

Chapter 6

Empirical Investigation into the Implementation of an Internet-Based Self-Service Technology at a Healthcare Insurance Firm

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6.1 Introduction

In chapter 5, I reviewed the broader social context that expressed the challenges of self-service technology implementation in the global and South African healthcare contexts. This chapter is devoted to describing the case study organisation in natural language,¹ prior to a formal analysis in chapter 7 and chapter 8. The narrative that follows was put together using primary and secondary textual material collected from unstructured interviews, newspaper and magazine reports, and various internal publications. My role of interpreter involved comparing, ordering, explaining and interpreting the material to convey the history of the implementation phenomenon.

The first part of this chapter is devoted to describing the organisational environment of the case, such as the complex regulatory environment; the formation of joint ventures (JVs) and internationalisation; competitive and innovative behaviour; important product design considerations; changing market conditions; and the evolving role of information and communication technology (ICT).

The second part of the chapter integrates the key features of the organisational environment context in discussing the implementation of an Internet-based self-service technology. The case spans from the early period of 1999 until 2005. This historical reconstruction tracks the evolution of the Internet-based self-service technology as it was implicated in various forms of organising from a static content-based website, to a newly established strategic business unit responsible for e-business during the dotcom era to a quickly restructured e-commerce department during the dotcom consolidation period, and – during the research fieldwork period – to a ‘streamlined’ decentralised project team responsible for overall front-end development work of organisation-wide applications. Against this backdrop of organisational change, the discussion traces the way in which users and designers responded to the implementation and use of the Internet-based channel, in the context of traditional channels and the growing array of alternative technology-based channels and communication media options.

¹ Walsham and Han (1993) advocate a ‘natural language’ description of a case prior to a formal analysis. A ‘natural language’ depiction of the case presents the author’s description and interpretation of events without the aid of the conceptual lenses. In the next chapter, the deeper and richer insight provided by using the key conceptual elements of the two theoretical frameworks will become self-evident to the reader. All participants’ responses have been captured verbatim.

6.2 United Assurance Group (UAG) and its context

6.2.1 Introduction

These contextual elements are crucial for understanding the SST implementation phenomenon. I begin this section by presenting the structure, mission and culture of the case organisation. I then present the major historical developments experienced by the organisation from 1999 to 2005, shaped largely by the trends alluded to in the previous chapter. This is followed by a brief discussion on the increasing role of ICT in the UAG business. In the next section, I focus briefly on the case study organisation, mission and culture.

