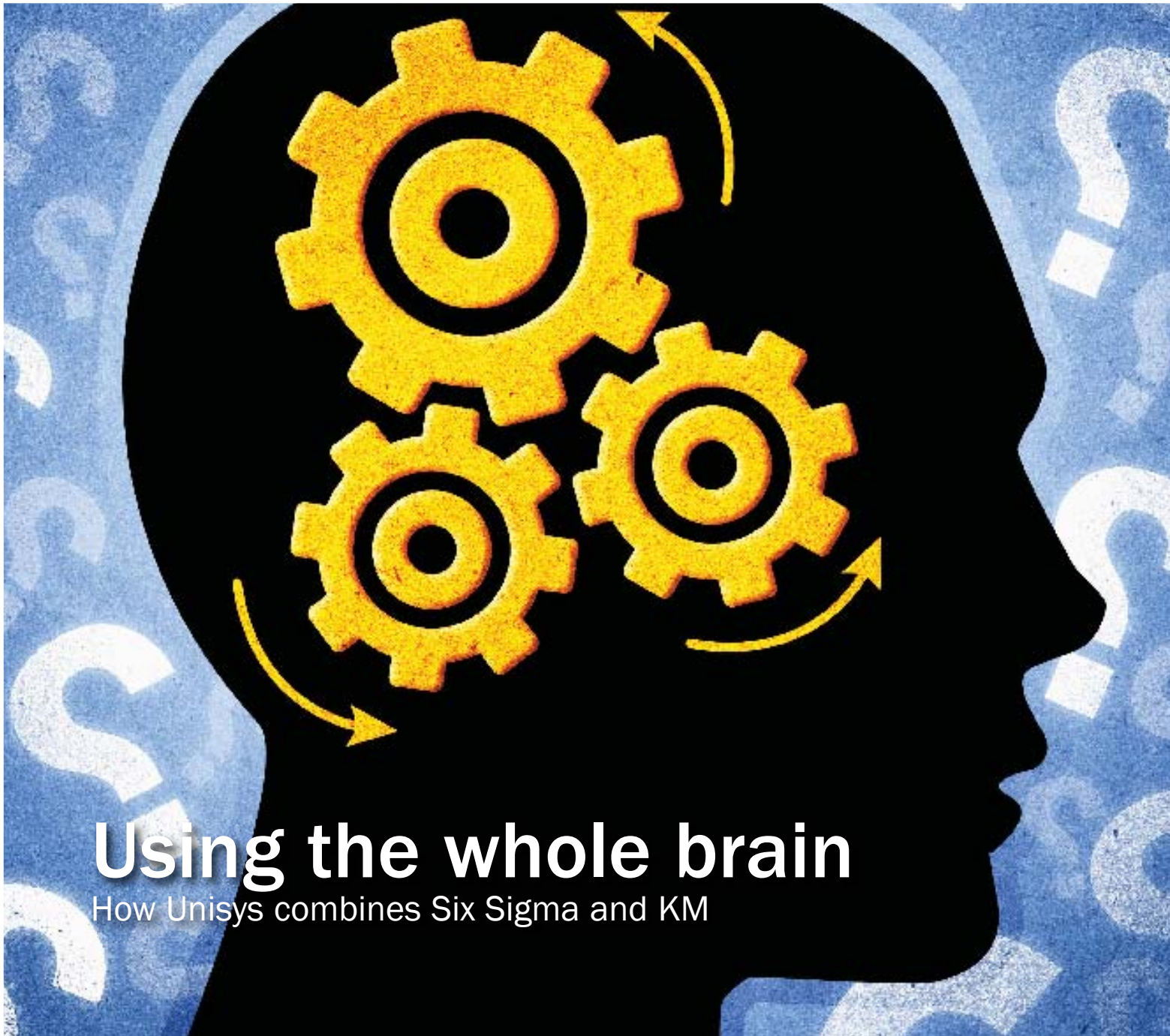


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# Using the whole brain

At Unisys, KM and Six Sigma get along as smooth as SiLK.

By Jerry Ash

**N**o two management approaches could be more different than Six Sigma Lean (SSL) and Knowledge Management (KM). SSL's centre of gravity is in the industrial economy – machines, production and engineering – while KM is the knowledge economy (you know the scenario).

