JUHANI VAIVIO

The Business Controller, Non-Financial Measurement and Tacit Knowledge

ABSTRACT

This paper examines how pro-active business controllers can assist the articulation of tacit organizational insights, contributing to knowledge creation and learning. The study focuses on incidents of non-financial performance measurement. It identifies three scenarios where the business controller mobilizes non-financial measures, in interactive spaces of considerable tension: Within a divisional performance paradox (where financial and non-financial measurements send conflicting signals), in provocative interventions into operational detail and in cross-functional debate around non-financial measurement, the business controller can face the conversion of key tacit insights into explicit knowledge. The paper offers a theoretical discussion and starting point for empirical inquiry in this particular field – of growing importance to the academic pronouncements concerning the controller's profile and competence development. But the paper also holds urgent professional relevance: Business controllers may wish to secure their position on the organization's learning-agenda.

The author wishes to thank the anonymous reviewers for their valuable comments and suggestions.

JUHANI VAIVIO, Professor (act.), Helsinki School of Economics, Department of Accounting and Finance
• e-mail: juhani.vaivio@hse.fi

INTRODUCTION

It is being argued that *tacit knowledge* is central to a resource-based view of the firm, the development of core competence and the creation of sustainable competitive advantage. Because tacit knowledge has a ”silent” and implicit character, and is difficult to replicate, it may provide the organization with a real competitive edge vis-à-vis its rivals (Prahalad & Hamel 1990, Lubit 2001). Hence, tacit knowledge has been advanced as a notion of considerable strategic significance. It has been related with the discovery of emergent strategies, with active ”knowledge management” and with the fostering of ”intellectual capital” (Spender & Grant 1996, Spender 1996, Ambrosini & Bowman 2001, Mintzberg 1990, Earl & Scott 1999, Klein 1998[1]). Moreover, tacit knowledge is a fundamental concept in the theory of organizational knowledge creation and organizational learning. The conversion of tacit knowledge into explicit knowledge is a critical phase in the firm's knowledge creation process (Nonaka et al. 2000a/b, Nonaka 1994, Nonaka & Takeuchi 1995, Nooteboom 2001).

This paper traces a number of connections between particular management accounting technologies and tacit knowledge[2]. More specifically, it lays out how practices of *non-financial performance measurement* – mobilized by pro-active *business controllers* who operate within local contingencies and the often conflict-ridden management situations of contemporary settings – become implicated with the discovery of tacit knowledge, nested deep inside the organizational texture (Granlund & Lukka 1997, Tuomela & Partanen 2001, Järvenpää 2001, Vaivio 2004). Currently, our understanding of the potential of non-financial performance measurement, as a common practice of the contemporary controller who seeks to uncover tacit knowledge within the firm, remains underdeveloped. Because relatively little is known about how controllers, and their professional competencies, may become related with tacit knowledge in the context of the *tensions* that often arise within non-financial performance measurement, this research note offers a kind of ”access point” for the accounting scholar. It provides a clarifying discussion of theoretical background, some conceptual innovations for restructuring and problematizing the terrain, as well as a more practical research agenda to follow. Hence, the paper serves primarily as a platform for further research in this still uncharted area, where especially empirical contributions are urgently needed. But the paper's reflection and argumentation also contain practical relevance: Controllers should not become marginalized within the popular discourse of ”knowledge management” in particular[3], realizing fully the learning opportunities they encounter whilst measuring organizational performance.

1 For a critical appraisal of knowledge management, see McNamara et al. 2004.
2 See e.g. McNamara et al. 2004 also on the implications that the management of organizational knowledges has for management accounting.
3 On managerial needs and expectations regarding accountant's roles, see Pierce & O'Dea, 2003.

The paper's argument is, of course, advanced in a tentative spirit. It invites other theoretical perspectives, competing research logics and empirically based pronouncements on how to realize the knowledge-creating potential that controllers hold in specific instances of performance evaluation. The paper is organized as follows: First, it examines the concept of *tacit knowledge,* and discusses then its meaning from the perspective of the new *role* and the *competencies* that organizationally embedded, pro-active business controllers may become identified with. Second, it sketches three potential *scenarios* where contemporary controllers become intertwined with non-financial performance measurement and corresponding organizations *tensions* – in an interactive organizational space where tacit knowledge becomes articulated. Finally, the paper traces the research implications of these suggestions, pointing out *avenues* of further enquiry.

1. TACIT KNOWLEDGE AND THE CONTROLLER'S NEW ROLE

Tacit knowledge

In academic discussion, the origins of the concept of tacit knowledge are often attributed to the seminal philosophical study of Polanyi (1962, 1966 p.4), who introduces tacit knowledge as something deeply ingrained in human mind and body: ″*We can know more than we can tell*″. But the theoretical starting point of this paper goes beyond this much celebrated definition, following instead the more mundane approach of Ambrosini & Bowman (2001): This paper introduces tacit knowledge as something organizationally *valuable* and *practical* and something that *can be accessed* under certain favourable circumstances. Tacit knowledge in organizations is about silent understanding that agents acquire in the context of their tasks, roles and professional identities[4].

Organizationally critical tacit knowledge can be about doing ordinary things, about everyday action. Instead of being ″grand″ insight, tacit knowledge is often about taken-for-granted practical knowledge – which is not yet articulated in verbal form, and is far from being formalized into information systems or computer networks. Tacit knowledge is about personal skills and know-how that agents develop within working routines and sedimented operating practices. It is about ″hunches″, impressions, and rules of thumb that structure the local realities where agents become immersed. It is about subjective meanings and scripts of conduct that develop in specific contexts and unique situations, serving as a cognitive basis of action to agents, often in the local ″micro-worlds″ of professional niches, far from the organizational centre. These subjectively constructed meanings that emanate from the organizational periphery can, however, become vital ingredients

4 We have to admit, however, that parts of an agent's tacit understanding may remain beyond our reach, being so deeply ingrained in human consciousness as to resist transformation into the explicit.

in an "inductive" or operations-based view of strategy creation (see Regnér, 2003, Hayes & Upton 1998).

