



Nihilent and STRATE From Knowledge Transfer to Transformation

It was the beginning of March 2003. Monica Singer, CEO of STRATE, the organisation that did electronic settlement of all equity trades in South Africa, and Nikhil Datar and N Sundaresan, principal consultants of Nihilent, the solutions integration company that STRATE had employed just over a year earlier, were in an important meeting. They were discussing the way forward for the balanced scorecard driven knowledge management intervention that Nihilent had helped STRATE implement over the past eight months.

STRATE was a knowledge-intensive business, but at the beginning of 2002, most of this knowledge had resided outside of STRATE, with the consultants that had helped to establish the business and the IT systems that were so critical to its functioning. It was a situation that could not continue, and Singer had asked Nihilent to help her to remedy the situation. What she had initially thought would be a simple knowledge transfer exercise had resulted in comprehensive organisational transformation, and she was delighted with the outcome.

Now STRATE was about to merge with the Universal Exchange Corporation (UNEXcor), an organisation that settled bond transactions electronically. UNEXcor did not have anything resembling STRATE's balanced scorecard system in place and Singer, who was to become CEO of the merged company, wanted to roll it out to UNEXcor employees when the companies joined.

Yet the process through which Nihilent had taken STRATE had been demanding: one that had required time and trust from all in the firm. Singer knew that it might be more complicated to institute the system amongst UNEXcor employees and get the necessary buy-in. At the same time, the new systems and processes that had been put in place since Nihilent's intervention would be essential for the new entity to function and grow as it should.

Should she take a big-bang approach and simply tell the UNEXcor employees that this was the way it was going to be? Or should she adopt a more phased approach, trying to earn their trust beforehand? These were the questions she was discussing with Nihilent. There wouldn't be much room for error. It would be very difficult to regain credibility if the first approach failed.

Research Associate, Claire Gordon-Brown, developed and prepared this case under the supervision of Professor Neil Duffy. WBS cases are developed solely as a basis for class discussion. They are not intended to serve as endorsements, sources of primary data or examples of effective or ineffective management.

Copyright ©2003 Graduate School of Business Administration (Wits Business School), University of the Witwatersrand. No part of this publication may be reproduced in any format - electronic, photocopied, or otherwise - without consent from Wits Business School. To request permission, apply to: The Case Centre, Wits Business School, PO Box 98, Wits 2050, South Africa, or e-mail chetty.l@wbs.wits.ac.za.

Conceptual Background

The conceptual framework for what STRATE had implemented lay in three concepts that had been developed in the late 1980s and early 1990s. In response to the information revolution academics and business realised that new approaches to business had to be developed if organisations were to be successful in the future and started formulating theory and practice around the learning organisation, knowledge management and the balanced scorecard.

Learning Organisation

MIT professor and author of *The Fifth Discipline: The Art and Practice of the Learning Organisation*, Peter Senge, described the learning organisation as one “where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together.”¹ He said that learning organisations would have to master the following disciplines:

- systems thinking – a view of the organisation that saw it as bound by “invisible fabrics of interrelated actions, which often take years to fully play out their effects on each other”;
- personal mastery – where each individual in the organisation was committed to his or her own lifelong learning and where the organisation encouraged them in this commitment;
- mental models – the challenging and changing of deeply ingrained assumptions, generalisations and images that influence how people understand the world;
- building shared vision – more than a vision statement; rather the ability to unearth shared pictures of the future so that people would excel and learn not because they were told to, but because they wanted to; and
- team learning – a discipline that started with “dialogue” and was defined as the “capacity of a team to suspend assumptions and enter into a genuine ‘thinking together’”.²

“It is no longer sufficient to have one person learning for the organization...,” he said. “The organizations that will truly excel in the future will be the organizations that discover how to tap people’s commitment and capacity to learn at *all* levels in an organization.”³ Part of STRATE’s mission statement was that it wanted to be a learning organisation. From early on in the company’s history, Singer had instituted information sharing and training sessions on a Friday afternoon, to which all staff were encouraged to come, whether the topic was directly relevant to their jobs or not.

Knowledge Management

IT research organisation, Gartner, defined knowledge management (KM) as a “business process squarely focused on managing and leveraging an enterprise’s knowledge capital”.⁴ It encompassed “business processes that [sought] to combine data and information processing capacity, and the creative and innovative capacity of human beings”.⁵

It was a concept that became popularised in the early 1990s and was based on the realisation that in the post-industrial economy, knowledge was a major source of competitive advantage. Peter

¹ P Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization*, Doubleday Currency, New York, 1990, p 3.

² *Ibid*, pp 6-10.

³ *Ibid*, p4

⁴ K Harris, *Sourcing and Strategic Knowledge Management*, Gartner Research Note, 9 May 2002, p2.

⁵ R Scott, *Human Resource Issues in a Knowledge Management Environment*, A Research Report Submitted to the Faculty of Management, University of the Witwatersrand, Johannesburg, in Partial Fulfilment of the Requirements for the Degree of Masters of Management, February 1999, p3.

Nihilent and STRATE: From Knowledge Transfer to Transformation

Drucker, a professor of social science and management at the Claremont Graduate School in California captured this realisation in an article he wrote in the *Harvard Business Review* in September/October 1992. “In this society,” he wrote, “knowledge is *the* primary resource for individuals and for the economy overall.”⁶

This realisation brought with it the challenge of how to manage an organisation’s intellectual capital effectively and encourage staff to grow. Neil Duffy, a professor at the Wits Business School said that while the drive to learn had to come from individuals themselves, managers had a responsibility to develop the organisational culture and structures that would encourage human growth.⁷

Gartner noted that many early KM programs were founded on the faith that broad knowledge sharing would create a learning organisation. These KM programs had been technology-driven: focussed on things like content management, enterprise portals and collaborative commerce. Yet, although there was some successes in this approach there were also many failures. A survey of information systems (IS) professionals conducted by Gartner in 2001 had shown that less than a quarter of those in the financial, manufacturing, government, IT/telecom and software development sectors believed that their organisations’ knowledge management systems were successful. Only the professional services sector appeared to have succeeded. Here more than more than 70% of respondents regarded their KM programs as successful.⁸

Gartner observed further that organisations were finding it difficult to adopt KM as a business discipline, where KM became the “preferred and habitual process and work style for a majority of employees and [was] applied in the majority of job tasks”.⁹ It said that the failures could often be traced back to one of three shortcomings:

- “lack of focus on people and activities – how knowledge management supports their work and interactions;
- failure to align knowledge management strategies with business strategies; and
- failure to link knowledge processes to business processes.”¹⁰

Joan Magretta, Harvard Business School Publishing editor of *Managing in the New Economy*, noted, “Unlike the traditional factors of production – land, labor and capital – knowledge is a resource locked in the human mind. Creating and sharing knowledge are intangible activities that can be neither supervised nor forced on people. They happen only when people co-operate willingly.”¹¹

“When we attempted to share knowledge, or to suggest that knowledge needed to be shared, we discovered that you get into some cultural issues real fast,” said Tom Brailsford, manager of knowledge leadership at Hallmark at a KM conference in 2000. “We had to launch some major trust-building initiatives... If you want all this transformation to take place, it’s hard work. It takes place not with technology, it takes place with people.”¹²

⁶ P Drucker, ‘The New Society of Organisations’, in *Harvard Business Review*, September/October 1992, p95.