6.2.2 Organisation structure, mission and culture

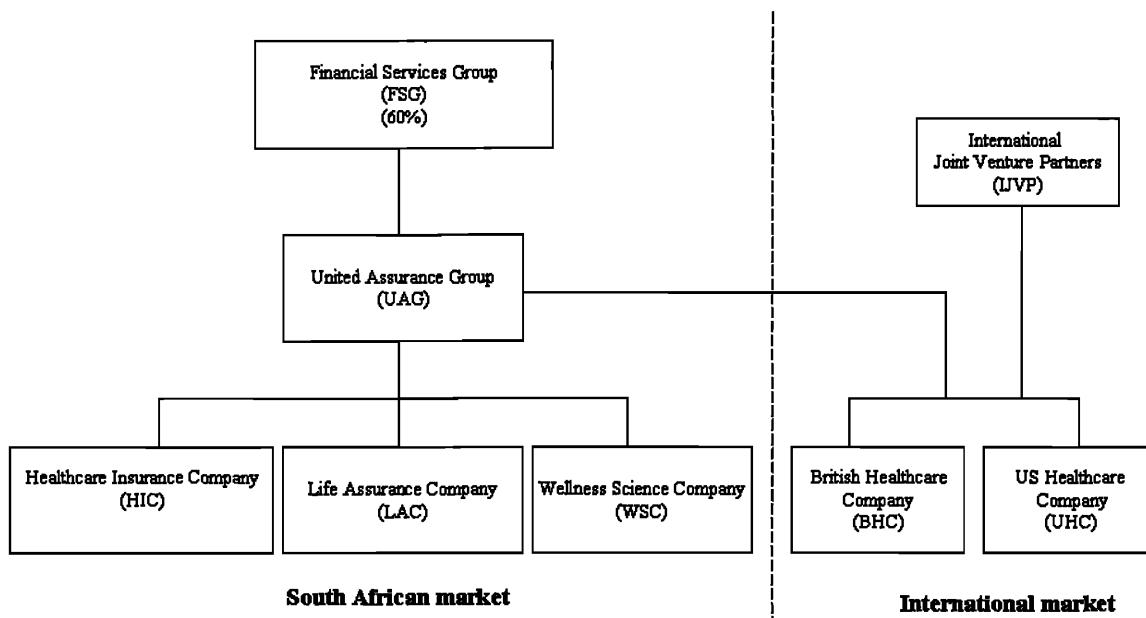


Figure 6.1 UAG's structure

Source: Derived from UAG's financial reports

United Assurance Group (UAG) is a subsidiary of Financial Services Group (FSG), one of South Africa's largest financial services companies (see figure 6.1). Listed on the Johannesburg Securities Exchange (JSE) and the Namibian Stock Exchange, FSG positions itself as an integrated financial services group, providing a comprehensive range of products and services to the South African market and niche products in certain international markets. It comprises a

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number of leading brands in banking and assurance, UAG being one of them. The dominance and performance of FSG in the South African market is demonstrated by its market capitalisation of more than R77 billion in 2005.

HIC, UAG's initial subsidiary company, was founded in 1992. At the time, HIC's offering was a fundamental shift in funding healthcare in the South African healthcare industry. Driving HIC's growth was the medical savings account component of their product, which at the time was a major innovation in healthcare funding in South Africa.

Because of tremendous growth, by 2000 HIC had been incorporated into a holdings structure, reporting to a parent holding company. UAG, the parent company, was composed of five divisions: Healthcare Insurance Company (HIC), a healthcare finance company; Wellness Science Company (WSC), a company that provides wellness and loyalty programmes for customers and partners across the UAG group; Life Assurance Company (LAC), a life insurance company; United States Healthcare Company (UHC), a start-up healthcare company which UAG had launched in the US; and eHIC, the e-business arm of UAG.

By 2001, eHIC had been integrated back into the UAG business, and was no longer regarded as a separate strategic business unit. It was now operating under the banner of H-World, which was the individual brand name of the website, and was a department restructured into the information technology department, reporting to the CIO. By 2004, UAG had extended its operations in the international health and life assurance markets, with the establishment of the British Healthcare Company (BHC). BHC focused on offering 'consumer-engaged healthcare products' for the UK's private medical insurance market.

In 2000, UAG had more than 1 300 employees. By 2005, this number had more than doubled. More than 40% of the staff was composed of call-centre employees, IT made up 10% of the staff complement, while the rest of the staff was made up of administrative, actuarial and medical skills. The organisational make-up was complex in terms of diversity. There were differences in age groups, race, gender, social backgrounds, academic credentials, occupational disciplines and functional set-ups. These differences added to the interesting mix of social and political dimensions.

At the heart of the UAG business was HIC. HIC's health plans were positioned as combining 'consumer empowerment and healthcare management to ensure that their members enjoy sustained affordable access to high quality care based on their needs'. HIC was covering more than 1.8 million lives by the end of 2005. WSC forms the unique underpinning to each of the four businesses. The aim of WSC is to provide members with the tools to 'prevent disease and improve their wellbeing'. WSC was launched in 1997 in response to the growing trend towards a healthier, more active lifestyle, and based on the premise that healthier lifestyles could translate into long-term savings on healthcare costs. According to the firm, WSC's purpose was to enhance the health of its members significantly. However, the cynics, especially in the form of the regulator, viewed this as a mechanism to appeal to the young and healthy (thereby reducing the risk pool). In any event, the 'science of wellness', as it is called, had more than a million clients by 2005. At the time, UAG's Wellness program was also endorsed by the Sports Science Institute of South Africa. In the next section we will review many of the key events in which the firm was implicated.

6.2.3 Key strategic thrusts from 1999 to 2005

In 1999, UAG listed on the Johannesburg Stock Exchange (JSE). To ensure organic growth in the local market, HIC (UAG's flagship healthcare arm) had to be in a position to adapt itself appropriately to significant environmental changes prompted by the regulator. In 1999, HIC announced a premium rate increase of 13.8%. Yet rate rises announced by competing medical schemes ranged from 16 to 24%. These increases were attributed to medical inflation for the year, which was between 13% and 15%, and a stockmarket crash in 1998. Given the lack of regulation at the time, some of the competing schemes had invested in the market, and were reliant on income and profit from these investments. However, when the market collapsed, their reserves suffered, making it necessary to drive rates much higher than could be justified purely by reference to medical sector inflation.