The local character of tacit knowledge relates this concept to the management accounting research tradition known as the "Gothenburg School" (Jönsson 1996, 1992, Hedberg & Jönsson 1978, Jönsson & Grönlund 1988, Jönsson & Solli 1993). In this stream of enquiry, local learning processes, local information systems, as well as the problematic aspects of control in central and local modes have been investigated. It is being emphasised, that a large part of ongoing organizational learning actually takes place at the local grass-root level, in different operational processes and in decentralized, locally situated experiential instances. Hence, this paper stands in alignment with these notions – recognizing tacit knowledge as a phenomenon, which materializes at local levels within the organization.

Although tacit knowledge is not normally articulated in the flow of everyday organizational events, this argument builds on the view that it can be accessed by fitting words onto these locally situated, subjective experiences and cognitive patterns – by asking the right questions, by listening attentively and by relying on metaphors and storytelling (see Ambrosini & Bowman 2001, pp. 814–816). Tacit knowledge can thus be converted into *explicit* knowledge in processes of externalisation, becoming a shared, social phenomenon (see Nonaka 1994). In processes of organizational interaction, dialogue, and debate, tacit knowledge gradually becomes articulated in verbal form, perhaps suggesting intriguing local insight that may hold wider significance, contributing to learning and the creation of new competitive initiatives.[5]

In order to understand the instances and locales where tacit knowledge becomes converted into explicit knowledge, the concept of *ba* has been put forth (Nonaka et al. 2000a/b, Nonaka & Konno 1998). Stemming originally from Japanese philosophy, the *ba* suggests a shared context, an essential platform or space where tacit knowledge becomes converted into explicit knowledge. The *ba* can be a physical site but also an immaterial shared space, which harbours new meanings and emerging relationships between organizational agents. It acts as a foundation for knowledge creation. An office, a working team, a teleconference or an impromptu meeting can become a *ba* where tacit knowledge is embedded and becomes externalized. *Ba* is also a fluid context – it can be born quickly, but also disappears quickly. In an *interacting ba*, through dialogue and conscious efforts of verbalization, tacit individual mental models and experiences become con-

5 The discovery of tacit knowledge, and its conversion into explicit knowledge, is a critical part of the process of organizational knowledge creation. It must be emphasized, however, that the *dynamic process of knowledge creation* also includes *other stages*. According to Nonaka et al. (2000a/b), the "spiral" of knowledge creation includes four modes: 1) socialization, the sharing of tacit models 2) externalization – where the focus of this study lies – when tacit knowledge becomes transformed into common words and metaphors 3) combination, where explicit knowledge is coupled with other sources of explicit knowledge, like documents and databases 4) internalization, when explicit knowledge becomes selectively embodied into individual actions and practices. (see also Nonaka 1994, Nonaka & Takeuchi, 1995).

verted into common terms, metaphors and concepts: Organizational agents try to share the mental models of others, but also explore and explicate their own (see Nonaka & Toyama, 2005, pp. 427–429, Nonaka et al. 2000a, pp. 8–9, Nonaka & Konno 1998, p.47).

The notion of the *interacting ba* suggests that tacit knowledge becomes externalized in relatively consensual, trustful and smooth, co-operative organizational situations and exchanges. The argument of this paper is not contradicting this view, but adds another dimension to it: An *interacting ba* can also become a space of open organizational conflict. It can be a shared space of intense, even fiery argument and debate – a space where different interpretations, opinions and interests collide with each other, letting out the tacit mental frames of the participating agents. Increased tension within the *interacting ba* can thus contribute to the externalization of tacit knowledge. But this paper further suggests that increased *tension* between organizational agents – especially within the instances and managerial situations relating to performance evaluation – should be examined as a positive force that leads to the articulation of tacit understandings. The tension that relates to the mobilization of non-financial management accounting performance measurements may lead to the articulation of tacit insights. And overt resistance to non-financial measurement can become a positive phenomenon from the perspective of knowledge creation (see Vaivio 2004).

Hence, this paper takes the perspective that tacit knowledge represents potentially valuable, practical, and locally grounded understanding that can be accessed. It further suggests that tacit knowledge can become exposed in organizational instances of considerable tension, where contemporary controllers are present, in their new, more active organizational role. Whilst evaluating organization performance with the technology of non-financial measurement, controllers can take initiative also in terms of organizational learning and knowledge creation. They would extend their professional interest and contribution towards the discovery of tacit strategic and operational insights (see Coad, 1999). This is essential for maintaining the relevance and professional status of controllers within the increasingly learning-oriented organizations of our time (Choo 1998, Nooteboom, 2000, Granlund & Lukka, 1998).

The Controller's More Active Role

Traditionally, accountants and controllers have been stereotyped as prudent, historically oriented ″bean-counters″ or constraining organizational ″watchdogs″. Instead of looking at the future and casting different projections on it, the professional profile of the controller has emphasized cost-consciousness and a detailed, factual analysis of the past. Moreover, the traditional controller has not excelled in communication and argumentation skills, preferring a somewhat withdrawn and anti-social, less team-oriented working method (see Granlund & Lukka 1997, 1998). Although such a stereotype of the traditional controller as being preoccupied by conservatism, precision and form may be exaggerated and overly simplified (see Friedman & Lyne 2000, Vaivio 2006b), it seems justified to claim that the conventional skills and competencies associated with the established expert identity of the controller have not supported the more active, learning-oriented task of exposing intriguing niches of tacit knowledge within the firm.

It has been argued, however, that the perhaps joyless and boring ″bean counter″ controller should adopt a new professional profile. This is critical especially in the context of the fast-moving, more organically structured and informal organizations of our time (Child & McGrath 2001, Galunic & Eisenhart 2001, Dijksterhuis et al. 1999). The profile of the new *business controller* in our dynamic and more knowledge-intensive era is characterized by an increasing business-orientation, by a commercial way of thinking at the firm's operations and by an attention to field detail – ranging from technical or logistic issues to subtle marketing efforts and customer-related service questions. The business controller should have a thorough understanding of the micro-realities underlying both financial and non-financial figures.

