

# Learn to Measure to Learn!

## ***Opening Key Note Address IC Congress Helsinki 2 Sept 2004***

*by Karl-Erik Sveiby and Charles Armstrong*

A few weeks ago I got a phone call from my friend Charles Armstrong. He was not happy. Charles is the CEO of a family enterprise, a manufacturer of pumps based in Toronto, Canada with subsidiaries in the USA and UK.

He is a practitioner and also one of the best thinkers I have the privilege to know in the field of IC/KM and he has contributed a lot to my own thinking. Charles has been at the forefront of the IC/KM revolution since its inception and in many ways he has allowed his company to be a “laboratory” for many of the ideas that I and others in the field have contributed over the years.

**“I started using the Balanced Scorecard around 1991-92”, he said, “and I abandoned it a few years later, because it didn’t work. I have implemented probably five-ten different models over the years since and I am not happy with any of them. People find them of less value than the effort to maintain them. Certainly, they have all led to heavy complexity even though they may start as a simple concept. Typically, measurement leads to a culture of reporting where the meaning making and impulse to act are sadly lacking. What is the latest? Do you know any good models?”**

“Well, I said, I have listed 28 models on my website for starters! And we do have some very interesting papers being presented on the IC congress in September... What are you looking for?”

**Charles said, “The trouble with all the models I have seen and tested is that they are not dynamic; they may mirror the business at one point in time, but a few moments later they no longer do. The model makers claim that the indicators must be based on strategy, but the indicators designed on the basis of the theories are not good enough to actually fulfil this requirement.”**

“OK I said: Let me tell the bad news first! The main problem with **all** measurement systems is that **it is not possible to measure social phenomena with anything close to scientific accuracy**. We do not even have to evoke Heisenberg’s uncertainty principle<sup>i</sup> or Gödel’s incompleteness theorem<sup>ii</sup>. It is sufficient to state the simple fact that all systems, including traditional accounting, have to rely on proxies, such as euros, estimates, and indicators that are far removed from the actual event or action that caused the phenomenon. All social measurement systems are very fragile and open to manipulation and there is **very little we can do about it!**

I have seen this too many times; The failure to acknowledge this fundamental problem creates a basic inconsistency between managers’ expectations, the promises made by the method developers and what the systems can actually achieve. Then, when the measurement system gives inconsistent or incomplete results, we blame the system rather than acknowledging the fundamental issues.

Another trouble is that our measurement instruments are blunt to say the least. Even the much-used statistics relies on assumptions that when we draw our conclusions. At this conference many of the Papers rely on statistical correlations, which we as researchers know are valid only at the moment the data were collected. Correlations tend to change over time. By the time the paper is written and by the time the managers get to act upon them it may already be too late. The conclusions we draw can only be tentative and are always open to reinterpretation.

**Charles agreed: “We perform customer service metrics by monitoring the ‘time to respond’ and the length of time to complete a response based upon an assumption that this enhances the customer relationship. However, we may miss the fact the customer may be trying to learn something in the call and may be put off by the speed of the response. The quality of a customer interaction may go totally unnoticed.**

I said: We seem to agree on the bad news. Is there any good news? Yes, the fundamental issue does not change the fact that mathematics and statistics are wonderful languages, which enrich the dialogues in our organisations. The measurement languages add an extra dimension of explanations over and above

mere words. Through the measurement languages we can “talk” about matters that would otherwise remain hidden.

But, measurement adds value only if the limitations are taken into account. We must not delude ourselves and our audiences with unrealistic promises and we must not use measurements for tasks that are beyond the limitations. If we do we will be punished.

How can a measurement system be designed that takes the limitations into consideration and yet adds value?

### ***We need to agree on the purpose***

First, rarely is the question asked, why measure intangibles? The answer is not self-evident. Intangibles are difficult and expensive to measure and the results are so uncertain that the reason had better be a good one!

Therefore, the first question for any one embarking on a measurement initiative must be: **What is the purpose of measuring in your company?**

I said: “Charles, why do you want to measure intangibles at all?”