During this period, HIC's new product development initiatives were being constrained by major regulatory changes. At the product launch at the end of 1999, a major row was sparked off between HIC, the Department of Health and the Medical Schemes Council. The Medical Schemes Council had requested that the 'demarcation debate' between medical scheme and insurance business had to be resolved, meaning that the newly developed health plans had to

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abandon any form of reinsurance and individual risk rating. This necessitated a substantial change in the structure of the health plans, which required a massive organisational effort, despite a complete rethink of the actuarial basis of the plans, and major changes to the operational systems, which had already been reconfigured to deal with the new product launch.

From a servicing perspective, HIC was receiving more than 26 000 phone calls, faxes and e-mails from members each week. To boost efficiency levels against a backdrop of ever-increasing competition in the industry, HIC installed an additional hi-tech communications centre. The new communication centre used a Lucent Definity switch, and was geared to handle all forms of client-interaction, be they via phone, fax or e-mail. The purpose of the new 130-seat facility was to enable call-centre agents to respond quickly, accurately and professionally. Furthermore, it was intended to allow the firm to pinpoint trends among customers and service components, since calls and complaints could now be automatically logged.

Another key strategic thrust for the organisation at the turn of 2000 was to capitalise on joint ventures (JVs) and trends towards consumer-driven healthcare in the international market, particularly in the US. This was marked by the launch of UHC, which aimed to test the effectiveness of UAG's core strategies in other markets. At the same time, UAG was preparing for the launch of LAC, its life assurance initiative in the South African market. LAC's product range offered protection against death, disability and dreaded disease.

Meanwhile, by late 1999 only 19 000 customers were using UAG's online service, called H-Link. However, apart from some basic services, H-Link provided mostly standard marketing information. Given the perceived competitive threat of a 'pure-play' health insurer entering the market at the time, and the hype around the servicing and cost-saving potential of e-business, the insurer was prompted to radically improve its electronic services.

The following excerpt appeared in the *UAG Group Consolidated Financial Report* in June 2000:

eHIC will be launched to the market in October 2000. This will offer further value to our clients by providing access to the range of UAG's products and services in a fully interactive on-line environment and by offering new products and services in an exciting and creative way.

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Meanwhile, another major retranslation in HIC's vision was taking place. This was from that of innovative financing of healthcare towards a far more profound one of 'making people healthier and enhancing their lifestyles'. HIC's products and services were reinvented to follow this vision. In particular, WSC made significant enhancement to its leisure suite of benefits and the implementation of outcome-based fitness measures and rewards. On the back of an aggressive marketing campaign and in collaboration with their brokerage distribution channel, WSC's business grew by a massive 64% in members to 469 904 members from 285 947 members. At the same time, HIC's health plan membership had grown rapidly by 38% to 701 395 lives from 509 858 lives² in the previous period.

By December 2001, on the back of the growing popularity of its Wellness product, HIC had grown rapidly to in excess of 1.1 million members covered by health plans offered within the HIC Medical Scheme. This size advantage provided the organisation with a more robust risk pool, and offered it a degree of stability in what was an increasingly volatile and complex risk management and regulatory environment. HIC's average annual contribution increase – despite being double digit – was again below the industry average, and the organisation reconfirmed the highest possible credit rating for claims-paying ability for an open medical scheme. In addition, service had remained a major focus at HIC. A total of 30 000 calls were taken per day, with 73% being answered within three rings, and 1 100 new member applications were received daily, with 98% being processed within 24 hours of receipt. As many as 1.4 million claims were being processed per month, and were being paid within 12 days of arriving at HIC. Furthermore, the amounts billed to its 125 000 corporate clients nearly doubled in this period. New business continued to grow, with over 40 000 people joining HIC's health plans in the month of December 2001 alone.³

One of the most pressing regulatory issues facing the medical schemes industry at the time was the capitalisation of medical schemes to meet statutory reserve requirements. The Registrar of Medical Schemes rejected one of HIC's proposals, which involved a complex insurance structure through its parent company, FSG. HIC maintained that it aimed to protect the interests of members who were already being subjected to substantial increases. The rejection by the council created an enormous amount of uncertainty in both the organisation and the medical schemes

² UAG's Consolidated Financial Report, 2000.

³ UAG's Consolidated Financial Report, 2001.

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industry. Eventually an interim solution that satisfied the requirements of the Medical Schemes Act was tabled via an elaborately structured loan mechanism.

