455 2010
658.4'038--dc22

2010042282

British Cataloguing in Publication Data

A Cataloguing in Publication record for this book is available from the British Library.

All work contributed to this book is new, previously-unpublished material. The views expressed in this book are those of the authors, but not necessarily of the publisher.

Chapter 1

The Problems and Challenges of Researching Intellectual Capital

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ABSTRACT

The chapter presents an overview of the present state of thinking and research around intellectual capital (IC). I explore IC's potential as a concept and/or a path towards improved organizational measurement and performance. I distinguish theorizing IC as an alternative form of capital that can be summed with tangible capital (TC) from thinking of IC as that which mediates the economic value of TC. This suggests two quite different IC-engaging theories of the firm. I conclude that IC is simply a metaphor for our experience of sometimes dealing successfully with Knightian uncertainty. If this view can be sustained it follows that there is no way of measuring IC and our community's principal project - to correct our accounting methods' failure to do this - is deeply misguided.

INTRODUCTION

To situate IC¹, many lead off with the statement that 'knowledge' has become the key to economic viability and vitality in our present circumstances. But why do we believe 'knowledge' has become so important, displacing other forms of capital as the focus for strategic analysis? As this volume's authors indicate, there are two kinds of answer here - and they lead to very different interpretations of IC's place in the firm and its management.

There is considerable tension between the research programs implied.

The first answer is that it seems clear that the amount of IC, or rather the proportion of most firms' total capital that is non-tangible, has increased markedly in recent decades. Economists have even tried to estimate this proportion. While we do not know the reasons for the rise for sure, we assume it is a result of technological change, the growing demand for services, the rising extent and complexity of global trade, the increased education necessary to participate in today's economy, and so on. Examining Tobin's Q scores might support

DOI: 10.4018/978-1-60960-071-6.ch001

this. It leads on to a discussion about the need to report the firm's IC to shareholders, regulators and other stakeholders if the firm's prospects are to be analyzed properly. It also leads on to a discussion of how IC is built up and how management, by focusing on their organization's learning, might manage the acquisition and allocation of the firm's IC as they do its tangible capital (TC).

The objective here is to correct or at least ameliorate our accounting methods' failure to consider IC and the way this affects management's practice. Overall we argue the world has changed, undercutting the relative strategic significance of TC, and that our accounting and management procedures have fallen behind. Our field's goal is to help correct this and thereby help managers, investors and regulators regain a surer grasp of their firms' strategic situation. The immediate challenge is to develop practical ways of identifying and measuring IC so that new accounting and management methodologies will have something to crunch. We can also hypothesize a firm's success will be more closely related to the sum of its TC and IC rather than to its TC alone, and be likewise related to the degree of attention management pays to building and/or retaining the firm's IC.

I believe this program has drawn most of our field's attention to date. At the risk of offending those of my colleagues who work on this program, I feel that after its initial successes - given that its mere specification attracted the attention of a wide range of managers, regulators, government officials, and others - it has yet to deliver much of value to managers, accountants, or investment analysts beyond the guidelines we find, for instance, in the Meritum, German Federal Ministry or DMTI documents. These are not trifling achievements, of course, and should be well regarded. But as several of our authors note, while they are widely accepted they are little used.

A second kind of answer focuses more directly on - and problematizes - matters the first answer takes for granted. These revolve around the implicit theory of the firm and its value-generating

processes. The first answer simply presumes the strategic importance of IC. The firm is then the sum of its differing capitals, modeled as $\sum(TC+IC)$. Indeed, many authors define the firm as a 'bundle' of resources. But we also know that mere possession of capital - whether TC or IC - seldom explains sustainability or competitive advantage or any of those other terms we use to indicate success or failure. As with the maxim 'it is not what you know, but who you know', the second answer sees IC as a substance or process that moderates or mediates the application of TC. This means IC is not directly comparable to TC - in contrast to the first program's 'relative quantity' argument. IC may be something of a different genus. Those who, like me, regard Penrose's analysis as fundamental here will cite her distinction between 'resources' and 'services'. But the same point can be made in many different ways. The craftsman finds a tool of value only because he knows how to use it; the tool and this knowledge are not of the same type. Those who lack the knowledge find the tool valueless. Note also that the tool's 'use value' may be unrelated to its cost (market value).