The business controller could be equally familiar with broad strategic issues, as well as with critical operational detail. And instead of being a detached staff expert, the business controller may often work ″hands-on″ within cross-functional teams and *ad hoc* task forces, providing support for better management decisions at the local level. From being a ″historian″ or ″watchdog″, the business controller should now develop new competencies. The business controller moves towards being more like an adviser, internal consultant, bridge-builder or change-agent, taking organizational initiative and being more innovative (Granlund & Lukka 1997, 1998, Malmi et al. 2001, Järvenpää 2001, Emsley 2005, Vaivio 2006b, see also Partanen 2001, pp.325–334). It has to be underlined, however, that such a progression is not likely to be a straightforward and unproblematic process (see Tuomela & Partanen 2001.)

If this pro-active professional profile gradually becomes realized more fully in the rapidly evolving, increasingly expert-oriented organizations of our time, the contemporary business controller is likely to emphasize the present and the future instead of the past. S/he will have broader responsibilities and will have a solid appreciation of cross-functional interfaces. The business controller may also be driving some critical organizational change initiatives. Hence, also advanced communication and argumentation skills characterize the business controller's new expert identity. The business controller should be more familiar with the different expert ″languages″ and concepts used by other organizational professionals, ranging from sales managers to designers and production specialists. These verbal competencies, coupled with analytical skills, an inquisitive mindset and the ability to manage conflict in organizational encounters, are essential especially if the business controller is actively involved in organizational learning-efforts, seeking to uncover niches of tacit knowledge. More specifically, the context of non-financial performance evaluation provides organizational instances of increased tension where the business controller can become active in his/her learning capacity.

2 NON-FINANCIAL PERFORMANCE MEASUREMENT AND TACIT KNOWLEDGE

In recent years, influential calls have been made to include non-financial measurements into management accounting practices. Especially, the notion of *The Balanced Scorecard* suggests that non-financial measurement should complement traditional financial monitors of performance, building on a long tradition of discussion about more ”strategic” non-financial indicators (Kaplan & Norton 1996, 1992, Parker 1979, Bungay & Goold 1991, Rockart 1982). Assisted by commercialised improvement agendas, non-financial measures have entered management processes, reconstituting organizational reality (Vaivio 1999a/b).

With non-financial measurement, the pro-active business controller receives a powerful technology of performance evaluation. Performance can be approached from several perspectives, adding more depth and also more strategic considerations to the traditional, often ”short-termist” and limited financial review (Ittner & Larcker 2003, Merchant 1990, Hayes & Abernathy 1980). New, more concrete dimensions of performance can be traced in quantitative terms. Non-financial measurement probes deep into organizational activities, endowing the business controller with a ”microscopic” instrument. The specifics of local practice – not just the outcomes but the more detailed *how* of local actions – become visible beyond conventional, aggregated financial measurements. Moreover, with various non-financial performance indicators the business controller maintains a sensitive record of formalized ”hard facts” concerning local agents, which can be open to public scrutiny within the firm.

From the perspective of business controllers who seek to discover sources of tacit knowledge, non-financial measurement suggests three potential interacting spaces. These bear a resemblance to the concept of *ba*. But they contain considerable organizational tension, different forms of local resistance and possibly overt conflict. First, non-financial measures can create a *performance paradox* in divisional performance evaluation. Second, non-financial measures of local operational performance can become a medium for *provocative* interventions into intriguing organizational niches, exposing intricate *operational detail*. Third, non-financial performance measurement across internal structural boundaries can be injected into key organizational interfaces, sustaining *cross-functional debate*. These potential ways of mobilizing non-financial performance measurement can introduce new forms of questioning, argumentation and debate. Tacit knowledge could emerge and become externalized within these more controversial spaces of interaction.

Creating a divisional performance paradox

Especially within larger, decentralized and divisionalized responsibility structures, the corporate CFO and unit-level business controllers can face a *divisional performance paradox*. Traditional, short-term oriented financial measures and more ″strategic″ non-financial performance measurements may not point to the same direction, but suggest incongruence. For instance, a divisional-level *Balanced Scorecard* can convey positive signals on the unit's financial performance, but also indicates negative results along more fundamental dimensions of performance, measured in non-financial terms. Good financial performance becomes coupled with poor achievement along the more strategic monitors of performance. Profit, sales and ROI can remain at a high level, but for example quality, process-time and customer loyalty measures appear unsatisfactory.

In a divisionalized structure, this inconsistency acts as a destabilizer. It increases tension between the corporate centre and the divisional level. The performance paradox puts the focused unit's long-term prospects into question. It cries for an urgent response. A kind of ″semi-confusing″ information system is in fact installed when the financial performer suddenly appears as a non-financial non-performer (Hedberg & Jönsson 1978). At first, the validity of the measurements may be denied by divisional management. Also, divisional management may fend off the paradox as a temporary problem, an anomaly which would not last. But if the incongruence persists, real answers – and a plausible analysis of the situation at hand – must be provided. Possible explanations for the confusing disaccord will gradually be supplied to corporate management.