Meanwhile, LAC was starting to make significant progress barely one year after launch. It was primarily through UAC Consulting Services, a large broker house, that it had strengthened its national distribution footprint. During this period, four additional distribution outlets were established around the country, raising the number of outlets to 16. This move helped secure increased penetration in the independent intermediary market since LAC had access to over 2 800 financial advisors (brokers). In addition, a group life product was launched into this distribution environment that leveraged off HIC's existing client base. This cross-selling approach culminated in approximately 20% of all new business sold by independent intermediaries in the risk assurance market. Meanwhile, LAC, adopted a policy of operating autonomously with their IT systems.

Furthermore, WSC launched significant enhancements that offered their members benefits they could use more frequently. This supplemented their existing Wellness benefits that gave members access to flights and hotel accommodation that are used less frequently, but have a high value per transaction. Alternative benefits included the launch of discounted movie tickets at a popular cinema chain and discounts to leading lifestyle magazines. WSC was becoming more and more pivotal to HIC's value proposition to its clients, and was viewed as an indispensable mechanism for enhancing the group's ability to retain its customers and obtain access to valuable behavioural information. Furthermore, WSC was a key differentiator in the industry, and the brokers used this dimension to actively promote HIC's health and life products.

At the same time, the concept of consumer-driven healthcare appeared to be gaining momentum in the US healthcare market. The prospects for UHC were optimistic in the Chicago area, where it operated. At the time the estimates for the market size in Chicago alone were 8 million people, roughly the size of the entire South African healthcare market at the time. In addition, a wellness program was launched in the US in October 2001 to more than 550 intermediaries. Despite early operating losses, the results of these initiatives were viewed as encouraging. Over 150 companies were covered by UHC, delivering R119 million new business annualised premium income.



Photo 6.1 HIC located in a commercial high-rise city centre⁴

In articles in *USA Today* and the *New York Times*, HIC, a South African firm, was being mentioned as a pioneer in what was being called the new ‘consumer-driven health plans’. The Wellness program featured on the NBC television channel and in the *Chicago Tribune* as a unique ‘paying-for-wellness’ approach. UHC operated its own IT systems. A few of the South Africa-based employees were deployed to the US to develop these systems, which included an online component.



Photo 6.2 A sprawling township located less than 10 km from HIC’s offices⁵

⁴ The photograph is of the commercial centre close to HIC’s offices – not unlike the skyline of downtown Chicago. However, less than 10 km away people live in squalor in sprawling townships with low-cost housing and dilapidated shacks.

⁵ Contrasting scenes of poverty and affluence, a hallmark of South African cities, symbolise the persistence of apartheid structures and of wealth remaining in the hands of the ‘elite’.

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Meanwhile, for a number of reasons (which I will explore in the next section), eHIC, the e-business arm, was no longer operating as a separate business unit. The ‘problem child’ was now operating as the e-commerce department within the information systems area.

In 2002, UAG announced an annual 14.8% increase to premiums in an environment where many other schemes still battled to keep their increases below 25%. Part of the reason for the high increase was to meet the regulator’s 25% reserve requirements. Despite regulatory pressures to manage its reserves, UAG Holdings reported a profit of R173 million.⁶ HIC contributed R179 million towards operating profit, while UHC, with just over 17 000 members, reported an operating loss of R91 million. HIC’s market share grew from 15.61% to 18.64%, equating to 1 384 953 insured lives. Annual lapse rate at the time was around 3.6%. At this time, UAG started to actively investigate the potential of medical aid products for the employed, but uninsured population in South Africa, which at a potential market size of 7 million presented a challenging but alluring opportunity.

In 2003, patients were spending on average between 14% and 18% more on their medical aid premiums. This was attributed to the knock-on effect of increased medicine prices by suppliers and hikes in day-to-day doctors’ fees. A majority of new clients started buying into plans at the bottom end of the scale. This, in addition to governments compelling the private sector to support low-income medical schemes (LIMS), prompted the company to intensify its efforts to develop a new low-cost plan, which was targeted to be launched in January 2004. Meanwhile, UAG’s competitors also raced to develop alternative options in 2003. From a contribution increase perspective, HIC increased its rates by 14.8% across its plans, while its largest competitor was increasing its rates by between 15% and 18%. At the time, the healthcare industry was characterised by issues such as imported inflation, over-servicing, fraud, high salary bills, kickbacks to providers, and the legal requirement to retain a proportion of contributions as cash reserves, which were all serving to drive healthcare costs upwards.

Despite showing relatively improving productivity performance over time, the Council for Medical Schemes continued to apply pressure on the level of fees charged by HIC and the other scheme administrators (see figure 6.2). At the same time, funders, administrators, and service providers, including doctors, hospitals, and the manufacturers of medical supplies, continued to

⁶ UAG’s Consolidated Financial Report, 2002.

accuse one another of pushing up prices by raking in unreasonable profits. Moreover, despite being on track, there was added pressure on UAG to meet the regulator's 25% reserve requirements by 2004 (see figure 6.3).