⁷ Interview with Neil Duffy, 4 March 2003.

⁸ F Caldwell, *Long Knowledge Management Hype Cycle has Advantages*, Gartner Research Note, 8 July 2002.

⁹ R Casonato, *Knowledge Management Initiatives in Europe*, Gartner Research Note, 20 December 2002, p2.

¹⁰ F Caldwell, K Harris and D Logan, *Using Knowledge Management to Drive Business*, Gartner Research Note, 7 February 2003.

¹¹ J Magretta (ed), *Managing in the New Economy*, Harvard Business School Publishing, Boston, 1999, pxiii.

¹² *Ibid.*

Balanced Scorecard¹³

Robert Kaplan, a professor of accounting at Harvard Business School, and David Norton, a partner in the Nolan Norton Institute developed the concept of the balanced scorecard in the early 1990s, in response to a study motivated by the belief that existing performance measures, which relied primarily on accounting measures, were becoming obsolete. Financial measures, they said, were lag measures – they were indicators of the success or failure of past performance. In an environment where intangible assets were becoming increasingly important to success, Kaplan and Nolan thought that organisations also needed to measure the drivers of future performance.

Based on the research they conducted, they organised the balanced scorecard around four perspectives: financial, customer, internal business processes, and learning and growth:

- the financial perspective summarised the readily measurable economic consequences of actions already taken. Typical financial objectives related to profitability as measured by operating income and economic value added;
- the customer perspective identified the customer and market segments in which the business would compete and the measures of the business's performance in these segments. Core outcome measures included customer satisfaction, retention, acquisition and profitability, as well as measures of the value propositions that the company would deliver to its customers;
- the internal business process perspective identified the internal processes in which the organisation had to excel, including innovation processes; and
- the learning and growth perspective identified the infrastructure that the organisation had to build to create long-term growth and improvement. Kaplan and Norton noted that organisational learning and growth came from three principle sources: people, systems and organisational procedures. They said that achieving desired performance typically meant that companies had to invest in reskilling employees, enhancing information technology and systems and aligning organisational procedures and routines.

In subsequent years businesses started to use the balanced scorecard as more than just a measurement tool, but also as a means of communicating and aligning themselves to new strategies. Based on their interaction with companies that had implemented the balanced scorecard, Kaplan and Nolan found that the balanced scorecard had helped companies to translate mission and strategy into objectives and measures. They said that it provided a framework to communicate mission and strategy and that the measures should be used to articulate and communicate the strategy of the business, and to help align individual, organisational and cross-departmental initiatives to achieve a common goal.

Background on STRATE

STRATE was the approved central securities depository (CSD) for equities in South Africa. It provided secure electronic settlement of all share transactions that occurred both on and off the Johannesburg Stock Exchange Securities Exchange (JSE) in South Africa.¹⁴ In addition, it had regulatory and supervisory obligations in relation to the banks, who were the main CSD participants (CSDPs) and stored and delivered electronic share records for and on behalf of their clients.¹⁵ Although STRATE had initially started as a project of the JSE, in 2003 it was an independent entity, in which the JSE held a 50% share and the five major banks held the remaining 50%.¹⁶

¹³ All of the information in this section is taken from, R Kaplan and D Norton, *The Balanced Scorecard: Translating Strategy into Action*, Harvard Business School Press, Boston, 1996

¹⁴ www.strate.co.za, dematerialisation link (accessed 5 May 2003).

¹⁵ Interview with Monica Singer, 28 February 2003.

¹⁶ After the UNEXcor merger, the JSE owned 41%, the four big banks (Absa, FirstRand, Nedcor and Standard Bank) owned 58%, and CitiBank owned 1%.

Nihilent and STRATE: From Knowledge Transfer to Transformation

STRATE had been founded in 1996 when it became apparent that the paper-based settlement system that was in use at the time needed to be replaced. The JSE had just introduced the Johannesburg Equity Trading (JET) system, which had seen the demise of the JSE's open cry floor in favour of a screen-based system. The result had been a massive leap in turnover on the JSE (see **Exhibit 1**), and back-office support services were simply unable to cope.¹⁷

In addition, the JSE ranked at the bottom end of ratings of settlement risk¹⁸ among emerging market stock exchanges (see **Exhibit 2**). The JSE wanted to improve this rating as a matter of urgency so that investors would be confident of trading on the JSE in the future. Electronic settlement would reduce settlement and operational risk, increase efficiency and ultimately reduce costs. As a result, international perceptions of the South African stock exchange would improve.

Singer was appointed to head the project in October 1996 with a mandate to implement a settlement system that complied with the G30 recommendations¹⁹ and equalled the best in the world.²⁰ The system would interface with the Broker Deal Accounting (BDA) system (the back office system of the brokers) the systems of the receiving and delivering CSDPs, the transfer secretary and the South African Multiple Options System (SAMOS) – the South African Reserve Bank's real time gross settlement facility. The aim was to achieve true simultaneous, final and irrevocable delivery vs payment (ie: effecting payment for and delivery of shares simultaneously and irrevocably in an electronic environment).

The project took place in three phases. The first involved finding a suitable electronic settlement system. The second involved adapting and developing this system to STRATE's requirements. The third involved converting all existing paper share certificates into electronic records of ownership – a process known as dematerialisation. Once the shares in a particular company had been dematerialised, the trades could then be settled electronically.

Singer and her team looked for a settlement system in South Africa, but by September 1997 they concluded that there was nothing suitable on the local market. They therefore investigated systems used by other stock exchanges around the world and decided that the Swiss SECOM system was the best option. In May 1998, STRATE concluded an agreement to buy the Swiss system for use in the South African market, and it was renamed South African Financial Instruments Real-time Settlement (SAFIRES). STRATE also entered into a contract with the company that had developed the Swiss system to help STRATE to adapt and develop the system for the South African market.²¹

Having found SAFIRES, STRATE then gave itself until March 2001 to configure and test the system before it began dematerialising shares and settling transactions. Although dematerialisation began officially in March 2001, the shares of the relatively illiquid (ie: shares that are not traded often on the JSE) Harmony Gold were transferred to the electronic environment in late 1999. The experience proved to be so positive that a number of players indicated that they would be willing to move onto the system ahead of the official implementation. Thus a few other more illiquid companies were moved onto the system in June 2000 and a further set embarked on the dematerialisation process in October 2000. Highly liquid counters, such as Anglo American and

¹⁷ www.strate.co.za, dematerialisation link, *op cit*.