The second program, then, leverages from a categorical distinction between TC and IC to probe how organizations add value and become the 'engines of wealth' to be contrasted with markets as wealth-distributing institutions or mechanisms. It suggests a theory of the firm unlike the (TC+IC) one above. The focus shifts from the failure of conventional accounting to note IC, obscuring its value to the managers whose job it is to reach the goals their Boards give them, and moves to deal with the absence of an IC-involving theory of the firm - or, in more practical terms, finding guidelines for the managers responsible for running a firm comprised of both TC and IC.

Using symbols to show the relationship between strategic strength (SS), TC and IC, the first program suggests a firm $SS_1 = f(TC+IC)$ while the second suggests a firm $SS_2 = g(TC*IC)$.

The tension between these programs can be illustrated by looking at the development of the

Balanced Scorecard (Kaplan, 2010). Several decades ago there were two distinct types of commercial accounting, financial and managerial; the first enabling the firm to meet its legal and institutional obligations to external regulators and tax agencies, the second internal, supporting the line managers' in-firm resource allocation decisions. Managerial accounting was based on detailed costing and estimating within what we might now call the value-chain. Its practitioners were called 'cost and works accountants' or 'estimators'. Managerial accounting fell into disfavor as a career path even though line managers were not able to make much use of their firm's financial accounts (Johnson & Kaplan, 1987).

In the 1950s, an era of rapid US economic growth of mergers, acquisitions and the resulting conglomerates, large and complex firms like GE began to look for new methods of within-firm managerial accounting - especially at the divisional level so as to frame each division as an independent cost, investment and profit center. The driving assumption was that each division's strategic characteristics differed and its performance and prospects could not be analyzed using firm-wide criteria. The outcome of this search is well known - the Balanced Scorecard's four-category framing and its 'financial', 'customer', 'internal business process', and 'learning and growth' categories. The typology differed from that implicit in balance sheets and P&L statements, where Generally Accepted Accounting Principles (GAAP) framed factors that could be both measured and summed. Thus many criticized the Balanced Scorecard (BS) because of the difficulty of measuring such non-financial factors or, even more, the impossibility of reducing them to a single objective score that would tell managers and investors whether the firm's value was going up or down. At first sight, then, in the spirit of the first program, the BS seemed to be an unsuccessful extension to current accounting methodologies.

MODELS OF THE IC-BASED FIRM

However, presuming the popularity of the Balanced Scorecard was not proof-positive of managements' irrationality, there may be more here than meets the eye. Instead of thinking of the BS as a failed attempt to extend the GAAP categories towards embracing non-tangibles we might pay more attention to its significant shift of analytic viewpoint - from valuations generated for external investors, analysts, taxation agencies and regulators towards the more idiosyncratic task of managing the particular enterprise's processes. Perhaps we will not be able to understand the value-creation process if we insist on using generic categories; the value-generation process may be profoundly idiosyncratic. Like experience, value may only arise in the instant. If so, IC cannot be summed with TC, as the first program suggests. Rather IC is about the idiosyncrasies of putting TC to work in particular situations, drawing TC into the instants of corporate activity. There is a contrast between generalities and specifics, and IC may be a creature of the latter.

Another way to make this point is to look at the 'business model'. In the classroom we employ highly abstracted notions to describe how firms do business, hoping to our analyses are universal - or at least economy-wide. We want our teaching to be relevant to a wide range of firms, industries and national situations. Adam Smith's idea of an enterprise as the apparatus for compounding capital, land and labor is one example, universal so long as we are sure what we mean by these three factors. But do we - and under what circumstances? Is a bank loan to buy some land the same as a mortgage or a family loan? Are land titles all the same? Is labor generic? But if we have to know all such particulars in order to understand any specific firm's strategic situation, is there any value in Smith's model? Its defenders might argue Smith was not discussing the firm's value-generating processes but was noting the way every firm's factors of production could

be re-allocated so as to match its specific given market conditions better.