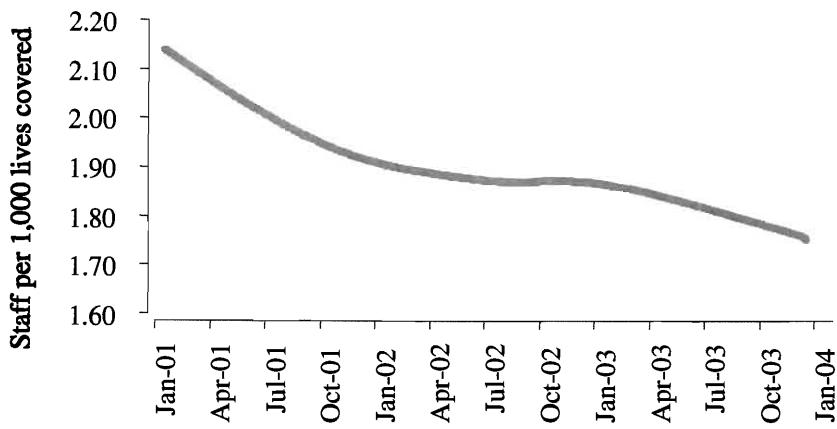


Figure 6.2 Staff productivity as indicator of administration efficiency

Source: HIC's financial reports

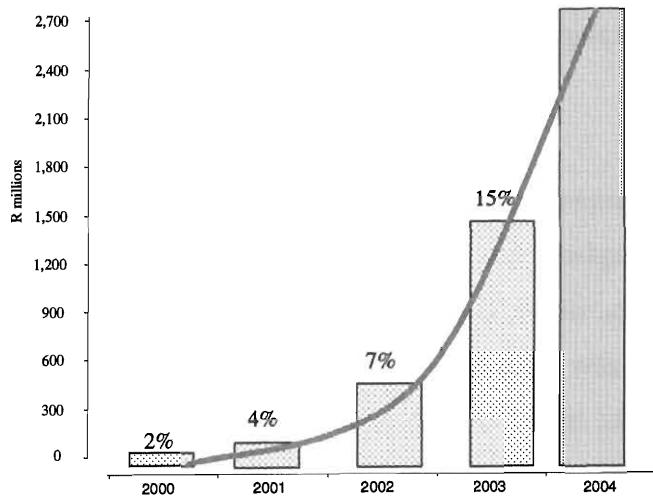


Figure 6.3 Growth in reserve requirements

Source: HIC's financial reports

Note: 2004 was a forecast

Over time, the design of HIC's products was accused of being too complex. On 14 January 2003, a story that appeared in the *Business Day* stated that:

... (The) principal officer of SA's largest medical scheme, HIC, readily acknowledges the complexity of the scheme's products, but says the firm makes every effort to simplify the information.

The evolving consumer-driven healthcare product was becoming laden with jargon. Apart from understanding the medical savings account (MSA) mechanism and how it works, members needed to understand a plethora of unfamiliar concepts related to the mechanics of the MSA, such as the self-payment gap (SPG) and above-threshold benefit (ATB). Members could not understand how the products worked. Brokers struggled to keep up with the changes, and were not very effective at equipping members with understanding. Consequently, call rates among new members were very high as they grappled with the product.

Meanwhile, brokers and members often accused HIC's call-centre consultants of offering inconsistent answers to product questions. However, the consultants did devise ingenious ways of explaining these questions through the use of analogies. For example, to explain the self-payment gap, the call-centre consultants often used the analogy of two buckets. The story goes: as one bucket gets empty, the other gets full. In other words, the self-payment gap is the difference between what you have and what you spent.⁷ Needless to say, the growing product complexity coincided with further administration complexity and therefore pressure on the IT staff and the systems already in place.

In the meantime, the National Health Department began its plan to implement two major reforms, including the risk-equalisation fund and changes in tax breaks for employers and workers on medical schemes. Medical schemes and their administrators were anxiously awaiting details of these reforms. The Health Department was hoping that these reforms would dramatically increase the number of people who could afford private health insurance. In the short term, the medical schemes and their administrators were mostly concerned about the impact of these reforms on their sustainability.