¹⁸ Settlement risk includes factors such as interest rate and overall cost of failed trades.

¹⁹ A set of guiding principles for stock exchanges worldwide, called the G30 because it was put together by delegates from stock exchanges in 30 countries. One of its principles related to real time settlement of transactions.

²⁰ www.strate.co.za, dematerialisation link, *op cit*.

²¹ www.strate.co.za, milestones link (accessed 5 May 2003).

Nihilent and STRATE: From Knowledge Transfer to Transformation

Dimension Data, were migrated last, in the fourth quarter of 2001. By the end of 2001, every listed equity on the JSE had been migrated to STRATE.²²

It was a highly successful process. STRATE did not miss one deadline and equity trades continued uninterrupted. By the end of 2002, the JSE was ranked fifth (out of 22) on the index of settlement risk in emerging markets – up from 19th (out of 20) in 1996 (See **Exhibit 3**). The value of trades on the JSE had risen from R117 billion in 1996 to R809 billion and the volume had increased from 1,44 million to 3,79 million, reaching a peak of 4,19 million in 2000.²³

Having succeeded in establishing STRATE in South Africa, the board now wanted to see the organisation become profitable. Singer saw a number of ways of accomplishing this: reducing costs within the business, expanding its client base and expanding the range of services it had to offer. STRATE's mission in the short term was to be the regional provider of choice for clearing, settlement and depository services for all financial instruments. Its long-term vision was to be globally pre-eminent and viable as the lowest-priced CSD and to be a provider of choice of infrastructure for a wide range of financial services.²⁴ (See **Exhibit 4** for a copy of STRATE's vision and mission statement.)

Dependence on Consultants

Because success was uncertain during STRATE's early days, Singer employed very few staff members on a permanent basis. In fact, the organisation only started employing people in 1999 (see **Exhibit 5** for a STRATE organogram). It came to rely heavily on outside consultants, especially with regard to technology development and maintenance.²⁵ After implementation of the system in 1999, the consultants STRATE had employed to develop and configure SAFIRES took over the maintenance of the system. As the market started to use the system and changes became necessary, STRATE relied on these consultants to make the changes.²⁶

In addition, with its focus on meeting implementation deadlines, there was little time to invest in staff training. Improving the skills of permanent staff was simply not a priority. This meant that there was a great knowledge and skills gap between the consultants and STRATE's permanent IT staff.

As a result, antagonism developed between the permanent staff and the consultants. The reliance on outsourcing suggested that STRATE did not have faith in its people to grow and this impression was exacerbated by the fact that the most challenging projects were given to consultants.²⁷

At the beginning of 2000, Singer was increasingly concerned about this state of affairs. She realised that STRATE had created a new industry in South Africa, yet the knowledge of this industry resided in the heads of only a few people, and, more to the point, in the heads of people who were not even employees of STRATE. Moreover, Singer was not only concerned about the concentration of knowledge in STRATE's consultants, but also that the organisation relied heavily on her for the knowledge she had. No-one else in the organisation knew what she knew. She and the board were aware that if she "got run over by a bus" – to use her term – STRATE could be in serious trouble.²⁸

²² *The STRATE Story*, internal document provided by Monica Singer, 28 February 2003; www.strate.co.za, milestones link (accessed 5 May 2003).

²³ M Singer, *Presentation on STRATE*, ACSDA V General Assembly, Cancun, Mexico, 6th March 2003.

²⁴ *STRATE Vision and Mission Statement – 2002*, *op cit*.

²⁵ M Singer, *Presentation on STRATE*, *op cit*.

²⁶ Interview with Shah Ebrahim, IT director of STRATE, 28 February 2003.

²⁷ M Singer, *Presentation on STRATE*, *op cit*.

²⁸ Interview with Monica Singer, 21 February 2003.

Nihilent and STRATE: From Knowledge Transfer to Transformation

Moreover, because the IT consultants knew so much more about the SAFIRES system than STRATE did, STRATE had no way of judging whether the work the consultants were doing was justified and whether they were delivering value for money.²⁹

Not only this, but the dependence on consultants was also a huge drain on STRATE's financial resources. The consultants' head office was in India and STRATE had a permanent satellite link to this office. They were paid in dollars and the rand/dollar exchange had weakened dramatically since the contract was first signed. STRATE was making huge losses and the board wanted progress in turning the organisation to a profit. Moreover, after the attacks on the World Trade Centre on 11 September 2001, it became clear that trading volumes on the JSE would drop. In turn, this meant that STRATE's revenue projections were overstated, as STRATE's revenue was based on the number of transactions on the JSE.³⁰

A cost benefit analysis showed the advantages of employing and training permanent staff – projected savings amounting to US\$100 000 a month. It was, noted Singer, a 'no brainer'.³¹ From then on, transferring knowledge from the consultants to STRATE employees became her obsession and she employed a firm of knowledge management consultants to help in this process.

Yet the process proved to be more difficult than anticipated. STRATE had to be careful not to put SAFIRES at risk, and therefore could not reduce the involvement of the consultants until it was satisfied that its staff could cope. At the same time, the knowledge transfer just did not seem to be happening effectively. The consultants would complain to Singer and STRATE's IT director Shah Ebrahim that they were finding it difficult to transfer the knowledge to STRATE employees. STRATE employees would complain that knowledge was being withheld. In the end, Ebrahim simply did not believe that his IT staff were incapable of learning what they needed. He had good people with 10 years' experience on his staff who were performing way below their ability. Something was wrong.³²

Nihilent's Intervention

A solution presented itself in August 2001, when Singer had an informal conversation with LC Singh, with whom she had previously conducted business. Singh was CEO of Nihilent, a firm of management consultants that he had founded in India in 2000. Nihilent focussed, among other things, on knowledge management. Some of the company's major clients were based in Europe and Africa, and South African organisations Nedcor (banking) and Dimension Data (IT), held significant shareholding in Nihilent. Singer told Singh of the problems STRATE was experiencing and Singh said that Nihilent might be able to help with a solution.

Nihilent adopted a systems approach to knowledge management and had developed a framework for 'holistic learning and innovation' called MC³ (see **Exhibit 6**). The acronym stood for Motivation, Calibration, Capability and Capacity:

- 'Motivation' referring to the incentives in an organisation that would encourage or discourage learning;
- 'Calibration' referring to the organisation's strategy and therefore to the context in which learning would take place;

²⁹ Interview with Monica Singer, 21 February 2003.