The divisional performance paradox can suggest a break with ″institutionalized″ corporate history. It may contradict with deeply rooted idealizations concerning the entity's performance, especially if the unit has been considered a profitable, efficient and well-managed entity, which has not been a source of more fundamental concern. A good reputation within the multidivisional setting can become questioned. Collectively held appreciations of the unit's competitive strength and its future business potential become shaken. The myth of continuing, linear financial success becomes reassessed. Non-financial measurement which is available at the corporate level, and at the unit business controller's disposal, now documents that the record of good financial performance may have been achieved at the expense of more strategic factors. It can be feared that with some ″time lag″ the negative financial consequences of poor strategic performance will materialize on the financial dimension.[6]

The divisional performance paradox probably creates confusion within the measured locale. It contradicts with divisional ″identity″. Hence, the division's strategy becomes re-evaluated. In terms of responsibility accounting, the performance paradox may also generate debate about divisional autonomy, the controllability principle and internal transactions within the multidivisional setting (Ezzamel 1992, p. 23–25). But this friction can contribute to the emergence of

6 Of course, it is not self-evident that the available non-financial data always stands for reliable and valuable information. In the worst case, non-financial measurements may give management misleading signals, especially if no ″measurement tradition″ exists; see Vaivio, 1995, pp. 103–105. Also, e.g. quality-related non-financial measurements may not always hold predictive power in terms of the upcoming financial results. Financial performance is affected by multiple factors, many of them lying beyond the enterprise's control.

tacit understanding, since new interpretations of the unit's strategic environment, new operational theories and new causal patterns of the current ″business model″ are pursued. These would explain the incongruence in performance.

Field observations or illustrations of recent problems in the fields that the non-financial measurement indicates, and practically embedded stories about why the unit does not meet its strategic targets, are discussed in collective divisional settings – in the presence of the business controller. A critical reassessment and debate concerning the divisional locale's operating practices, and possibly a re-evaluation of its interrelations with other units within the corporate hierarchy, are likely to follow. Remedies that would eliminate the performance paradox, based on now explicitly articulated causal schemes of multiple divisional agents, become suggested.

In a potentially less consensual divisional space of interaction, in an interacting *ba* where the unit's business controller can be present – possibly taking the role of an ″envoy″ who has been sent by the mother-company, or the role of a ″bridge-builder″ between the centre and the daughter unit – the involved agents mobilize their tacit understanding (Partanen, 2001, pp. 147–149). They verbalize different implicit schemes of thinking and scripts of behaviour concerning their functional practices and specific modes of action within the business-processes of the addressed locale. Earlier these patterns may have appeared as too trivial and emotive ″hunches″ about operating practices. Equally, they may have appeared as unjustified reservations. Or they may have been held back as too subjective impressions about details in local performance to be publicly expressed. The acknowledged divisional performance paradox now represents a formalized justification for reflecting openly and for speaking out. It triggers the articulation of otherwise tacit insights.

The performance paradox that focuses on a relatively autonomous divisionalized entity can, however, take also another form. The addressed locale can show good ″strategic″ non-financial achievement, but fails to produce satisfactory financial results. A non-financial performer remains a financial non-performer. A plausible course of events can here be envisaged: Especially if the good strategic performance has for long been associated with poor financial results, a critical re-examination concerning the unit's strategic orientation becomes justified, since non-financial performance should finally materialize as financial success. At some point, for example high customer satisfaction should yield better profitability.

In these circumstances, similar tensions as described above may arise. They also lead to the mobilization of tacit understanding, within an interactive organizational space where the divisional business controller actively participates. The unit's financial strategy is now put under critical scrutiny, in the light of the performance paradox. A revised strategy that also meets financial expectations is called for. As this requires fundamental changes in operations, new theories of action – advanced in the name of ″restoring profitability″ – become expressed in collective interaction. Emergent causal patterns about the business, if allowed to support the creation of a revised strategy, are likely to surface in these organizational exchanges. The re-evaluation of the present and the crafting of the financially brighter future will be made by respective managers – drawing upon their local experiences and know-how. Tacit knowledge, for instance about controlling costs, cutting back some ventures and rationalizing production, should become transformed into the explicit dimension.

Exposing operational detail with provocative measures

Non-financial measurement of performance can, however, also become a medium of the learning-oriented business controller for narrowing down onto the level of the organization's detail. S/he can produce focused interventions deep into operational niches that *a priori* stand for intriguing tacit knowledge elements. Because of its considerable ”focus potential” (Vaivio 1999b), non-financial measurement exposes the intricacies of local activity – what for instance takes place within a specific functional activity cell, in a multi-stage production process. Thus, the business controller can move beyond the generality of financial aggregates. At his/her wish, the business controller can reduce the prevailing distance to key operational issues. By exposing operational action with a documented record of ”hard” non-financial performance measurements, the business controller becomes linked with tacit understanding that could lie dormant in the professional working cultures of the business' front line, or possibly in marginalized enclaves of the perceived value-chain.

Probing into the practical detail of local operating practices, for instance with somewhat ”Tayloristic” measurements of time, the business controller can problematize operational activity. New quantitative targets, more specific standards of conduct, or stringent external benchmarks can be introduced. Moreover, a formal monitoring track of trends and deviances in the non-financial data can be used for intervening into any of the monitored locales. New questions can be asked about on-site working arrangements and modes of operating in certain situations (see Vaivio, 2006a). The business controller can re-examine and criticize established practices with reference to a formalized track record – showing for instance how much time key sub-activities in fact consume, or by linking some types of customer complaints with specific responsibility areas. This *Orwellian* surveillance and direct intervention would, undoubtedly, strain relations between the business controller and local agents. But in appropriate conditions, as for example in a crisis-context or during a major transformation of the organization's culture, this could represent a way of gaining access into tacit knowledge that resides in critical operational niches.

Resistance to management accounting systems and the bureaucratic interventions they become associated with have been widely acknowledged (Scapens & Roberts 1993, Ezzamel 1994, Burns & Scapens 2000, Major & Hopper, 2005, Vaivio 1999a). Intervention by the business controller – being imposed top-down, reducing local autonomy and shifting established patterns of power and influence – is likely to meet different forms of resistance (Kasurinen, 2002, Bariff & Galbraith 1978, Markus & Pfeffer 1983). This resistance ranges from passive non-compliance to open conflict and overt rebellion. However, for the purposes of knowledge creation, resistance to the non-financial performance measures mobilized by the business controller can become a positive ″trigger″. Resistance can lead to the externalisation of tacit knowledge. Non-financial measures of local performance can problematize focused niches, and *provokes* the affected agents into an articulation of their tacit, private operational insights (Vaivio 2004)[7]. This form of intervention into the minutiae of organizational life is of course a controversial effort and contains significant risks. It implies high organizational tension, and certainly represents a less consensual method of discovering tacit knowledge.