**Charles: Why? For me measurement’s purpose is to elevate the quality of engagement of people in the organization around the strategies of the business. It is about articulating the direction we are going and some of the pathways to getting there, but it needs to be about the quality of how we are getting there, the ‘conductivity’.**

### ***Report performance to internal management***

OK, it sounds as if your motive is the most common for measuring. It is to improve performance and report **to management internally**. We can call it navigation or follow up. We can also call it the **management control purpose**. It is so common and so entrenched that it is often not even stated explicitly. After all: “What gets measured gets done”, right?

Performance measurement has its own discourse independent of the IC discourse. The performance measurement experts are usually found in the accounting department. And they measure the performance of others – not their own. Trouble is

that most people don't like being measured upon. I don't! Do you? So my response is probably to stop sharing ideas and knowledge, because it will increase the chance that my competitors gain the bonus instead of me.

And if the system does not make me look good I had better make sure I do look good, don't I? And there are lots of ways to do this since most indicators involve judgment to a degree.

Then add an individual reward system tied to the measurement system and we have an explosive concoction. The temptation to manipulate the system to one's own benefit becomes overwhelming!

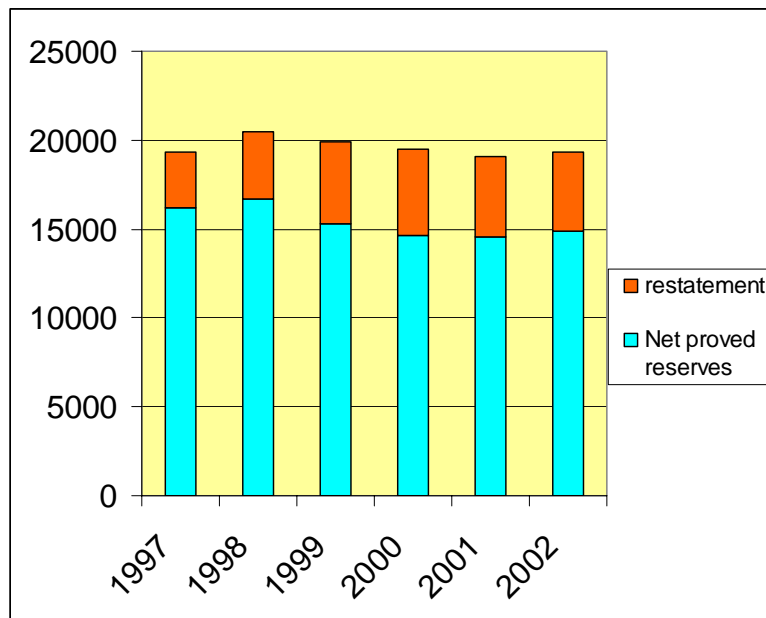


Figure 1. Shell's oil & gas reserves measured in oil equivalents.

Let me only remind you of the latest measurement scandal as an example. This is a picture of Shell's oil and gas reserves. The trouble was that Shell had made the reserves a target with a bonus tied to it for the managers who succeeded increasing them...

In January 2004 a deeply embarrassed Shell board had to confess that they had overstated the reserves by 4,4 billion oil equivalents, or 23% of the total. The board also fired three senior executives, who – notably – had committed no criminal

offence! Oil and gas reserves cannot be measured exactly. Estimation of reserves involves subjective judgment, just as most of the indicators we use in measuring IC.

We are talking about one of the world's most respected companies falling into this trap! It happened within the framework of the traditional accounting system that is heavily regulated, with governing bodies and audit and with heavy penalties imposed on offenders.

The measurement of intangibles has nothing comparable to the accounting field. There are no accepted standards, there is no governing body, there are no penalties and auditors generally refrain from auditing the intangibles reports unless they intangibles are capitalized on the balance sheet.