³⁰ M Singer, *Presentation on STRATE*, *op cit*.

³¹ Interview with Monica Singer, 21 February 2003.

³² Interview with Shah Ebrahim, 28 February 2003.

Nihilent and STRATE: From Knowledge Transfer to Transformation

- ‘Capability’ referring to the tools and processes that should be in place for learning to take place; and
- ‘Capacity’ referring to the ability of an organisation to internalise and institutionalise knowledge.³³

Singer liked the fact that Nihilent adopted a more holistic approach than the KM firm she had been using thus far, and, on her recommendation, the STRATE board agreed to Nihilent’s proposal. Nihilent started working on the project in February 2002.

STRATE recognised the need for improvements across the entire organisation, but decided that Nihilent should begin in the IT division, where the need for change was most urgent. If Nihilent’s approach proved successful in IT, then it would be rolled out to the rest of STRATE. This had the added advantage that it would be easy to quantify the results, in terms of cost savings on consultant fees and this would buttress the case for implementing the new approach in the entire organisation.³⁴

Implementation

Nihilent’s first step involved addressing issues of calibration by putting in place a system of corporate, departmental and individual balanced scorecards (see **Exhibit 7**) to ensure that the activities of the organisation were aligned around common goals. Together with STRATE’s staff and management team, Nihilent examined and helped to reformulate the company’s vision and mission statement. This was then translated into a corporate balanced scorecard, in which responsibilities, timescales and measures for success were articulated. Nihilent and STRATE management then developed rough scorecards for each of the departments within STRATE. Based on these scorecards, the roles and responsibilities necessary to achieve the company’s goals were defined.

Having accomplished this, Nihilent then focussed in on the IT department. A comprehensive scorecard was developed for the department, and Datar then analysed whether responsibilities had been assigned appropriately for these goals to be achieved. As a result, new posts were created where necessary, and roles were redefined to eliminate duplication of effort or make them more appropriate. From there, Nihilent assisted Ebrahim and his staff in developing scorecards for each of the teams and individuals within the department. Each scorecard had the same components, so that the measures could be linked back to the overall corporate scorecard.³⁵

The next step in the process involved identifying the knowledge and skills gaps that needed to be addressed in the department if it was to achieve its goals. To do this, Nihilent made use of two tools: knowledge maps (see **Exhibit 8**) and capabilities assessments. Knowledge maps were role-based. They identified the desired knowledge for each position and mapped this against the actual knowledge of the people who held these positions. The capability assessments focussed on softer skills. They involved in-depth discussions between managers and those who reported to them to identify capability gaps and ways of addressing them. These two processes helped to identify employee skills and capability gaps, and enabled learning agendas to be drawn up for each employee. The learning agenda was then reflected on their individual scorecards and at performance appraisal time, they would be evaluated on the degree to which they had met their learning objectives.³⁶

³³ Interview with Nikhil Datar, 24 February 2003.

³⁴ Interview with Monica Singer, 21 February 2003.

³⁵ Interview with Nikhil Datar, 20 February 2003.

³⁶ Interview with Nikhil Datar, 24 March 2003.

Nihilent and STRATE: From Knowledge Transfer to Transformation

Once this process was complete, Ebrahim and Nihilent could then set about ensuring knowledge transfer from the consultants to STRATE's IT employees. As precursor to defining individual balanced scorecards and learning agendas, Ebrahim had broken down the SAFIRES system into modules, identified which employees would be best suited to the various module. Then, together with them, he had analysed what they still needed to know about these modules. Ebrahim was then able to go to the consultants, define the minimum knowledge transfer STRATE required, and agree the time frames in which this transfer would take place.

Ebrahim set aside a small conference room for teaching and learning, and, this time he ensured that his staff had time to experiment with what they had learned. (Previous, unsuccessful attempts at knowledge transfer had not allowed for this, as meeting deadlines was the dominant focus). Staff members supported each other and took up others' work loads if necessary. By October 2002 knowledge transfer was complete.³⁷

On seeing the success of the balanced scorecard process in the IT division, Singer asked Nihilent to roll it out in the rest of STRATE.

MC³

In parallel with the process of defining and developing balanced scorecards in the IT division, Nihilent also set about assessing the knowledge management practices within STRATE. This was an intensive process that entailed one-on-one interviews of around 1½ hours with each employee, using the MC³ framework. Nihilent used a list of 30 factors against which it measured STRATE (generated from a discussion with Singer and STRATE's senior management, in which they identified what they perceived to be the major knowledge management problems in the organisation). This enabled Datar to assess the weaknesses in the company's knowledge management strategy and, together with Singer, Ebrahim and the rest of the STRATE management team, identify which problems needed to be addressed first.³⁸

The process identified STRATE's biggest area of weakness as being that of capacity, followed by calibration, motivation and capability. The weaknesses in capacity were the result not only of poor knowledge transfer from the consultants, but poor knowledge sharing within the STRATE. Datar recommended establishing semi-formal communities of practice as the most appropriate method of addressing these problems. These communities of practice would entail face-to-face meetings between STRATE employees and the consultants, if necessary, as and when appropriate. (See **Exhibit 9** for more detail on the structure and function of the communities of practice Datar recommended).³⁹

Nihilent diagnosed the problems of motivation as stemming from lack of role-goal clarity and inadequate reward systems. The process of developing individual scorecards addressed the first problem. To address the second, Nihilent suggested implementing a number of changes that would encourage and reward learning, including:

- ensuring that leaders were measured according to the learning that happened in their teams;
- encouraging employees to participate in key decisions in the business;
- rewarding and recognising people for learning and sharing knowledge;
- creating a culture in which employees would be encouraged to experiment and test new concepts and tools;
- ensuring that the necessary infrastructure and resources to facilitate learning were in place; and

³⁷ Interview with Shah Ebrahim, 10 March 2003.

³⁸ Interview with Nikhil Datar, 28 February 2003.

³⁹ Interview with Nikhil Datar, 3 March 2003.

Nihilent and STRATE: From Knowledge Transfer to Transformation

- mapping individual career goals to company goals so that both were aligned.⁴⁰

Datar and Singer discussed this motivation plan, workshopped it with senior management to ensure that they understood it and then made public the relevant details to the rest of the staff.

Issues of capability were addressed by putting in IT systems that would store and ensure easy access to information.