Despite the ongoing flux in the environment owing to regulatory changes, HIC results reflected strong organic growth. HIC and WSC continued to produce strong organic growth, and LAC was now a market leader in terms of risk-only life assurance. In the US, UHC had made great strides in its bid to break even by end 2003, and secured two important joint ventures. Locally, HIC

⁷ Call centre focus group session 1 (April 2002)

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experienced a 26% rise in new business and a reduced lapse rate of 3.4%. The organisation attributed this success in part to the company's intensified focus on service, brought about by the re-engineering of HIC's service model into a series of small, cross-functional service teams. Another operational focus during this period was to reduce claims-processing turnaround times and provide faster payment to providers. Whereas payments were processed monthly, the payment cycles were increased to bi-monthly. These faster payment turnaround times were achieved via secure and electronic transmission of claims – and for manually submitted claims, via the use of optical character recognition (OCR) to scan invoices and routing using optimised workflow for adjudication and payment.

Meanwhile, total lives covered by HIC grew by 23% to just under 1.5 million, placing the HIC Medical Scheme at more than twice the size of its closest competitor. This rapid growth placed severe constraints on service delivery, specifically the turnaround times for underwriting and issuing new membership packs.

Nevertheless, UAG Holdings reported an operating profit of R315 million.⁸ HIC contributed R215 million towards this operating profit. UHC, with just over 28 449 members, up 67% from the previous period, reported a slight decline in operating losses at R79 million. HIC's overall market share grew from 18.64% to 21.91%, equating to 1 540 961 insured lives, and making it the leader in the marketplace. Annual lapse rate at the time was still reasonably sound at around 3.6%. Meanwhile, the LAC business reported a R105-million operating profit, which was substantial compared with R17 million in the previous year.

By 2004, HIC had announced its lowest-ever contribution increase of 5.4% in the last decade. Progress in meeting reserve levels meant that HIC and the HIC Medical Scheme were able to offer a marked reduction on the previous year's increase of 13.3%. The other dynamic enabling the company to hold down increases was government's moves to drive down drug prices, enforced by the Medicines and Related Substances Control Act. Estimated medical inflation was forecast only to be between 5.5% and 8% during this period. However, the firm attributed its ability to offer a low premium increase in line with CPI to its consumer-centred model, linked to its Wellness concept. Meanwhile, a huge amount of energy was being spent on the introduction of an integrated 'next generation credit card', designed to enhance and reward members of the

⁸ UAG's Consolidated Financial Report, 2003.

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Wellness program. Rewards were to include discounts from a range of retail outlets and interest-free credit on medical bills.

UAG enjoyed a 102% growth in operating profit in 2004 on the back of strong results from all of its businesses.⁹ LAC increased profits by 138%. In addition, US-subsidiary UHC achieved profitability in its Illinois business, and solid growth was achieved in the core HIC business. This was a major milestone, because the healthcare insurance subsidiary in the US turned a small profit for the first time since its launch in 2000. This performance was attributed to UHC's joint ventures with two credible US financial services firms. The goal of leveraging the distribution capability and scale of its joint venture partners to grow its membership base was starting to show signs of success.

Operating profit was largely attributed to the life business, which grew profits by 138% to R271 million compared with R114 million in 2003. The life business, which now constituted almost 40% of operating profits, had exceeded expectations since its launch less than four years previously. The company's market share of new business of the entire life assurance market, a very competitive arena, already exceeded 6.1%. It was largely product innovation and the integration of the offering with HIC and WSC that enabled LAC to remain highly competitive. Innovations in the year included the launch of the payback benefit. This feature allowed HIC members who were LAC policyholders to receive back a substantial percentage of their life assurance premiums, based on how they managed their health. By now, LAC had become the established leader in the life assurance market, a position reinforced by its rating in an independent industry survey conducted by PriceWaterhouseCoopers. The life business was also looking at the possibility of entering the investment products market. A range of products, including long-term savings, endowment funds, unit trusts and retirement funds, were in the process of being designed. Meanwhile, only nine months into its operation, the organisation had issued more than 200 000 UAG cards to Wellness members.

HIC continued to grow market share in the period under review, and membership stood in excess of 1.6 million members. This growth and improved administration efficiencies helped grow operating profits by 40% to R522 million. Meanwhile, HIC's LIMS (low-income medical scheme) product, which was aimed at employees earning less than R5 000 per month, continued

⁹ UAG's Consolidated Financial Report, 2004.

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to grow in line with projections, having gained approximately 67 000 members. In the meantime, significant elements of the back-office functionality of UHC were being moved locally to achieve the benefits of scale and a lower-cost environment. An important by-product was the creation of job opportunities for South Africans. Around 100 jobs were to be established locally over a period of 12 months.