But the differences are more fundamental than that. They are, well, neurological. SSL is mainly a 'left brain' point of view. That is to say, it is rational, logical, numerical – quite un-KM-like. Knowledge management is more 'right brain' – visionary, complex, social and so on.

Whenever the subjects of SSL and KM arises, the thinking is usually dominated by a left- or right-brain thinker and the only thing both sides agree on is that 'oil and water don't mix'. But once in a while, a timid

voice suggests that the two approaches can effectively work and be blended together, even though they are quite different. Usually no one pays much attention to that voice...

Meet Rob Taylor, he's a Six Sigma 'black belt' (see page 18, 'About Six Sigma') and architect of a management programme at Unisys that blends Six Sigma, Toyota-style 'lean' manufacturing principles and KM into a single working partnership.

"I can see that for people who have a strong 'brain dominance' one way or the other (and most people do), it is going to be very hard to accommodate the other point of view," says Taylor. "A lot of SSL people are very left brain and some of them simply boggle at KM ideas."

At the same time, the majority of people attracted to KM are normally not the kind to do statistical analysis.

Of course, a Six Sigma black belt is likely to be left brained. But Taylor does

not champion one approach over the other – he favours an integration of the two. "It just makes sense to me that we should use the whole brain," Taylor explains.

## 'Divide' not so wide

If you nodded your head in agreement with the oil and water comment, there's much you don't know.

SSL has already crossed into the services sector and has been modified or reinterpreted by practitioners to fit the different demands of a non-industrial environment. SSL uses considerable subject-matter expert input and such 'soft' techniques as 'the wisdom of crowds' (ask enough people and the majority opinion is usually right), 'voice of the customer', root-cause analysis and so on. There's actually quite a dependence on knowledge in SSL, Taylor says, "especially in applications in the service and professional sectors".





There's still an emphasis on 'control' in the Six Sigma 'DMAIC' methodology – DMAIC does, after all, stand for 'define, measure, analyse, improve, control' – but practitioners often differ on its use. Many remain adamant about the importance of statistics. But KM isn't as 'loose' as it's often thought to be either.

"A lot of what's carried out in the name of KM is pretty industrial, isn't it? There are many KM case studies that are really about using very explicit and measurable improvements to business processes. That's the kind of 'transformational KM' I'm most interested in, which is about adapting to the changed environment of the knowledge economy," says Taylor.

#### **Transformational KM and SSL**

The first hurdle is to help SSL and KM supporters to recognise the respective strengths of each

discipline. SSL and KM aren't exclusively left or right brain. In fact, Taylor believes some transformational KM strategies outperform SSL goals, such as process control.

"Sorry, my SSL friends, but that's just the way it is. However, when we mature and evolve we include and transcend: include and keep what we know, but transcend it with our new understandings. And let's face it, most organisations never really mastered the leading-edge industrial era approaches, such as business process management. So we need to learn and include SSL wisdom while at the same time adapting to the knowledge economy."

Taylor's message to his 'KM friends' is equally blunt: "Let's also be honest. We've been practicing KM in the relative stone age of our field. KM will develop and evolve a long way ahead of where we're dabbling today. A KM that is really not much more than an industrial model add-on just won't do."

A study by the American Productivity and Quality Center (APQC) fortifies Taylor's position. Asking the typical industrial era question – what is the value of using SSL and KM together? – the study concludes that such a project could squeeze out up to ten times the benefits. Unfortunately, the APQC research didn't divulge its methodology, but it hinted strongly that it resulted from the replication of benefits (such as greater re-use). And Taylor is starting to see SSL people add a "T" to DMAIC – that "T" stands for 'transfer'.

Taylor regards transfer as a KM technique. "Best practice transfer is okay, but the stronger idea is a programme, practice, community of practice, or knowledge domain. What I mean is that the transfer can be quite transactional and mechanistic (which is what the Six Sigma people mean with the added "T"), or it can be more integrated, socialised and embedded."

KM techniques and the emerging learning culture involve community-based transfer. SSL people need to adopt KM techniques encouraged by communities of practice, such as lessons learnt, passing the baton (a la Victor Newman) and after-action reviews (all industrial age processes that have helpfully transcended to the knowledge age.)