The Results

Singer was very pleased with the results of the intervention and thought it fortunate that it had taken place during a bear market. The process had been a time-consuming one. If the JSE had been in a bull market, STRATE would have had more transactions to process and might not have had the time to do the process justice and reap its full benefit. The impact on costs had been immediately evident. By February 2003, there were only five IT consultants working for STRATE and the satellite link with India had been cancelled. She estimated costs savings to STRATE to be in the region of R1 million a month.⁴¹

STRATE had performed much better than expected in 2002, delivering a R13 million loss in the year to the end of December 2002 (R12 million less than budgeted). Singer believed that at the end of 2003, STRATE would post a R5 million profit.⁴²

At the same time, the intervention had also had a far broader positive impact on the people and processes in STRATE. In the beginning, staff had resisted Nihilent's intervention. They did not see why it was necessary. To address this, Singer organised a number of workshops to explain why it was necessary and to get their buy-in. There had been "lots and lots of talking".⁴³ Some staff were not used to the transparency demanded of the new processes. Some had found it quite daunting to go through the assessments and hear what their managers thought of them. Singer, herself had found it quite a challenge to have consultants auditing STRATE's vision and mission statements.

Those staff members who had been unable to adapt had left, but Singer was not particularly concerned about this. In fact, she regarded this as a positive. It was important to her that everybody in STRATE was committed to the new way of working. "Some people like to get lost in the crowd, but this is a culture where you're either part of the team, or you're not. The ones that remain are those who are prepared to comply with total accountability," she said.⁴⁴ Ebrahim added that followers had been forced to start being a part of the organisation and to take responsibility for their work. The process, he said, had become such a way of life that the followers were simply brought along with it.⁴⁵

An unforeseen spin-off had been vastly improved communication between STRATE management and staff. The capability assessment process opened up communication channels a way that had never happened before. Singer found that communication in these sessions often became quite intimate and that trust levels grew as a result. She likened the process to "doing an x-ray into the human being and asking 'what can you do for us' and 'what can we do for you?'"⁴⁶

⁴⁰ Interview with Nikhil Datar, 24 March 2003.

⁴¹ Interview with Monica Singer, 21 March 2003.

⁴² Author unknown, 'STRATE Predicts Turnaround to R5m Profit', in *Business Report*, 14 February 2003, available www.busrep.co.za (accessed 5 May 2003).

⁴³ Interview with Monica Singer, 28 February 2003.

⁴⁴ *Ibid.*

⁴⁵ Interview with Shah Ebrahim, 10 March 2003.

⁴⁶ Interview with Monica Singer, 28 February 2003.

Nihilent and STRATE: From Knowledge Transfer to Transformation

Knowledge transfer from the consultants to STRATE IT had been successful. Knowledge sharing within STRATE had also improved. Singer now knew that the organisation was not completely dependent on her for what she knew about it. Before the intervention, whenever she went away on leave or on business her phone never stopped ringing with queries from the office. Now it did not ring at all. It gave her and the board a great sense of peace to see this change.⁴⁷

Moreover, the learning had not stopped. IT staff had come up with their own learning concept, known as “techno show” – a competition between teams to test each other’s knowledge about the SAFIRES system. In addition, if senior people recognised a knowledge gap in any of their employees, they would, of their own accord, set up a community of practice to address this gap. Some people would be required to attend, but they were open to others to attend if they wanted to.⁴⁸

The intervention had been far more comprehensive than Singer had imagined. For her, it became less about knowledge management and more about performance management as the project progressed. She saw the best part of the process to be the way in which it had altered performance management in STRATE. While her preference was to let staff members get on with their jobs and show her the results, in the past she had spent an hour a week with each of her staff members discussing what they were doing. With the individual scorecards now in place, Singer now felt comfortable that each staff member knew what their deliverables were and that she could hold them accountable for achieving these deliverables.⁴⁹

A test came in November 2002, when STRATE used the balanced scorecard, capability assessment and knowledge maps as performance appraisal tools. In the past, performance appraisals used to take two hours per person. In November it had taken as little as 15 minutes. The documents produced what was necessary and showed where performance was satisfactory and where it needed improvement. Singer believed that these tools empowered her staff, in that they could now see clearly where they were and were not performing and make plans to address it.⁵⁰

Yet there was still some way to go before the process was entirely accepted within the STRATE. Some staff members had been slow in submitting their balanced scorecards for 2003. Others had submitted inadequate scorecards. Singer thought that STRATE employees still had to learn to live the concept of the balanced scorecard. It required a complete paradigm shift on their part – from one where they expected her to project manage everything they did, to one where she now only wanted to see results.⁵¹

Singer also believed that STRATE had not yet adequately accommodated the role of chief knowledge officer (CKO). Nihilent said that ideally the function should be performed by one person, yet finding a person with the right combination of IT and HR skills had proven difficult. During the implementation process, STRATE had gone through three CKOs in six months, two of whom had been from an IT background. Their problem had been, however, that while they had the necessary technical skills, they did not have the interpersonal skills that were critical for the position. Now the role was shared by a team of three people from the IT, HR and internal public relations functions, but Singer wasn’t sure that this was best.⁵²

⁴⁷ Interview with Monica Singer, 21 February 2003.

⁴⁸ Interview with Shah Ebrahim, 10 March 2003.

⁴⁹ Interview with Monica Singer, 21 February 2003.

⁵⁰ *Ibid.*

⁵¹ *Ibid.*

⁵² Interview with Monica Singer, 28 February 2003.

Conclusion

Looking ahead at the merger between STRATE and UNEXcor, Singer now wondered what would be the best way to proceed. She knew that any merger would bring with it a number of challenges: how to manage culture clash, how to retain key staff members who might feel insecure about their positions in the new organisation, how to ensure transfer of knowledge between the two sets of employees, how to bring about the economies of scale that were the reason behind the merger in the first place.

At the same time, she wanted to implement the MC³ and balanced scorecard processes among the new employees. Yet the process in STRATE had been demanding, not only because of the time it had taken, but also because it had required a fairly high level of trust between staff members. The people in UNEXcor did not know her and she did not know them. Should she take a big-bang approach and simply tell the UNEXcor employees that this was the way it was going to be? Or should she adopt a more phased approach, trying to earn their trust beforehand? She'd called this meeting with Nihilent in the hope that it could help her plan a way forward.

Nihilent and STRATE: From Knowledge Transfer to Transformation

Exhibit 1 JSE Market Activity: 1996 – 2002

Year to	Turnover	% Increase	Number of trades	% Increase
Dec '96	R117bn	86%	1,44m	89,5%
Dec '97	R207bn	77%	2,34m	62,5%
Dec '98	R320bn	55%	3,65m	56,0%
Dec '99	R448bn	40.4%	3,75m	3,1%
Dec '00	R537bn	19.7%	4,19m	11.4%
Dec '01	R606bn	12,8%	4,14m	(1.19%)
Dec '02	R809bn	33,5%	3,73m	(0,99%)

Source: M Singer, *Presentation on STRATE*, ACSDA V General Assembly, Cancun, Mexico, 6th March 2003.