UAG was involved in another joint venture between BHC and the UK International Joint Venture Partner (IJVP) to penetrate the UK market. With an ageing population, and one in four UK citizens being obese, a tremendous burden was being placed on the National Health Service (NHS). The UK product range was being built on UAG's 'consumer-driven healthcare' experience, although it was not a full replacement scheme, as in South Africa. Similar to the strategy for UHC, the company's administrative and service support functions were to reside in South Africa. The launch was already ahead of schedule, with the infrastructure approaching operational readiness. Furthermore, the wellness product offering was largely completed, having secured deals with two leading UK gym networks. In addition, approval from the UK's Financial Services Authority (FSA) paved the way for the product launch.

The launch was very aggressive, backed by a massive advertising campaign. Coverage included Sky News, BBC's lunch-time news programmes, and a number of press releases. The head of the UK JV appeared on CNN to talk about the launch and the new products. BHC was also engaging with brokers to get them to support the product to the UK corporate market, while it aimed to market directly to consumers. One aspect of direct marketing was via the online channel. A considerable amount of energy was being spent on leveraging some of the successes of H-World. The goal of BHC was to sign more than 650 000 members, equating roughly to 10% of the 6.5 million UK citizens who use private healthcare. Early indications were that the UK was a difficult healthcare market to penetrate, as most of the population was already covered by the NHS, and therefore did not use private healthcare. In addition, it was emerging that the 6.5 million private medical scheme members in the UK were reluctant to switch from existing products. Another milestone for UAG in 2004 was its move into the JSE Alsi 40 (one of the top 40 shares), which helped to raise its profile on the JSE.

By 2005, HIC was consolidating its position as South Africa's leading private healthcare funder, because of its scale, perceived quality and ability to offer local consumers innovative solutions.

The company was by now the largest medical scheme administrator in South Africa, administering the medical scheme benefits of nearly 1.8 million members¹⁰ (see figure 6.4). New business growth continued to expand rampantly, while profits grew modestly during the year.

After a period of industry-wide uncertainty and volatility after the implementation of the Medical Schemes Act in 2000, HIC had managed over the past few years to achieve a position of stability. The focus shifted to sustainable healthcare cover in the long term for members, and solid and consistent financial performance for shareholders. Members' annual contribution increases were down to single-digit figures and lower-income health plans, which aimed to broaden access, were growing moderately.

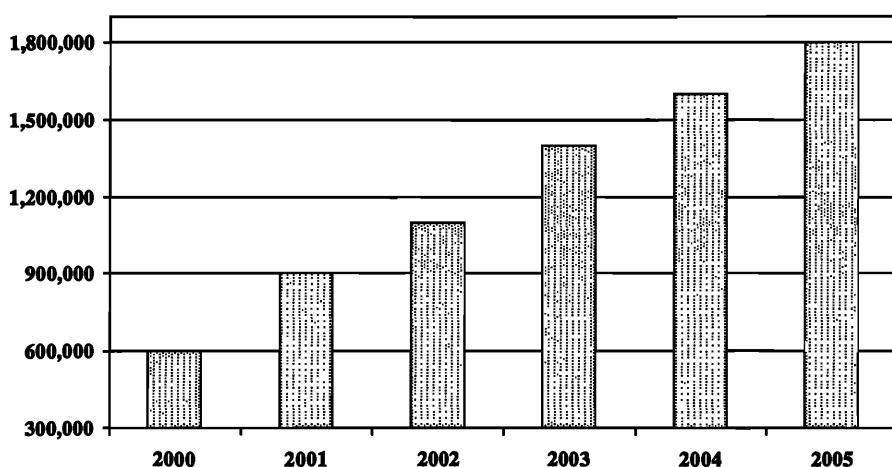


Figure 6.4 HIC's rapid health membership growth

Source: UAG's financial reports

Meanwhile, the international credit rating agency Global Credit Ratings (GCR) again upgraded HIC Medical Scheme's domestic claims-paying ability. The upgrade in the scheme's rating was based on the substantial net surpluses the firm had made in recent years, which significantly bolstered the scheme's reserves and solvency ratios.

HIC achieved another important milestone with its LIMS product. The 100 000th member made the LIMS product – launched in 2003 – the largest lower-income offering to address the needs of

¹⁰ UAG's Consolidated Financial Report, 2005.

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the employed, but uninsured market. In less than two years the LIMS product grew into the largest offering in its environment, at least five times larger than its nearest competitor. The market potential of 7 million meant that more energy needed to be directed to this space. This performance was achieved largely through a joint venture with PFM Financial Services (PFM), a firm of black financial intermediaries.