Provocative non-financial measurement of operational performance challenges local autonomy. It disturbs the prevailing order. It brings transparency to everyday issues that usually remain beyond the reach of quantitative, formal tracking. Therefore, this measurement is likely to become rejected. The local agents subject to the intrusive measures would often deny the validity and relevance of this quantification, but may also find other means to resist this focused intervention. They reconsider their local practices, routines and operating conditions for clues that could be mobilized as discursive arguments against the measurements, in an interactive local *ba* where the business controller is present.

Facing the business controller, operationally responsible agents look for pieces of evidence that can be reinterpreted – to reflect on the performance, organizational standing, and efficiency of the niche's practice. The concerned agents need dramatized examples – especially illustrative stories and convincing metaphors – to justify prevailing practice against the business controller's intrusion. Whilst doing so, local agents revisit their tacit scripts of operating and the cognitive maps they employ to create meaning in everyday incidents. They verbalize tacit knowledge in their resistant discourse, sparked by the *provocative* measurement (see Vaivio 1999a pp. 703–707, Vaivio 2004).

The *provocative* non-financial measurement of focused niches is a radical departure from more consensual approaches to knowledge creation. It may jeopardize more important considerations, such as a good working culture and trust between different expert groups. In can also undermine the functioning of other accounting systems, like traditional budgeting and cost accounting systems, which are relied upon by the business controller (see Vaivio 2005, pp. 203–208). Nevertheless, in extreme conditions, as for instance in situations where large bureaucracies

7 For an empirical illustration concerning *provocative* non-financial measurement which addressed ″The Customer″, in the context of Lever-Industrial – U.K., see Vaivio 2004.

should urgently be transformed into more dynamic entities, or during post-acquisition integration within mergers, provocative non-financial measurement may come under consideration. It can become mobilized selectively, for tackling particular rigidities in the organization, and for examining the most critical niches of operational understanding that bear strategic importance (see Regnér, 2003, Hayes & Upton 1998). Here, the business controller faces a context where s/he could adopt the role of an active organizational ″change agent″ (Lukka & Granlund, 1997, 1998).

Cross-functional debate and non-financial measures

Finally, non-financial measurements may become linked with operational tacit knowledge in yet another category of organizational incidents. The business controller can mobilize these monitors for stimulating *cross-functional debate*. Non-financial performance measurements, possibly integrated into a *Balanced Scorecard*, provide new formal information about internal processes. They concern different, interrelating functional perspectives. Several cells of formal responsibility, different interest groups and competing areas of expertise become affected by detailed non-financial performance measures. For instance unsatisfactory delivery times or poor quality measures can point at many functional interfaces and joint operational routines. And the business controller can rarely assign responsibility for this cross-functional performance to one party alone. Performance must be examined, shared and negotiated by a variety of agents, representing interconnected activity areas.

Functional interaction, co-operative relays, mutual technological linkages and logistic dependencies within the firm become recognized and assessed against a quantitative monitoring track. Therefore, as has been empirically illustrated, non-financial measurements can constitute a ″calculable space″ (Miller 1994, Miller & O'Leary 1994, Vaivio 2005, 1999a/b), where competing organizational perspectives, interpretations and interests collide – and where intensive debate takes place in the presence of the business controller or the unit CFO. This space also bears a resemblance to the notion of the interacting *ba*. Within this space, however, multiple tensions prevail – instead of a purely collaborative spirit. In a politically charged cross-functional debate around shared performance measurement, tacit knowledge from various parts of the organization can become articulated.

Non-financial measures do not provide neutral information that can be agreed about. Instead, different interpretations can be given to what these measurements really signify in terms of organizational achievement, and to what problems they really point at. The measurements can be explained in ways that contradict each other, and they do not suggest unidirectional actions. They can highlight competing urgencies. They can imply a variety of perhaps incompatible solutions. Hence, non-financial performance measures often lead to emotive reactions in the cross-functional instances where organizational agents are pooled to discuss the shared measurement (see Vaivio 1999a).

Furthermore, these measurements of ”horizontal” performance provide a valuable political instrument for interdepartmental turf battles. In the context of a cross-functional *ba* or ”calculable space”, non-financial measures may become ammunition in attacks against rival functional groups or fractions – for instance between more technically oriented managers within production and a field-based marketing force (Earl & Hopwood 1980, Bariff & Galbraith 1978). The measurement can be presented as finally confirming some parochial interests: claims of inefficiency and mismanagement in a neighbouring part of the value-chain.

Attempts to reform organizational order can be formally justified, at the expense of another interest group. However, non-financial performance measurements are also effective defences against internal criticism. Unfounded negative rumours can be marginalized with ”hard” data. To some operational locale under pressure, non-financial measures provide formal evidence of good performance – forcing vocal critics to a retreat. Because of their argumentative power and political potential, non-financial measurement is embedded into a continuous debate, in a cross-functional context. The business controller's underlying purpose of witnessing the conversion of tacit knowledge into explicit knowledge benefits, however, from this organizational friction.

Within the tensions of this debate – where the business controller takes the role of a discussion generator and leader – the involved agents extract cues from their tacit understanding. These cues relate to the operational frictions and the urgent problems being addressed. Consequently, organizational agents reinterpret and make sense of their professional experiences. They build practical illustrations, convincing arguments and counterpoints that revolve around the often very specific measurements that illuminate the details of their inter-functional activities (see Weick 1995). Different functional agents explicate their interpretations of the relevant local problems which are raised by the business controller – putting forth for example views about what causal connections exist between operational failures and external factors ”beyond their control”. They recall real, on-the-spot field observations that could explain substandard performance. They jointly re-examine and disagree, for instance about key internal procedures, mutual routines and technical solutions. Conflicting perspectives on operationally critical questions are taken, becoming soon overtly challenged. And tacit knowledge that previously may have been beyond words, or remained the property of a small group of functional experts, becomes shared in this intensive argumentation.