Exhibit 2 Comparative Settlement Risk in Emerging Markets: 1998- 2001

Country	1998	1999	2000	2001	2001 Ranking (out of 20)
India	18.76	41.48	71.42	80.66	(16/20)
Indonesia	74.11	56.61	67.22	77.32	(17/20)
Ireland	50.77	67.51	67.27	73.95	(18/20)
South Africa	(1.28)	0.14	36.41	58.48	(19/20)
Venezuela	60.41	53.08	46.31	53.11	(20/20)

Source: GSCS Benchmarks
Settlement risk includes factors such as interest rate and overall cost of failed trades

Source: M Singer, *Presentation on STRATE*, ACSDA V General Assembly, Cancun, Mexico, 6th March 2003.

Exhibit 3 South Africa's Settlement Risk: 2002

	Q1	Q2	Q3	Q4
South Africa	76.94%	95.32%	96.55%	98.13%
Ranking	19/20	8/20	6/20	5/22

Source: GSCS Benchmarks

Source: M Singer, *Presentation on STRATE*, ACSDA V General Assembly, Cancun, Mexico, 6th March 2003.

Exhibit 4 STRATE Vision and Mission Statement: 2002

Vision

Short Term

To be the regional provider of choice for world class clearing, settlement and depository services for all financial instruments while enabling economic and financial growth in southern Africa.

Long Term

To be globally pre-eminent and viable as the lowest priced CSD providing a fully integrated asset ownership record and the provider of choice of infrastructure for a unique and diversified range of financial services.

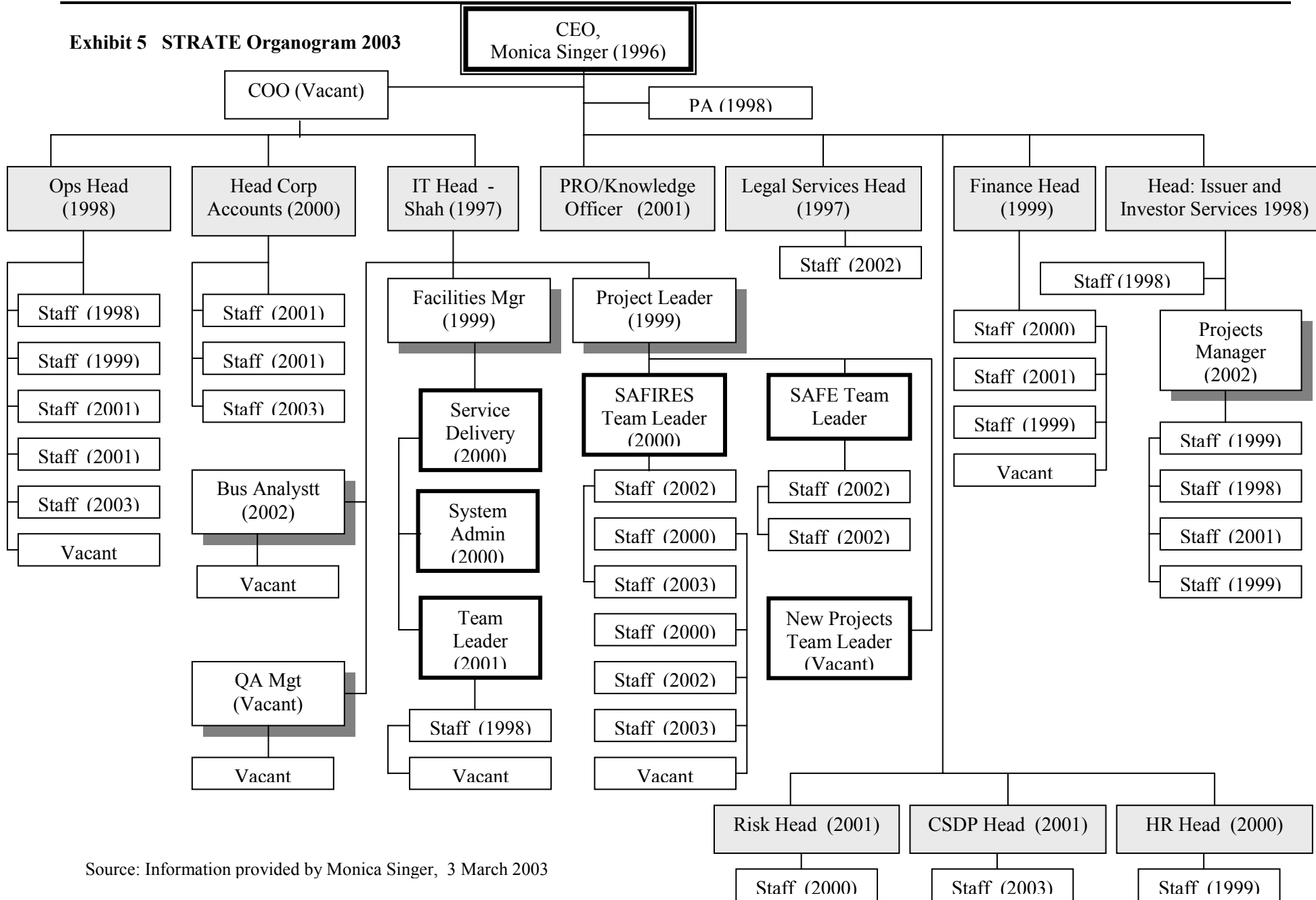
Mission

1. STRATE's core business is to provide clearing, settlement and depository services for any electronic financial instruments, while also providing customers the world over with end to end pragmatic, reliable, state of the art electronic services that facilitate the management of risk.
2. To fulfil all regulatory and supervisory obligations and to be a role model in corporate governance.
3. To:
 - a. achieve financial viability and independence while ensuring a fair return to shareholders and cost-effective services to customers.
 - b. identify and develop business opportunities which will add value to STRATE.
4. To be open minded and proactive in exploring new methods and services while driving market practices and setting achievable standards in terms of global best practices.
5. To be a learning organisation satisfying career aspirations and enabling continuous growth for STRATE, its people and the wider community.
6. To be a technologically advanced company:
 - a. with open architecture achieving secure transaction processing.
 - b. providing integrated system outsource facilities operating in a totally dematerialised environment.
 - c. enabling electronic communities through network connectivity
7. To create a culture of service excellence and delivery and to become acutely customer centric.

Source: Information provided by Monica Singer, 28 February 2003.