"But SSL people also need to start organising as social groups engaged with the development of knowledge – with innovation and leadership and so on. In practice, I've found these ideas to be second nature in KM circles, yet they are quite challenging for SSL folks. But don't forget how challenging we KM folks find statistical-process control!"

#### **About Unisys**

Unisys is one of the oldest companies still operating in the IT industry. It was created in 1986 as a result of the merger of Burroughs and Sperry, two formidable producers of high-end business computers with a joint heritage stretching back to the dawn of computing.

With the 'open systems' revolution of the 1990s (involving first Unix client/server computing, then Microsoft Windows) the merger was well-timed – the proprietary market that Burroughs and Sperry operated in has all but disappeared today.

However, Unisys' management recognised this fact early on and executed a sharp turn-around. First, by producing machines that ran Unix and, later, Windows instead of proprietary operating systems. Then, by pushing aggressively into computer services while many of its more illustrious competitors, such as Sun Microsystems, continued to emphasise the primacy of hardware.

## About Six Sigma

Six Sigma was originally developed at US technology company Motorola in 1986 by Robert Calvin, although critics of the methodology suggest that it is heavily based on work developed since the 1920s by a variety of other management theorists.

The original purpose of the methodology was to provide a management framework for minimising defects in production processes, but its scope has been widened as it has become more popular.

Six Sigma identifies a number of key roles for successful implementation. Executive leadership is expected from the very top down, including the CEO and other key top management team members. They are responsible for setting up a vision for Six Sigma implementation and empowering people in the other roles with the freedom and resources to explore new ideas for breakthrough improvements. Those roles include:

- Champions, who are responsible for the Six Sigma implementation across the organisation. They are drawn from upper management. Champions also act as mentor to 'black belts';
- Master black belts, identified by champions, act as in-house expert-coaches for the organisation on Six Sigma. They devote 100 per cent of their time to Six Sigma. They assist champions and guide black belts and green belts. Apart from the usual rigor of statistics, their time is spent on ensuring integrated deployment of Six Sigma across various functions and departments;
- Experts are used primarily in the aerospace and defense sectors. Experts work across corporate boundaries, improving services, processes and products for their suppliers and customers. Defence contractor Raytheon was one of the first companies to introduce experts, where they work not only across multiple sites, but also across business divisions to spread lessons learnt throughout the company;
- Black belts operate under master black belts to apply Six Sigma methodology to specific projects. They devote 100 per cent of their time to Six Sigma. They primarily focus on Six Sigma project execution, whereas champions and master black belts focus on identifying projects/functions for Six Sigma;
- Green belts are the employees who take up Six Sigma implementation alongside their other job responsibilities. They operate under the guidance of black belts and support them in achieving the overall results.

KM and SSL, Taylor concludes, can complement each other.

### SSL is to KM as root causes are to solutions

A second big issue and area of alignment is to understand that whereas SSL is a generic problem-solving approach, KM is a set of solutions. "Most of the stuff you have ever read under the heading of KM is about solutions that, in SSL terms, belong in the 'improve' phase of DMAIC," says Taylor.

At that point, SSL has traced the root cause of the problem and now waits for someone to improve it. SSL is not about solutions, but KM is. KM may not be a methodology for doing things but it does propose solutions, such as communities of practice.

With this view, SSL and KM are complementary – one, a method that has no solutions and the other, a set of solutions that have no method.

The third big challenge, according to Taylor, is for KM communities

and organisations structured around knowledge-era principles to adopt SSL as an empowering approach. It can be used by workgroups and teams – at the lowest level of devolved authority – in the self-control of their own domains, processes and knowledge, he believes.

"Under a more devolved model, I can see the potential for the people who perform the task themselves to learn and practice SSL involving processes they control," says Taylor. Concepts like this are not wholly alien to SSL, but the connection with new organisational forms for the knowledge era is new.

To summarise, there are three main areas for unification:

1. KM as an organising principle for SSL;
2. KM as a set of solutions for SSL, which in turn provides a KM methodology framework;
3. SSL as a tool for empowering communities and teams in the new organisational structures of the knowledge era.

In the long term, Taylor looks to transformational KM (TKM) as the leading edge, but in the immediate term he has invented his own SiLK concept – Sigma | Lean | Knowledge.