Consequently, non-financial measurement could also be focused into such functional interfaces, which are regarded as particularly significant for the discovery of new insights in inter-functional co-operation. The business controller's deliberate exploitation of the cross-functional tensions which are coupled to non-financial measurement is – alongside the *divisional perform-*

ance paradox and the *provocative* measurement of operational detail – a potential way to stimulate the emergence of tacit knowledge in critical parts of the enterprise. Some reservation, however, is also here necessary. Heavily politicised and strained cross-functional relations can become counterproductive. They can disturb overall organizational performance by creating new co-operative barriers, especially by distracting the effort of local agents towards internal strife. And because strong political purposes are involved, the business controller should not approach the introduced tacit insights at face value. The tacit knowledge emerging in conjunction with non-financial performance measurement inevitably becomes contaminated by locally generated, expertise-related, functional or perhaps outright personal bias.

3 AVENUES OF EMPIRICAL ENQUIRY

Research on how pro-active business controllers can participate in a critical phase of organizational knowledge creation – converting tacit knowledge into explicit knowledge within specific instances of non-financial performance measurement – is still in its early stages. This paper has provided a preliminary discussion. It has suggested three potential scenarios for linking this particular technology at the business controller's disposal with a focused discovery of tacit organizational insights. At present, especially empirical research, and sufficiently intensive research methods, should be welcomed in this important terrain, of growing theoretical and professional significance. Below, some possible avenues of field research are laid out.

Especially, a more critical approach – taking this argument as a starting point, and problematizing the paper's suggestions within the three presented scenarios – should be invited in earnest. It is probable that the proposed expansion of the controller's role beyond a financially-oriented, prudent organizational ″watchdog″ meets considerable obstacles. A learning-oriented business controller faces an increased workload. This may jeopardize his/her capacity to produce reliable scorekeeping information about the organization's financial status and it financial prospects. Organizational agents, including top management, may be unwilling to risk the controller's professional integrity and reliability for more explorative, learning-related tasks. Rigid role-models and deeply rooted expectations of proper professional conduct often persist. And can controllers develop the necessary argumentation skills and situational ″micro-management″ competencies for handling the often conflict-ridden interactions suggested in this paper?

Also, it is questionable whether the active business controller can identify the critical structural units, operational niches and cross-functional interfaces which contain the potentially most valuable tacit insights. At the minimum, the business controller should be familiar with the premises and the guidelines of the organization's competitive strategy. Moreover, it is conceivable that organizational agents, despite the increased tension that non-financial measurement introduces, may be unwilling to share their personal tacit knowledge. To some individuals, explicating tacit knowledge would suggest loosing valuable monopoly-capital (see Nooteboom pp.159–162). And even if expert-agents articulate their tacit understanding, it is not certain that the business controller can share their conceptual systems and professional jargon, being able to grasp the meaning of these verbalizations. It is also uncertain, whether the business controller has the capability and necessary authority to develop further the intriguing tacit knowledge elements which do emerge – moving them ahead in the dynamic process of organizational knowledge creation: ideas may remain mere ideas (see Nonaka et al. 2000a/b, Nonaka 1994). Hence, an interview study of sufficient scope, investigating how controllers, top management and other key expert-groups perceive the suggestions of this paper, in a broad range of contemporary organizations, would be a logical step in elaborating these arguments further. It would set them against prevailing enterprise practices in non-financial performance evaluation. Such a study could narrow down on identifying the industrial and organizational contexts where the paper's learning-oriented argument appears as most feasible. Its yield would greatly benefit further empirical investigations.

The growing literature on the controller's competencies and new roles would draw from a sufficiently intensive case-study – addressing specific management situations where the controller is *de facto* engaged with the tensions of non-financial performance measurement (Lukka & Granlund, 1998, 1997, Järvenpää, 2001, Tuomela & Partanen, 2001, Malmi et al. 2001, Vaivio 2004). Empirical evidence is still needed about how an interacting *ba,* where non-financial measures stand at the nexus, actually works at as a platform where tacit knowledge becomes converted into explicit knowledge. First, how the business controller operates in the context of a divisional performance paradox, perhaps mediating between the perspectives of corporate management and the divisional level, as a ″bridge-builder″ and ″interpreter″, in the negotiation and reconciliation of the financial and non-financial figures, deserves further study. What analytical capabilities, specific management initiatives and particular social skills are needed in order to avoid that the divisional business controller is not falling into the caveat of being identified as a corporate management ″spy″ or ″detective″ in his/her attempts to uncover tacit understandings during a performance paradox (Partanen, 2001)?

Also, light should be cast on how the pro-active business controller mobilizes *provocative* non-financial measures during an organizational shake-up or a major cultural transformation, seeking tacit insights, possibly during a post-merger integration. What are the real-life experiences of business controllers who actually adopt the role of a change-agent in a troubled unit, or act as dynamic and learning-oriented, inquisitive ″envoys″ of the mother company? How is the professional profile of the business controller being organizationally constructed and socially maintained in these controversial instances and spaces which may be close to the conditions of a ″crisis″ (see Granlund, 1994).

Furthermore, an intensive, ″real-time″ case study that relies heavily on participant observation could provide us more appreciation of how the business controller in fact acts as a learning-oriented ″bridge-builder″ between different functional interests – in the delicate situations where tacit knowledge emerges in the context of a cross-functional debate around non-financial performance measures (Partanen 2001). We hold an insufficient understanding about the business controller's competencies in stimulating argumentation, but also in retaining control of the contradictions and ″soft dialectic″ within this interactive space (Nonaka & Toyama, 2005, p. 426). Too little is also known about how the business controller's expert profile is being shaped by his/her activities in the scenarios put forth by this paper. Is the active role suggested here compatible with the traditional ″bean counter″ role of the controller, as well as with other ″new″ roles, such as being an internal adviser and consultant (Granlund & Lukka, 1998, 1997). Whether the associated organizational tensions introduce too much ambiguity into the controller's professional standing and credibility is an empirical question that needs to be addressed in coming research efforts.