Nihilent and STRATE: From Knowledge Transfer to Transformation

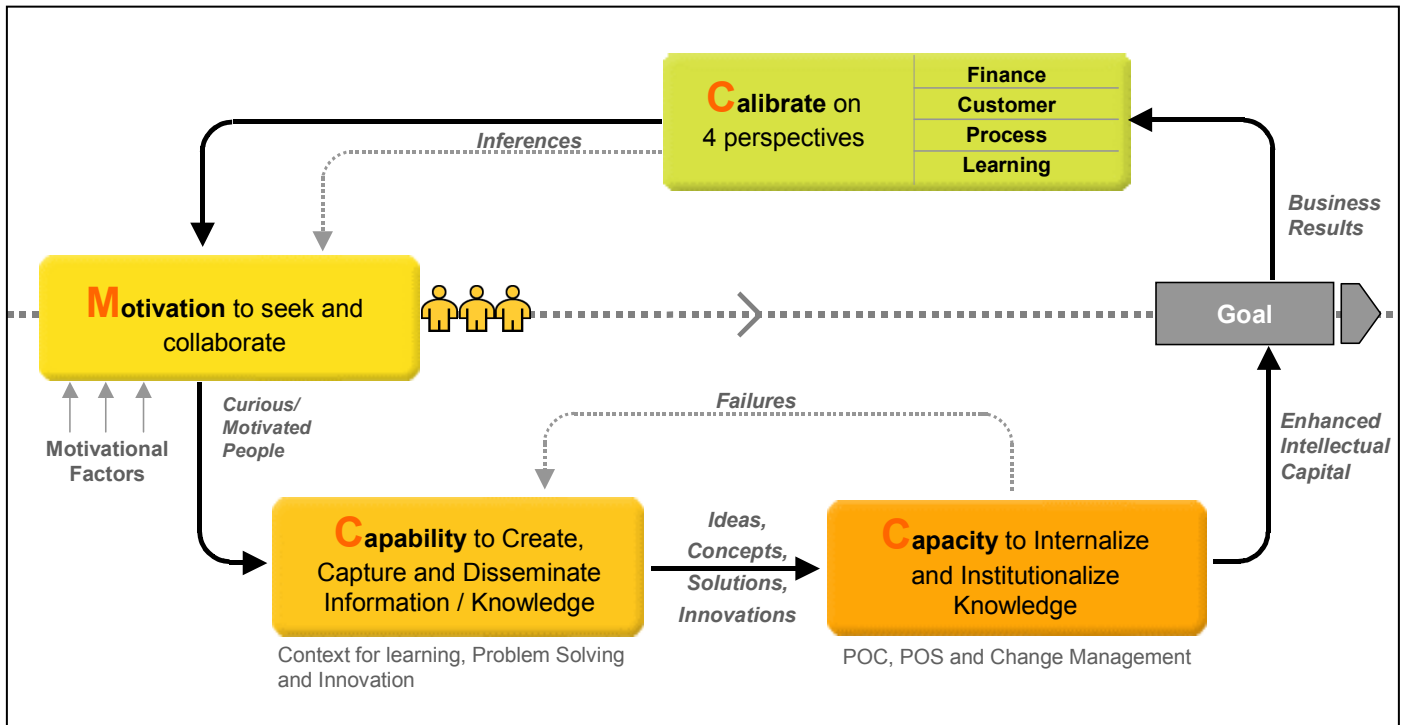
Exhibit 5 STRATE Organogram 2003



Source: Information provided by Monica Singer, 3 March 2003

Nihilent and STRATE: From Knowledge Transfer to Transformation

Exhibit 6 MC³ – Nihilent’s Delivery Framework



Source: *Knowledge Management and Nihilent*, PowerPoint presentation provided by Nikhil Datar, 3 March 2003.

Nihilent and STRATE: From Knowledge Transfer to Transformation

Exhibit 7 Extracts from the IT Division Scorecard

Vision, Mission, Strategic Objective	Measure	Measurement Formula	Weight	Actual	Target	Review Frequency	Initiatives/Action Plans	Owner	Parent
Keep in line with international standards with respect to technology, messaging and business operations	Percentage of standards and technologies revised or upgraded , against those reviewed and agreed	Percentage Upgrade completed = [(Number of approved Technology and standards upgrade completed and accepted) / (Number of Technology and Standards review approved for implementation)] *100	25		100%	Yearly	To upgrade the technology platform for SAFE	Tshidi	MS.06.12
Keep in line with international standards with respect to technology, messaging and business operations	Note: Include only those that were scheduled for completion during the review period						To automate all remaining non-automated biz. activities to achieve STP	Tshidi	MS.06.12
Keep in line with international standards with respect to technology, messaging and business operations							To investigate the feasibility of becoming a concentrator GSTPA to keep abreast with latest global biz. Offerings & to be able to offer the "GSTPA" products	Neil	MS.06.12
Keep in line with international standards with respect to technology, messaging and business operations							To implement SWIFTNet to stay current with the latest technology trends & defacto standards	Maureen	MS.06.12
To improve the efficiency of the systems with respect to current performance and take on more requirement	Number of SAFE Deltas every month		3.75			Quarterly	Investigate V-LAN	Ken	MS.03.05 MS.04.07
To improve the efficiency of the systems with respect to current performance and take on more requirement	Number of SAFIRES Deltas every month		3.75				Performance Management of STRATE Applications	Tshidi	MS.03.05 MS.04.07
To improve the efficiency of the systems with respect to current performance and take on more requirement	Number of SAFE CMRs every month		3.75				Evaluate application software to identify products that helps improve productivity and reduce development costs	Tshidi	MS.03.05 MS.04.07
To improve the efficiency of the systems with respect to current performance and take on more requirement	Number of SAFIRES CMRs every month		3.75				Technology evaluations relating to Infrastructure Facilities	Ken	MS.03.05 MS.04.07