There are other models of the firm, of course. But when we discuss IC we seldom make an effort to relate it to any particular notion of the firm. Can we get away with trivializing the definition of IC, ignoring the firm's practices and referring instead to tacit knowledge and bicycle riding? Especially simplistic is the RBV, the popular suggestion that the ownership of a single rent-earning-capable resource should be enough to 'explain' a firm's 'sustained competitive advantage' (Kraaijenbrink, Spender & Groen, 2010). To many, the RBV seems an easy path to the assertion that IC lies at the core of this unique rent-yielding resource, better protected on the grounds of its indefiniteness and inimitability, moving us towards a knowledge-based theory of the firm (KBV). But if we take the second approach we see that IC is only of value when it moderates some specific TC, when we are inside the business-model as a succession of instants of managing the consumption of TC.

What might this second instant-sequenced theory of the firm look like? As we know, Smith's theory of the competitive markets between firms also presumed a division of labor within each firm. Indeed this was his core intuition, that dividing up the production tasks would enable individual workers to focus narrowly on learning how to better their own performance. Such a humdrum but skilled practice-based activity, Smith proposed, would bring forth significant new knowledge and, with that, new national wealth. Here Smith was following the work of John Locke and his argument that it is the 'mixing' of human labor with natural resources that generates new economic value - an $SS_2 = g(TC * IC)$ argument. The theoretically crucial component of this labor is invention not rational decision-making.

Aside from attacking mercantilist economics, Locke and Smith were also arguing against the French Physiocrats who assumed that all economic value already existed, Nature had already created everything of value - a fixed $\sum(TC)$ - and

that our labor was merely about making some of it available to us. Neither Locke nor Smith saw any limit to the value we might create through our inventive labor. The discussions around entrepreneurship theory, and the contrast of Kirznerian and Schumpeterian approaches, are echoes of this earlier debate. Smith paid little attention to the task of coordinating workers whose skills and accumulated knowledge differed, in part because such administration would not add further wealth, being more focused on minimizing the loss of the wealth created by the individual inventive workers. This leads on to classical management's concern with the A/P ratio - the balance of indirects and directs, of those who merely 'oversee the workers' and are an overhead versus those who 'do the value-adding work'.

There are many weaknesses with so simple a business model. Scientific Management, arguably an early KBV, positioned administration as serving the workforce's knowledge needs (Spender & Kijne, 1996). Indirects would, for instance, collect data on the different tools and processes developed by individual workers, analyzing their comparative performance and then standardizing on a 'one best way'. In this model of the firm's administration has a clear productive role to play because the situation is forever changing. The administration's task to monitor the workplace so as to capture the new work procedures evolving there, and so facilitate and drive the firm's evolutionary adaptation to its new situation. This introduces a second distinctive type of IC, the administration's change-observing and change-managing knowledge and skills - now dubbed its 'dynamic capabilities' - subdividing the firm's total IC into productive and administrative categories (IC_p and IC_a) and so creating an additional coordination task. Again invention is key.

Equally the administration has a role to provide the workers with work to do (get orders) and to distribute their production (make sales). This calls for TC and IC resources that differ from those required by production or for adaptation. In this way

the simple input-output model can be elaborated, as in Porter's 5-force model, suggesting further subdivision of IC_a into IC_{a1} - IC_{a5} . An administration has not only to manage the factors of production, the distribution of finished products, the firm's process of recruiting and training its workers, its relations with investors, bankers, regulators and so on, but also deal with the new entrants and new technologies that threaten the firm's rent-stream from beyond the boundaries of its present strategic engagements. At this point our model of the firm has become elaborate, complex and multi-dimensional, implying an extensive division of labor and a correspondingly wide range of ICs that in some way or other mediate the tangible factors of production. One might think these ICs summable but it seems more likely that they will be variegated, incommensurate and inter-mediate each other.

There is also the question of 'organization time'. GAAP provides rules for discounting all past and future transaction into the present time period so a balance can be 'struck' and different firms compared. The objective is to escape the idiosyncrasies of the firm's situation and end up with an inter-firm-comparing figure - such as EBIT or market value. This is fine for market analysts and shareholders considering their portfolio, able to move in and out of a particular stock because a market for these stocks exists, but is it appropriate for those managing a specific firm who do not have this 'exit' option? There are at least three issues here, all related to the firm's 'real-time', as opposed to the timeless market-clearing calculations typical of our classrooms or the artificial strike-point closures of accounting.