In summary, this paper has argued that the discovery and externalization of tacit insights is a critical phase of organizational knowledge creation where the business controller could adopt a more dynamic and pro-active role. More specifically, the mobilization of non-financial measurement offers new possibilities for the learning-oriented business controller. These opportunities should not become overlooked if we remain concerned about the professional relevance, competence development and status of controllers in contemporary enterprises. Facing a *divisional performance paradox*, in *provocative* exploration of operations and by being engaged in *cross-functional debate*, the controller can contribute new insights into the process of knowledge creation – avoiding to become marginalized on the organization's learning agenda. The potential of these scenarios, as well as their more problematic aspects, offer a point of anchor for further empirical enquiry. ■

REFERENCES

AMBROSINI, V. and BOWMAN, C. 2001. Tacit knowledge: some suggestions for operationalization. *Journal of Management Studies*, 38 (6), pp. 811–829.

BARIFF, M. and GALBRAITH, J. 1978. Interorganizational power considerations for designing information systems. *Accounting, Organizations and Society*, 3.

BUNGAY, S. and GOOLD, M. 1991. Creating a strategic control system. *Long Range Planning*, 24 (3) pp. 32–39.

BURNS, J. and SCAPENS, R. 2000. Conceptualizing management accounting change: an institutional framework. *Management Accounting Research*, 11 (1), pp. 3–25.

COAD, A. 1999. Some survey evidence on the learning and performance orientations of management accountants. *Management Accounting Research*, 10, pp. 109–135.

CHILD, J. and MCGRATH, R. 2001. Organizations unfettered: Organizational form in an information-intensive economy. *Academy of Management Journal*, December.

CHOO, C. 1998. *The Knowing Organization*. Oxford University Press, Oxford.

DIJKSTERHUIS, M., VAN DEN BOSCH, F. and VOLBERDA, H. 1999. Where do new organizational forms come from? Management logics as a source of coevolution. *Organization Science*, 10 (5), pp. 569–582.

EARL, M. and HOPWOOD, A. 1980. *From management information to information management,* in Lucas et al.: The Information Systems Environment, North Holland.

EARL, M. and SCOTT, I. 1999. What is a chief knowledge officer? *Sloan Management Review*, Winter, pp. 29–38.

EMSLEY, D. 2005. Restructuring the management accounting function: A note on the effect of role involvement on innovativeness. *Management Accounting Research*, 16, pp. 157–177.

EZZAMEL, M. 1994. Organizational change and accounting: understanding the budgeting system in its organizational context. *Organization Studies*, 15, pp. 213–240.

EZZAMEL, M. 1992. *Business Unit & Divisional Performance Measurement*. Academic Press, London.

FRIEDMAN, A. and LYNE, S. 2001. The beancounter stereotype: towards a general model of stereotype generation. *Critical Perspectives on Accounting*, 12, pp. 423–451.

GALUNIC, D. and EISENHART, K. 2001. Architectural innovation and modular corporate forms. *Academy of Management Journal*, 44 (6), pp. 1229–1249.

GRANLUND, M. and LUKKA, K. 1998. Towards increasing business orientation: Finnish management accountants in a changing cultural context. *Management Accounting Research*, 9, pp. 185–211.

GRANLUND, M. and LUKKA, K. 1997. From bean counters to change-agents: the Finnish Management Accounting Culture in Transition. *Liiketaloudellinen Aikakauskirja* (The Finnish Journal of Business Economics), 3, pp. 213–255.

GRANLUND, M. 1994. *The role of management accounting in corporate crises: theoretical considerations and case-study evidence of the meaning, influence, and morality of management accounting and corporate crises*. Publications of the Turku School of Economics, series D-5.

HAYES, R. and ABERNATHY, W. 1980. Managing our way to economic decline. *Harvard Business Review*, July/August, pp. 67–77.

HAYES, R. and UPTON, D. 1998. Operations-based strategy. *California Management Review*, 40 (4), pp. 8–25.

HEDBERG, B. and JÖNSSON, S. 1978. Designing semi-confusing information systems for organizations in changing environments. *Accounting, Organizations and Society*, 3 (1), pp. 47–64.

ITTNER, C. and LARCKER, D. 2003. Coming up short on nonfinancial performance measurement. *Harvard Business Review*, Nov., pp. 88–95.

JÄRVENPÄÄ, M. 2001. Connecting management accountants' changing roles, competencies and personalities into the wider managerial discussion – a longitudinal case evidence from the modern business environment. *Liiketaloudellinen Aikakauskirja* (The Finnish Journal of Business Economics), 4, pp. 431–458.

JÖNSSON, S. 1996. *Accounting for improvement*. Pergamon, King's Lynn, U.K.

JÖNSSON, S. 1992. Accounting for improvement: action research on local management support. *Accounting, Management and Information Technology*, 2 (2), pp. 99–115.

JÖNSSON, S. and SOLLI, R. 1993. 'Accounting talk' in a caring setting. *Management Accounting Research*, 4, pp. 301–320.

JÖNSSON, S. and GRÖNLUND, A. 1988. Life with a sub-contractor: new technology and management accounting. *Accounting, Organizations and Society*, 13 (5), pp.512–532.

KAPLAN, R. and NORTON, D. 1996. *The Balanced Scorecard*. Harvard Business School Press, U.S.

KAPLAN, R. and NORTON, D. 1992. The Balanced Scorecard – measures that drive performance. *Harvard Business Review*, Jan/Feb, pp. 71–79.

KASURINEN, T. 2002. Exploring management accounting change: the case of balanced scorecard implementation. *Management Accounting Research*, 13, pp. 323–343.

KLEIN, D. 1998. The strategic management of intellectual capital, in Klein, D. (ed.) *The Strategic Management of Intellectual Capital*, Butterworth-Heinemann, Boston MA. pp.1–10.

LUBIT, R. 2001. Tacit Knowledge and Knowledge Management: The Keys to Sustainable Competitive Advantage. *Organizational Dynamics*, 29 (4), pp. 164–178.