When does a legitimate need to know where you are heading become a destructive command-control system manipulated for individual benefit? If this could go on in Shell, one of the world's most admired corporations, consistently rated near the top in terms of management capabilities and as a good corporate citizen, what do you imagine might going on in your own company? Is your company immune to abuse?

### ***Report to external stakeholders***

I said: OK, what do you say about the second most common purpose for measuring intangibles? **Stakeholder reporting externally.** The legitimate purpose is to report the status and the trends of the company's actions to all its stakeholders. The external stakeholder reporting is what initially set off the IC measurement boom. When I started writing about measuring intangibles (this was before Tom Stewart changed the name of the discourse to Intellectual Capital) in Sweden in the late 1980's I was the publisher of a financial journal and my interest was in getting the publicly listed companies that we were analysing to report more useful numbers. The focus on external reporting to stakeholders has continued in the 1990's with Skandia as the flagship example. It is currently the fastest growing segment in the field of measurement for intangibles.

However, when does the legitimate purpose of stakeholder reporting turn into a pure PR exercise – reporting only to look good in the eyes of the shareholders or other lobby groups? Why is there a surge in triple-bottom line reporting? Why are

the oil and gas companies pioneers in reporting their environmental impact? We need not suspect more sinister 'Enron' motives, just because the purpose is PR, but we, as readers, must be prepared to ask the **why**, when we judge the validity of the numbers reported.

I do not know the real reasons of the companies that have been the pioneers in reporting intangibles externally. However, we can observe that the PR effect is real at least in terms of the short-term influence on share prices and to date the PR-effect is perhaps the most important gain for many of the IC pioneers.

Charles said: **“I think the external reporting motivation is more than PR and more than assurance. I believe it is an attempt to bring to a conscious level and highlight the necessity to engage the organization in things that are strategic in the organization. Reporting on these things can identify new areas of risk as the traditional definition and measurement of risk become too narrow and incomplete.**

### ***Measure for Learning!***

I said: You sound like you are at least partly thinking in terms of the third, virtually unknown purpose; **Learning!** So entrenched are the traditional measuring paradigms that executives and researchers have not even started to explore the most interesting reason for measuring intangibles; the **learning motive**. Measuring can be used to **uncover costs** or to **explore value creation opportunities** otherwise hidden in the traditional accounts. What does the trend of staff turnover tell us? What is the value of the learning that takes place when staff interact with customers? What is hidden behind the fact that the innovation rate is going down? What is the value creation opportunity lost in not spreading best practices? There is huge potential for value creation in finding the answers to these questions.

There are promises of long-term benefits in the learning motive.

**First;** the learning purpose offers a good way around the manipulation issue. If the purpose is learning, not control nor reward, the employees and managers can relax.

**Second,** a learning purpose allows more creativity in the design of metrics, a more process-oriented bottom-up approach and less of top-down commands.

**Charles said: “I agree; Learning builds structural capital. Staff turnover may tell you what your hiring tempo needs to be, but it will not tell you about the reason for high staff turnover. To deal with that problem, a survey of leavers is paramount to correcting what might be a problem. Learning, if properly directed, should alter behaviours in an organization.**

I said: 'Alter behaviours'. Doesn't this mean control? No, if the measurement system purpose is implemented with a learning purpose, people will change their own behaviours as a consequence of learning. I'll finish with six principles for proper implementation.

**First**; the process of developing the metrics is crucial. The metrics in a learning model are produced bottom-up, with heavy involvement from all relevant groups. No trumpets from the accountants' ivory tower!

**Secondly**, the indicators are used by the same people who produce them and they use them to improve their own processes, not somebody else's. They also report the raw data to the accountants for inclusion in the reports.

**Third**, the indicators are openly published for all who want to take part. Confidentiality is anathema to learning. You cannot learn anything if the numbers are confidential.

**Fourth**; if the indicators suggest a difference between say, a high-performing and a low-performing unit, the units in question are required to meet and the difference becomes **the starting point of a dialogue to discover hidden value**; are we measuring the same thing? What is it that we can do better? This is a crucial step; the difference in performance becomes an invitation to learning, it becomes a fundament from where one starts a common search for hidden value, it does not become an opportunity to punish or reward.