As managers begin to comprehend the firm as disaggregated, not merely a variety of resources but also a variety of distinct processes, elements of a value-chain, they appreciate the different time-scales each part experiences. Capital obligations must be met, product ranges need updating, salaries need to change, and equipment needs refurbishing and so on. For each process the timescales differ.

Additionally, naïve theories of the firm overlook 'slack resources'. Firms generally have significant resources that are not in play at any particular time, held 'in reserve' against unanticipated events arising at some future time. Thirdly, any attempts to value these resources stand on heroic assumptions about how organization time and history play into the calculation. In general the notion of valuation seems to deny the significance of the uncertainty about what the future holds for the firm.

IC AS PRACTICE-BASED JUDGMENT UNDER CONDITIONS OF UNCERTAINTY

Finally we arrive at the tensions most fundamental to our field - between what managers know, what the market knows and reflects in its prices, and what remains unknown to be revealed through a firm's own practice. How come we think knowledge, especially IC, so important? It is because we know business invariably operates within a maelstrom of uncertainties - absences of complete knowledge. In the classroom we tend to ignore these and presume complete knowledge. Our thinking is then rigorous and we regard 'causes' as determining outcomes. In practice we lack complete knowledge. But this is not an abstract condition. It is always specific to a task or project, and to the experience of failure and misunderstanding. Uncertainty is always contextualized in the discovery of something specific that we learn we do not know.

There are knowledge-absences around the market prices of the specific resources needed, and other uncertainties about the outcome of the specific practices that integrate and combine the firm's specific 'bundle' of priced resources. It follows the profit-making firm cannot be satisfactorily defined by its capital as the cause, as in $SS_1 = f(TC+IC)$. Rather it must be defined by the uncertain yet capital-absorbing investments management have made in the expectation of a

return. More precisely, it must be defined by these expectations, especially complex because they entail notions of time and uncertainty.

Expectations differ from certainty or science-based predictions because they stand on local and non-rigorous individual judgments rather than on certain knowledge of things 'as they must be'. As Locke told us, in the face of uncertainty, and the impossibility of deciding with 'full rationality' (knowledge), human beings make judgments. Judgments are subjective, idiosyncratic and local to individuals and situations. As a firm's managers come up with an expected value of the resources invested, they make judgments about the time scales of events and returns, and the chances of failure. Every business decision presupposes finite time between investment and return, and as time enters the analysis so does uncertainty.

The various theories of the firm divide sharply on whether uncertainty is considered important or not. Those that think it important divide again into those that see uncertainty as no more than an impediment to fully rational management, something to be discounted and contained with 'risk management', versus those that regard the possibility of profit as deriving directly from the uncertainties the firm embraces. The latter presume 'nothing ventured, nothing gained', seeing uncertainty as an opportunity or challenge to be embraced rather than avoided - the uncertainties of the chutes rather than the certainties of the baby slopes. Economists of this inclination often ground their thinking on Knight's work, his assertion that risk and uncertainty differ, and that profit can only spring from engaging uncertainty in ways that defy rigorous analysis (Knight, 1965). The essence of IC, then, is management's judgments about the returns expected from investing specific combinations of factors of production in a specific uncertain situation. This definition can operate at every level, from the firm as a whole - for instance, management's judging the value of an acquisition - to the individual worker, judging the value of changing a work process.

My essay's central point is that IC makes no sense until we bring uncertainty into the analysis. IC cannot be something abstract or general. It is always the product of and forever attached to a specific experience as a subjective interpretation of that experience, in principle changeable. This is crucial. If all resources had definite value there would be no opportunity for that to be changed by management's judgments. If there were no knowledge-absences there would be no IC. All values would be fixed and invariable, determined in the perfect markets enveloping the firm or, more precisely, by Nature herself. All resources would be tangible, by which we mean priceable in these markets. But given a condition of certainty, as Simon told us, there would be no reason for firms to exist.