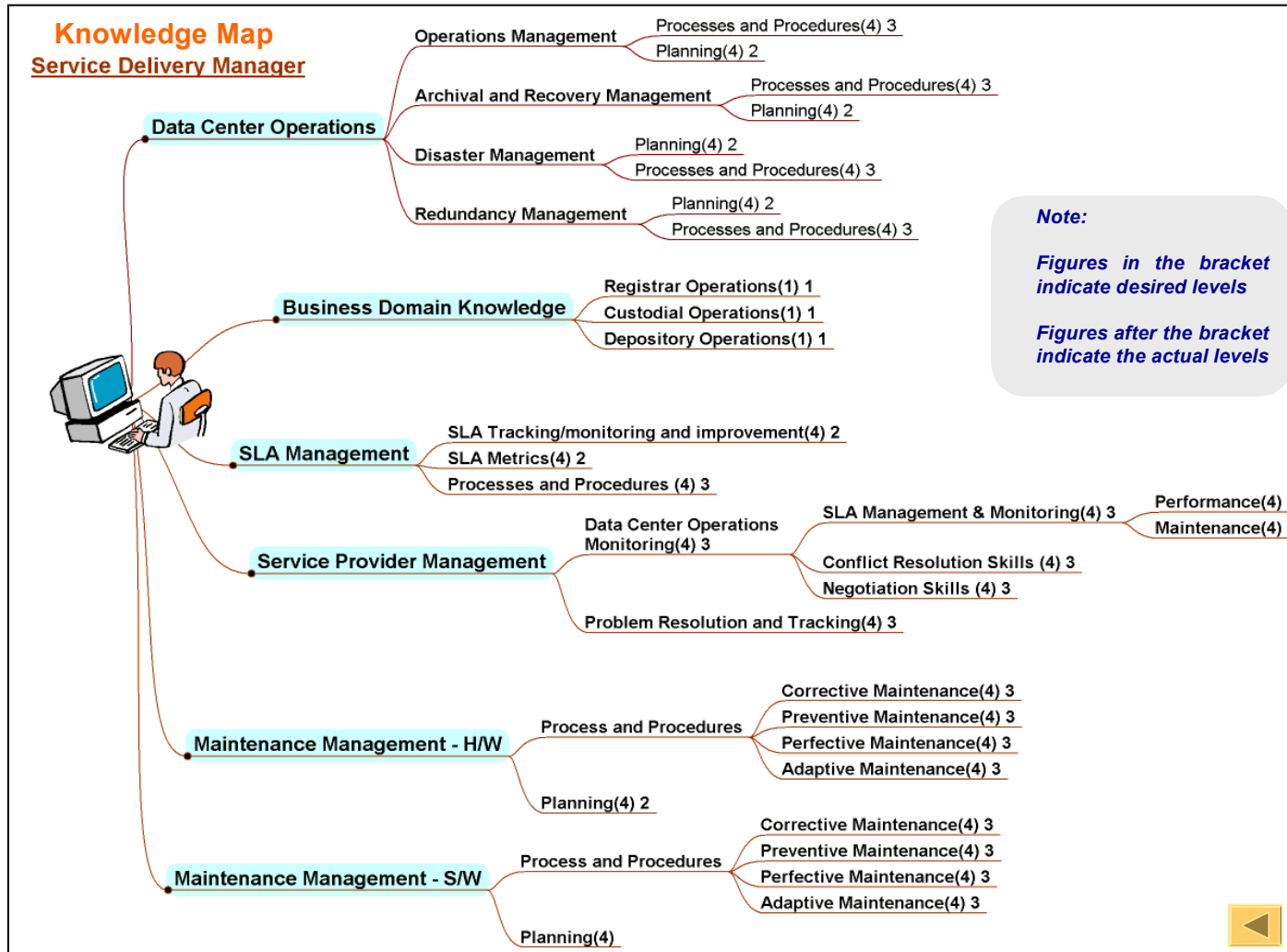
Nihilent and STRATE: From Knowledge Transfer to Transformation

Exhibit 7 (contd)

To improve the efficiency of the systems with respect to current performance and take on more requirement	Technology evaluations - SWIFT	Maureen	MS.03.05 MS.04.07
To improve the efficiency of the systems with respect to current performance and take on more requirement	To increase the productivity of the STRATE Applications Development Team through standardization & reuse	Tshidi	MS.03.05 MS.04.07
To improve the efficiency of the systems with respect to current performance and take on more requirement	To adapt the existing STRATE(SAFIRES) system to handle money market settlements, so that STRATE can market this product to the money market industry currently using hand settlement	Tshidi	MS.03.05 MS.04.07
To improve the efficiency of the systems with respect to current performance and take on more requirement	To have in place before it happens, sufficient infrastructure capacity to cope with extreme and unpredictable increases in transactions	Ken	MS.03.05 MS.04.07

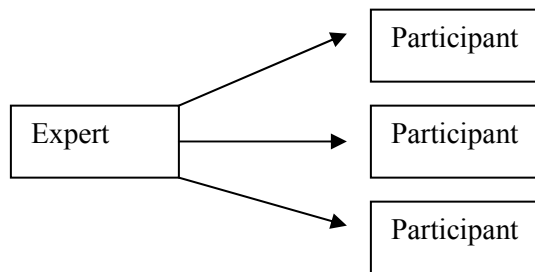
Source: Information provided by Nikhil Datar, 25 July 2003.

Exhibit 8 An Example of a Knowledge Map



Source: Information ovided by Nikhil Datar, 25 July 2003.

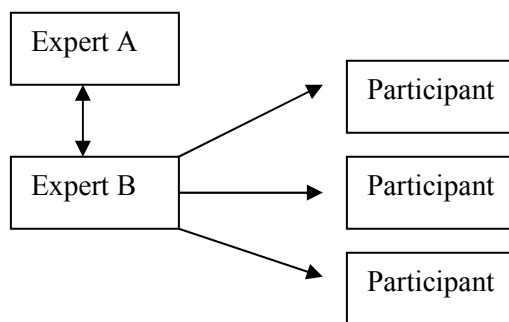
Exhibit 9 Nihilent's Recommended Communities of Practice



First type

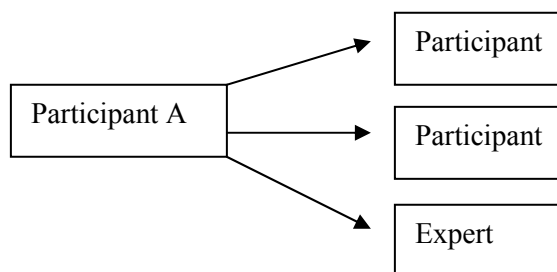
In which the expert could be from inside STRATE or a consultant to STRATE, and participants had little or no knowledge of the subject under discussion.

Second Type



In which Expert A was from STRATE, Expert B a consultant and participants were people from within STRATE who had some knowledge of the topic under discussion.

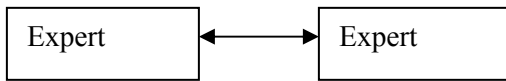
Third Type



In which Participant A had some to little knowledge of the topic under discussion, but was expected to learn about it before presenting to a group containing an expert and participants who had some knowledge on the topic.

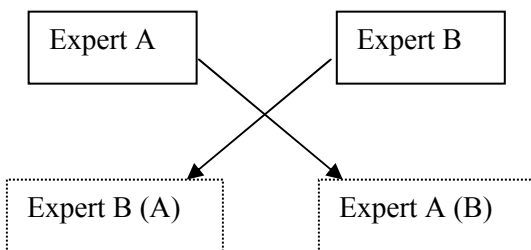
Exhibit x Nihilent's Recommended Communities of Practice (contd)

Fourth Type



In which the interaction was designed to let employees understand each others' roles.

Fifth Type



In which experts in two highly interdependent roles switched roles for a short period, so as to understand what each person did.

Source: Interview with Nikhil Datar, 24 March 2003.