**Charles said. “Yes, this is critical. If something is wrong or not tracking as it should then a natural reaction is to rise to frustration. Frustration is only overturned by learning. So this is inherent in a learning purpose. However, from a leadership perspective it is difficult and requires an evolved leadership**

**culture. On a personal note, I have found it difficult to be in this learning leadership mode all the time...sometimes directions and action just seem more appropriate! However, a learning purpose around metrics must be maintained. Reverting to command and control leadership badly undermines the potential for dialogues you speak of. This is why transition is so very difficult.”**

**Fifth**. Make sure Double-loop learning occurs as part of the process; the dialogue is not complete until it also yields ideas on how to improve the indicator(s).

**Sixth**; the indicators are never the basis of a reward system. If rewards are to be distributed at all they should be group-based and allocated to those, who make the highest value improvement, i.e. possibly even to the previous low-performing unit!

**Charles: “I agree! This will reduce the likelihood of manipulation of the metrics. Frankly, I have yet to see a compensation system that works at producing the right kind of dialogue in organizations, however I continue to experiment.”**

### ***Conclusion***

I believe the purpose of the measuring exercise is crucial. If we don't clarify it first-hand we will never escape from the rut, but will continue to use measuring for control purposes. The art of measuring intangibles is too imprecise to be used for control purposes – let us instead regard the measuring process as an **invitation to a learning dialogue** in our endless quest to understand the wonderful world around us.

Measurement for learning requires an evolved leadership, a leadership that allows people yes, demands of people **knowledge of the whole**.

**Is your organisation up to the challenge?**

*“We make doors and windows for a room.  
But it is the spaces that make the room liveable.  
While the tangible has advantages,  
it is the intangible that makes it useful.”*

Lao Tzu ~600 BC.

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<sup>i</sup> The more precisely the position is determined, the less precisely the momentum is known in this instant, and vice versa. --Heisenberg, uncertainty paper, 1927. Heisenberg's analysis showed that uncertainties, or imprecisions, always turned up if one tried to measure the position and the momentum of a particle at the same time. (Similar uncertainties occurred when measuring the energy and the time variables of the particle simultaneously.) These uncertainties or imprecisions in the measurements were not the fault of the experimenter, said Heisenberg, they were inherent in quantum mechanics. Heisenberg presented his discovery and its consequences in a 14-page letter to Pauli in February 1927. The letter evolved into a published paper in which Heisenberg presented to the world for the first time what became known as the uncertainty principle.

<sup>ii</sup> Gödel's Second Incompleteness Theorem. In any consistent axiomatizable theory (axiomatizable means the axioms can be computably generated) which can encode sequences of numbers (and thus the syntactic notions of "formula", "sentence", "proof") the consistency of the system is not provable in the system.

In 1931, the Czech-born mathematician Kurt Gödel demonstrated that within any given branch of mathematics, there would always be some propositions that couldn't be proven either true or false using the rules and axioms ... of that mathematical branch itself. You might be able to prove every conceivable statement about numbers within a system by going *outside* the system in order to come up with new rules and axioms, but by doing so you'll only create a larger system with its own unprovable statements. The implication is that *all* logical systems of any complexity are, by definition, incomplete; each of them contains, at any given time, more true statements than it can possibly prove according to its own defining set of rules.

Gödel's Theorem has been used to argue that a computer can never be as smart as a human being because the extent of its knowledge is limited by a fixed set of axioms, whereas people can discover unexpected truths ... It plays a part in modern linguistic theories, which emphasize the power of language to come up with new ways to express ideas. And it has been taken to imply that you'll never entirely understand yourself, since your mind, like any other closed system, can only be sure of what it knows about itself by relying on what it knows about itself.

<http://home.ddc.net/ygg/etext/godel/godel3.htm>