The mystery of IC is inextricably tied up with the existence of firms and organizations as engines of value-creation under uncertainty. Many believe firms are related to 'market failures' and that there can be no satisfactory theory of firms - as opposed to markets - without considering uncertainty as the cause of such failures. Thus the economic meaning of IC can only be found in the specific business models we invoke. The economics of IC are related to a theory of the firm that treats uncertainty somewhere within it. We unlock the firm's 'black box' by engaging this uncertainty. We also appreciate how managing an enterprise differs from the shareholders' portfolio management process - different uncertainties and thus different IC. Further, IC differs from TC in ways that define what we mean by managerial decisions. In short, IC is pivotal to a language describing the management's capacity to engage uncertainty successfully and so generate new value, producing profit beyond a normal rate of return.

The relevant IC is always related to what we do not know about particular TCs. In general we argue IC is the product of experiencing these specifics, or communications with others who have 'judged appropriate' experience. This IC can be contrasted with our knowledge of TC,

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knowledge grounded in the relevant efficient markets, assuming a market's knowledge is grounded in the 'best science'. In contrast, the firm's IC is grounded in its own reflections on its 'best practices'. The opportunity for profit arises when a firm can demonstrate in practice that it possesses and can apply 'knowledge' the market does not have. Thus the firm's experience-based IC completes what it knows about the resources invested, compensates for what others do not know about its TC combination practices. This is no mystery. The differences arise because the firm's practices are not those of science, nor those of the firm's principal competitors, should that be the basis for the market's prices.

Each firm is a unique space-time context of practice in which several TCs specific to its business are compounded in its idiosyncratic way. Given perfect knowledge the fully determined and rational expectation (prediction) of any firm's compounding TC_i through TC_j might be P . We can imagine P as the absolute theoretical upper limit of what compounding its resource bundle - TC_i through TC_j - can achieve, given 100% efficiency and the limits set by the relevant invariant Laws of Nature. But given the uncertainties and the bounded rationality of all involved the outcome is actually Q . We can imagine the relevant IC as focused on reducing the gap ($P-Q$). Of course P is a classroom conceit - it can never be determined in the real world. The best managers can do is 'benchmark' competing firms M through N giving them comparative results Q_m through Q_n . Each Q has the form $SS_m = g_m(TC_m * IC_m)$ at time T_m where each IC_m relates to the compounding of the specific TCs TC_i through TC_j for firm M . The complexity of the combination function obscures IC_m . Each Q also shows the firm's management's interpretation of 'satisficing' as management chooses to commit its TCs in spite of the residual ($P-Q$) gap between their condition and full knowledge. Given P can never be determined or even estimated - management can never know for certain that there is a downward slope to the relationship between

knowledge value and discovery costs - their choice to cut further exploration short and focus on exploitation is simply another aspect of their IC_m . Overall, firm X has a strategic advantage so long as $Q_x > Q_{m-n}$ - an advantage conditional on the circumstances on which their IC_m stands remaining as they were - though the one thing we think we know for certain about the future is that everything changes.

All this is perfectly obvious - because it is tautological. But it helps illustrate how each firm's IC is generated from and attached to its own practice, even while others' practices might inform it. Put a different way, every firm's IC must be sieved through and attached to the idiosyncrasies of that firm's unique life-world - the amalgam of its views, experiences, history and practices. This is the impetus behind management's most characteristic question - 'What does it mean for us?' There can be no way of measuring or comparing various firms' ICs or of disaggregating their ICs from their Q s so long as the firms face, or have faced, unique uncertainties. In general, of course, we regard every firm as unique. The epistemological point is that we can only experience a situation one moment at a time, unavoidably embedded in its space-time particularities. Because these can never be completely known, knowledge born of experience can never be universal. As we abstract from the particular to the general we lose the essential insider coherence of our experience and replace it with an outsider's faceted reflections upon that experience, something quite different.