MAJOR, M. and HOPPER, T. 2005. Managers divided: implementing ABC in a Portuguese telecommunications company. *Management Accounting Research*, 16, pp. 205–229.

MALMI, T., SEPPÄLÄ, T. and RANTANEN, M. 2001. The practice of management accounting in Finland – a change? *Liiketaloudellinen Aikakauskirja* (The Finnish Journal of Business Economics), 4, pp. 480–501.

MARKUS, M. and PFEFFER, J. 1983. Power and the design and implementation of accounting and control systems. *Accounting, Organizations and Society*, 8, pp. 205–218.

MCNAMARA, C., BAXTER, J. and CHUA, WAI FONG. 2004. Making and managing organizational knowledge(s). *Management Accounting Research*, 15, pp. 53–76.

MERCHANT, K. 1990. The effects of financial control systems on data manipulation and management myopia. *Accounting, Organizations and Society*, 15 (4), pp. 297–313.

MILLER, P. 1994. *Accounting and objectivity: the invention of calculating selves and calculable spaces*, in Rethinking Objectivity, ed. by Allan Megill, pp. 239–264. Duke University Press, London.

MILLER, P. and O'LEARY, T. 1994. Accounting, "economic citizenship" and the spatial reordering of manufacture. *Accounting, Organizations and Society*, 19, pp. 15–43.

MINTZBERG, H. 1990. The design school: reconsidering the basic premises of strategic management. *Strategic Management Journal*, 11, pp.171–195.

NONAKA, I. and TOYAMA, R. 2005. The theory of the knowledge-creating firm: subjectivity, objectivity and synthesis. *Industrial and Corporate Change*, 14 (3), pp. 419–436.

NONAKA, I., TOYAMA, R. and NAGATA, A. 2000a. A firm as a knowledge-creating entity: a new perspective on the theory of the firm. *Industrial and Corporate Change*, 9(1), March, pp. 1–20.

NONAKA, I., TOYAMA, R. and KONNO, N. 2000b. SECI, *Ba* and Leadership: a Unified Model of Dynamic Knowledge Creation. *Long Range Planning*, 33, pp. 5–34.

NONAKA, I. and KONNO, N. 1998. The Concept of "Ba": Building a foundation for knowledge creation. California Management Review, 40 (3), pp. 40–54.

NONAKA, I. and TAKEUCHI, H. 1995. *The knowledge creating firm – how Japanese companies create dynamics of innovation*. Oxford University Press.

NONAKA, I. 1994. A dynamic theory of organizational knowledge creation. *Organization studies*, 5 (1), pp. 4–37.

NOOTEBOOM, B. 2001. *Learning and innovation in organizations and economies*. Oxford University Press, Oxford U.K.

PARKER, L. 1979. Divisional performance measurement: beyond an exclusive profit test. *Accounting and Business Research*, 36, pp. 309–319.

PARTANEN, V. 2001. *Muuttuva johdon laskentatoimi ja organisatorinen oppiminen* (The Changing Management Accounting and Organisational Learning). Publications of the Turku School of Economics, Series A-6.

PIERCE, B. and O'DEA, T. 2003. Management accounting information and the needs of managers: perceptions of managers and accountants compared. *The British Accounting Review*, 35, pp. 257–290.

POLANYI, M. 1966. *The Tacit Dimension*. Routledge, London U.K.

POLANYI, M. 1962. *Personal knowledge*. Routledge, London U.K.

Prahalad, C. and Hamel, G. 1990. The core competence of the corporation. *Harvard Business Review,* May/June, pp.79–83.

REGNÉR, P. 2003. Strategy creation in the periphery: inductive versus deductive strategy making. *Journal of Management Studies*, 40 (1), pp. 57–82.

ROCKART, J. 1982. The changing role of the information systems executive: a critical success factors perspective. *Sloan Management Review*, Fall, pp. 11–18.

SCAPENS, R. and ROBERTS, J. 1993. Accounting and control: a case study of resistance to accounting change. *Management Accounting Research*, 4, pp. 1–32.

SPENDER, J.-C. 1996. Organizational knowledge, learning and memory: three concepts in search of theory. *Journal of Organizational Change Management*, 9 (1), pp. 63–78.

SPENDER, J.-C. and GRANT, R. 1996. Knowledge and the firm: overview. *Strategic Management Journal*, Winter Special Issue, pp. 5–9.

TUOMELA, T.-S. and PARTANEN, V. 2001. In search of strategic contribution and operative effectiveness: developing competencies within the finance function. *Liiketaloudellinen Aikakauskirja* (The Finnish Journal of Business Economics), 4, pp. 502–538.

VAIVIO, J. 2006a. The Accounting of ″The Meeting″: Examining Calculability within a ″Fluid″ Local Space. *Accounting, Organizations and Society*, in press.

VAIVIO, J. 2006b. Counting Big: Re-examining the Concept of the Bean Counter Controller. *Liiketaloudellinen Aikakauskirja* (The Finnish Journal of Business Economics), 1, pp. 49–74.

VAIVIO, J. 2005. ″Strategic″ non-financial measurement in an organizational context: a critique, in *Accounting in Scandinavia – The Northern Lights*, ed. by Sten Jönsson & Jan Mouritsen. Liber & Copenhagen Business School Press.

VAIVIO, J. 2004 Mobilizing Local Knowledge with ″Provocative″ Non-Financial Measures. *The European Accounting Review,* 13 (1), pp. 39–71.

VAIVIO, J. 1999a. Examining ″The Quantified Customer″. *Accounting, Organizations and Society*, 24, pp. 689–715.

VAIVIO, J. 1999b. Exploring a ′non-financial′ management accounting change. *Management Accounting Research*, 10, pp. 409–437.

VAIVIO, J. 1995. *The emergence of non-financial management accounting measures: a case study*. Publications of the Helsinki School of Economics, Series B-158.

WEICK, K. 1995. *Sensemaking in organizations*. Sage Publications, CA. U.S.