"SiLK is somewhat trailing-edge," says Taylor. But it is something still needed as part of a long transition phase if the best of the passing era and the best we know about the coming one are to be included. SiLK isn't a theory at Unisys any more – it is practice. The process of combining Six Sigma, Lean and KM has been underway at Unisys for the past 18 months.

The 'Lean' element of SSL represents the blend of Six Sigma, which seeks to reduce defects and variation in process performance, with the famous Toyota production system that aims for perfection without waste. SiLK represents a further blend of SSL with knowledge management.

### SiLK in practice at Unisys

Although there were pockets of SSL being practiced at Unisys, the concept was introduced at the highest level by a board member who had experienced it elsewhere. Joseph W. McGrath launched SSL early in 2005, soon after becoming Unisys' CEO and the majority of staff are now basic 'white belts', with several hundred at various practitioner levels – either 'green belts' or 'black belts'. SSL has been deployed in a range of applications including sales, delivery, and manufacturing plant relocation and design. "SSL at Unisys is primarily an initiative to change our own culture and performance," says Taylor, "but we will also deploy it to help with any customer issues we may have and there is already demand for SSL services from customers. Where we use SSL most heavily is in our outsourcing engagements, which is a major business for the company. Process improvements can account for a large slice of the work and potential profit in this area."

Unisys began to roll-out its KM programme about six years ago and Taylor was one of the architects and a member of the core team that drove the initial deployment.

"Essentially our approach is a community model, where our understanding of 'community' is that it is a complete business system focused on improving processes and developing competence. So right away you can see the 'process improvement' link that I see between SSL and KM. We have used some elements of KM to support our SSL deployment already and I have started to bring more in to specific improvement projects... The opportunity now is to develop a fully rounded business-process improvement approach that uses SSL and KM together."

Also in Unisys, he says, "we need to blend in another in-house methodology, called 3D-VE, which is essentially a multi-dimensional business modeling approach and toolset. We are starting to do all of these things together, using 3D-VE modeling alongside SSL analysis

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**Spinning SiLK into the 'Unisys way' has not been all smooth. As with change initiatives in any company, there is always an attention problem because so much change, and so many initiatives and pressures, already face the company and its people.**

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and alongside community deployments. However, this is leading-edge stuff so I need to stress that we – all the practitioners in the different disciplines – still have a lot to learn from each other by working together".

Spinning SiLK into the 'Unisys way' has not been all smooth. As with change initiatives in any company, there is always an attention problem because so much change, and so many initiatives and pressures already face the company and its people. Novelty is another problem. SiLK involves new tools and they are very challenging to what people thought they knew within their traditional 'comfort zones.'

"In particular," Taylor says, "any kind of fact-based management like SSL is a real challenge to the more intuitive or expert-style behaviour that managers believe is expected of them. We have also learned that SSL may not be the best tool for all problems, at least not without modifications."

While SSL can be extended from the very explicit, measurable worlds of manufacturing and engineering into softer areas, such as sales, the approach often needs to be modified to a different context. The incorporation of KM under the SiLK approach is part of that process. "Some practitioners really insist on full data validation," Taylor says. "However, many are also happy to be more relaxed and use SSL tools only to the extent that they really seem to fit into these more complex problem domains."

At Unisys, 'deployment' refers to 'pushing KM' and 'integration' refers to firmly embedding KM into real business processes and initiatives. This integration is where the identified

business need comes first and KM plays a direct supporting role.

Rob Taylor's work on SiLK plays most strongly into this level since it is about using KM and SSL together to address specific business needs. Transformational KM comes after the integration phase. At Unisys, the emphasis has switched from deployment to integration and, thus, KM has become a partner with all the other major programmes including reorganisation of the resource pool, deployment of the new go-to-market strategy and solutions and, of course, the SSL programme.

"We have also been working on a 'knowledge management business architecture', a management model to clearly show the relationship of KM elements to business processes and programmes," say Taylor.

SiLK is pioneering work worth following as it develops over the next few years and, if successful, it will certainly be a significant connector for KM to the real work of business enterprise. ■

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*Join the Association of Knowledgework (AOK), <http://www.kwork.org>, to participate in a two-week e-mail discussion with Unisys' Rob Taylor 15-26 January 2007.*

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