ICs connection to uniqueness seems to deny the possibility of a general theory of the firm that engages uncertainty. The paradox is that absent uncertainty there can be no theory of the firm either. Thus IC is a 'term of art' we have invented to help us probe a middle ground wherein there might be a theory of the firm - a methodologically defined region that lies somewhere between the certainty positivism presumes and the utter uncertainty that denies knowledge of any type. Most importantly, we see IC is a non-economists' metaphor for the

firm-based possibility of economic growth. Penrose's discussion of the experience-based learning of the management team - which limits the rate at which the firm can expand - is simply her way of introducing what we call IC into her analysis. Our field's task can be defined as picking up the challenge she presented us. While we have long accepted the fact that demand is limitless (not that it is infinite, merely that it is beyond calculation) - as Veblen noted with his distinction between basic and luxury goods - we have yet to build a theory of the firm capable of the limitless production to meet this demand.

DOING SOMETHING WITH UNCERTAINTY

There can be no way of theorizing uncertainty - it would be a contradiction in terms - but we can probe how engaging it might add value. What if Locke and Smith were correct in their intuitions that human labor is not merely about transforming the factors of production into finished goods and services - little more than moving stuff around - but also about leveraging from what we think relatively certain, such as TC, into engaging the new uncertainties we have uncovered? If they were right then what could be seized this way is without determinable limit. We can say engaging uncertainty is our way of talking about the human process of creating something of value out of what appears to us, in our human condition of bounded rationality, as coming from nothing - from the domain of possibility we simply do not comprehend. This is not a conjuring trick - it follows necessarily from the (P-Q) gap, from our own knowledge-absences.

Thus over the years we have discovered lime-juice keeps scurvy at bay, that LED bulbs are more efficient than incandescent ones, or that farmers should periodically let their fields lie fallow. Nature P always knew these things. These are examples of our evolving knowledge

of Nature and the frontiers of science move, no question. But we cannot ever exhaust the possibilities of engaging every kind of uncertainty, especially the social ones, those we create as we go along. Who could have guessed mankind's hunger for mobile phone conversation or social networking or plastic surgery? This is not a theory of value-creation - again a contradiction - simply an experience-based assertion. But it has major implications for our field. We must wonder who, among the various actors, is most likely to be able to make good judgments about the possibilities of engaging the specific uncertainties that can be selected to define a firm or organization?

Plainly, if experience is the thing, the insiders immersed in a specific organization's practices are more likely to judge better than outsiders who have no such experience. This is a way to justify the methodological switch that prioritizes a specific organization's practices over any *apriori* theorizing. But how are we to research practitioners' experience-based judgments? This question, and its methodological implications, is familiar to ethnographers and cultural anthropologists. Their research program is not about checking whether the natives' behavior bears out the researchers' *apriori* hypotheses, the positivist approach so familiar from our research journals. Cultural anthropology looks into and respects the natives' own reasons for acting the way they do, looking for their 'theory of the situation'. It means looking for the 'emic' or insiders' view rather than for validation of the researchers' 'etic' or outsiders' view.

The researchers accept that the inside actors are dealing with a set of uncertainties that differ materially from those with which the researchers as outsiders are involved. These uncertainties are not perceptible to outsiders because they relate to different life-worlds. My point is that researching IC calls for us to do the same, to look for the managers' view of the specific uncertainties being engaged. The idea there can be 'objective' etic definitions severed from and independent of their emic views is a methodological error - so long

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as we have no touchstone to test one world-view against another to provide the objective certainty that would resolve all views into one (Truth). It is the Balanced Scorecard's overall score problem again. We might ask the managers of two different firms, such as Apple and HP, about their sense of the IC relevant to their firms' strategic possibilities. But what are we to make of their responses? Absent foreknowledge of how these firms' futures play out, can their ICs be compared in a non-trivializing way?

If we cannot compare different firms' ICs - their management's idiosyncratic uncertainty resolving capabilities - is there anything useful to be done?

I see this as our field's most fundamental challenge. Naturally I believe there is plenty we can do, though it is more likely to be useful to practicing managers than to our academic journals' editors because the former are interested in specific engagements with their own uncertainties while the latter are interested in decontextualized generalities. We do not have to deny IC's mysterious nature, after all human judgment is ultimately inexplicable. At the same time we do not have to say it is utterly unmanageable. There is middle ground between certainty and total knowledge-absence. It is, in fact, the life-world we occupy - and Heidegger may be our guide here.

We are never completely certain, for our rationality is bounded, to use Simon's terminology. Nor are we ever completely uncertain, for we have to know something in order to become aware of any specific knowledge-absence, of our need to make a judgment. We have many ideas about confronting uncertainty. All are about the implicit model of the human being who is capable of arriving at a judgment. Thus we believe people respond well to education and training. When we gather together and collaborate, as in organizations, there is experience sharing, post action reviews, access to experts, research intended to increase our absorptive capacity, environmental scanning, and so on. There are ideas about teamwork and uncertainty sharing, implicit in the notion of trust.

There are ideas about tacit knowledge and the fruits of experience.

Uncertainty is fundamental to the human condition and we have many kinds of procedures, processes, institutions and heuristics for dealing with it. Inasmuch as this is true, rather than thinking we can identify a successful firm's IC objectively, we might do better to observe how its managers deploy these various 'judgment-focused methodologies' to manage others' judgment and so implement their own judgments of the firm's uncertainties and possibilities. The underlying methodological assumption is that this is possible because, at some level, 'people are just people' and the variety of ways we have available to deal with uncertainty are limited. But with this switch to an emic-oriented methodology, the agenda changes from believing we can know a particular firm's IC better than those within it, a positivist conceit, towards trying to help those within firms manage their uncertainty-engaging processes better.

Fortunately there are many examples of re-researching IC the emic way - strategic case-studies are often in this vein. One good example close to hand is Schiuma, Lerro and Sanitate's work with Ducati (Schiuma, Lerro, & Sanitate, 2008). As our volume's readers know, their research process began with extensive ethnographic study and interviews with Ducati's managers, opening them up to the managers' emic views. They listened rather than presupposing they knew better. Given they eschewed *apriori* theorizing and the familiar process of hypothesis generation, the central methodological part of their paper is devoted to justifying the 'Knowledge Tree' as their lens for ordering the data generated. It turns out that agreeing or disagreeing with this framework, or pointing out the inconsistencies between it and the Ducati World, is unimportant - a matter for academic squabbles.

It is more important to see how much the Schiuma, Lerro and Sanitate framework has in common with Porter's well-regarded 5-force framework - and with the Balanced Scorecard.

To see any of these frameworks as a determining theory is to misunderstand the emic methods being adopted. All three sketch the specific situational uncertainties the firm has engaged. So these frameworks are heuristic and rhetorical devices to help shape the managerial judgments being called for. They are not determining theories that would render managerial judgment irrelevant. The researchers' choice of a judgment-oriented emic methodology switches their analytic vantage point from outside the firm's idiosyncratic domain to its historically contextualized inside, from the universal to the specific, from the discourse of determining theory in which IC means little to the discourse of uncertainty engagement in which IC means everything.

The findings are no more than Schiuma, Lerro and Sanitate's own judgment-dependent story of how Ducati's IC came to be managed with success, effecting a turnaround, and, by inductive extension, might be managed in the future. But again this does not follow logically; their project is not about developing a universal theory of managing IC - another contradiction. It is about constructing and justifying their story of how strategic choices shaped Ducati's managers' focus, especially valuable because their attention and experience is so limited. Things might change and Ducati's present ways of doing things rendered obsolete, so calling for the cycle of IC regeneration to begin again. Once we admit uncertainty there can be no final or definitive answers. But with this switch of view from the outsider's science to inside the business model, the IC researcher is redefined as an observer, guide and illustrator, not someone wishing to best or usurp the manager's IC.

CONCLUSION

In this introduction my purpose has been to suggest that IC presents us with a methodological challenge rather than an accounting one. This is the fundamental distinction between programs one

and two. Our own IC, as academic researchers, guides our strategic choice. We can force IC into the familiar framework of positivist theory by judging it similar to TC - or we can leverage the fundamental difference between IC and TC to help us into a very different view of what managers do for their firms. The options are between rational decision-making or developing and deploying judgment; strategy, entrepreneurship and leadership, of course, are about the second. Given our IC is shaped by our communication with others, our academic journals and the task of publishing there drive us towards institutionalized positivist norms. But if our concern is towards helping practicing managers and we respect them enough to listen to them, we move towards program two. In spite of the popularity of free-market principles, micro-economists seeking a theory of economic growth are presently looking for something within firms, as opposed to something within markets. IC is our version of what they are looking for.

For many readers, my most obvious mistake is to completely misunderstand the nature of tacit knowledge as the primary constituent of anyone's or any organization's IC. They might argue that, yes, IC is experience-based but evidences a general human capability to carry something of practical and economic value from context to context. The real debate, they might say, is whether this capability resides at the individual level or the collective level. My intention in this essay has been entirely different. It is to make a case that the popularity of the Polanyi-based psychological model (to which Penrose also referred) has deflected our attention away from the methodological implications of prioritizing a practice-based definition of knowledge over a theory-based one. The reason to correct this methodological error is our need to engage uncertainty, to recognize that every real context is under-determined and so calls for judgment (IC) that must be made firm specific. I am shifting the grounding from the psychology of the individual to the specifics of the context. That presumes, of course, a particular model of

the individual, one who generates new IC when confronted with a specific knowledge absence, rather than one who carries a full load of IC from elsewhere.

We should bear in mind that if managing is co-defined with firms, the fact that we have no rigorous theory of the firm should give us pause. As we look to the work of Knight and Schumpeter, for example, as theorists who sought a theory of the firm that would admit the possibility, though not the certainty, of economic growth and entrepreneurship (the same thing, of course), we see a way to step outside the conventions of positivist theorizing and engage the fundamental Coasian questions about why firms exist and how or if they differ from markets.

Our field's answer, ironically, may be that firms and organizations are the social institutions we have judged best suited to generating value under circumstances of uncertainty, when there is no case for the closure implied by Laws of Conservation that deny value-creation and admit only resource transformation. On the contrary, firms are a consequence of our appreciating our own bounded rationality and choosing to deal with it in a particular institutional way. Firms then reveal the deep economic magic of seeming to produce something from nothing—pulling a real rabbit from the (P-Q) hat; something quite different from the Invisible Hand magic that efficiently reallocates our presumed finite resources and opportunities.

Thus, contrary to the notion that it is knowledge that has suddenly become important, it is actually uncertainty, knowledge-absences, that have become important. We have concluded the path to growth lies in grasping and engaging the experienced uncertainties of our lives in ways our forebears paid less attention to. Our times are principally about engaging the uncertainties and opportunities revealed by science, technology, and our consumption-based notions of living standards. Earlier times were different, focused on religious and political uncertainties, perhaps,

when people searched for wisdom. For us IC is essentially secular and focused on our experience of the physical and social worlds. This is our version of modernism, and it springs from an unjustifiable belief in our individual and collective abilities to address and engage these worlds' uncertainties.

REFERENCES

- Johnson, H. T., & Kaplan, R. S. (1987). *Relevance lost: The rise and fall of managerial accounting*. Boston: Harvard Business School Press.
- Kaplan, R. S. (2010). Conceptual foundations of the balanced scorecard. *HBS Working Paper 10-074*.
- Knight, F. H. (1965). *Risk, uncertainty and profit*. New York: Harper & Row.
- Kraaijenbrink, J., Spender, J. C., & Groen, A. (2010). The resource-based view: A review and assessment of its critiques. *Journal of Management*, 36(1), 349–372. doi:10.1177/0149206309350775
- Schiuma, G., Lerro, A., & Sanitate, D. (2008). The intellectual capital dimensions of Ducati's turnaround: Exploring knowledge assets grounding a change management program. *International Journal of Innovation Management*, 12(2), 161–193. doi:10.1142/S1363919608001935
- Spender, J. C., & Kijne, H. (Eds.). (1996). *Scientific management: Frederick Winslow Taylor's gift to the world?* Norwell, MA: Kluwer.

ENDNOTE

- ¹ To ease the discussion along I shall equate firms and organizations, even though that means glossing significant differences between public and private sector activities, and between different countries and regulatory regimes. All would be necessary to under-

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standing or evaluating any particular firm's IC or management's activities. I shall also gloss over differences between IC and any other forms of 'organizational knowledge',

so ignoring distinctions between 'human', 'social', 'structural', 'relational' or other forms of non-tangible capital.