UAG Holdings also announced the conclusion of a strategic black economic empowerment (BEE) transaction. In total, the new shareholders were to represent approximately 7% of UAG Holdings' equity. This brought UAG's total BEE shareholding, after accounting for the BEE shareholding in FSG, to just over 25%, which was in line with the requirements of the Financial Services Charter. At least 3% of UAG's shareholding would rest with WDB Investment Holdings (WDB), a group which focuses on the economic empowerment and upliftment of black rural-based women. The BEE deal also saw the formation of The UAG Foundation, which aims to invest in the education and training of black medical specialists in areas of need. Furthermore, UAG non-white employees were to receive an allotted amount of shares, depending on their level of seniority and contribution.

Meanwhile, the Wellness program was now covering more than 1.2 million lives, growing from 1 060 000 lives covered in 2003 (see figure 6.5). The Wellness product, which had placed huge emphasis on online services in the past, had recently formed the WSC Wellness Network, which was focused on providing members with access to a network of healthcare professionals to conduct health assessments and screenings. A shift in leadership in this area saw a move towards traditional approaches. It appeared now that traditional healthcare professionals – including dieticians, pharmacists and biokineticists – seemed to be better equipped to provide members with comprehensive, scientific feedback on their current health status, and on how best to use the Wellness program to achieve better health outcomes.

Meanwhile, UAG Health delivered another single-digit increase in medical scheme contributions to its 1.8-million members, with the announcement of a 6.9% average increase for 2006. The lower lapse rate, down to 3.4% from 3.8% in 2004, was attributed to the high service levels. In the past the firm had consistently demonstrated its ability to deliver and deploy new and innovative products within shorter time-to-market timeframes. To maintain high retention rates

or, in other words, low lapse rates, emphasis was now shifting strongly towards operational efficiency and service levels.

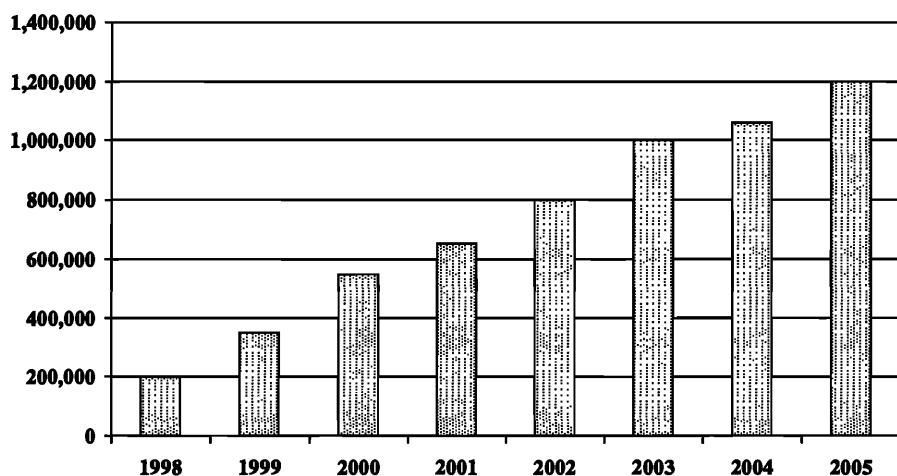


Figure 6.5 WSC's rapid Wellness program membership growth

Source: UAG's financial reports

According to the UAG managing director:

Over the past year, we have again focused intensively on streamlining the operational aspects of our business. Our strategy has been two-pronged – first, improving the technology and e-commerce capability and secondly, carefully measuring our people's performance and incentivising the right behaviour in every service interaction. This has led to a significant improvement in service levels, lower error rates and a reduction in the number of call centre calls thanks to increased first-time resolution of queries. (June 2005)

As a result of the rapid growth in the local market, the plethora of products to target specific market segments, expansion globally, and the increasing demands of its members, shareholders and the regulator, UAG began to review and optimise some of the key organisational work processes. Members were supported by a range of channels, in the so-called front-office functions, such as the call centre, intermediary, walk-in centres, and the Internet.

Providing this flexibility for its members meant that the organisation had to integrate these channels into the back-office organisation where the core production processes are managed. Furthermore, reliability of these channels was more crucial, given the size of the member base. A 1% error rate for almost 1.8 million members could potentially create a huge burden on the organisation's supporting services as well as the firm's reputation. The ability of the firm to

respond expediently to member queries and other service-related dimensions was becoming more critical, hence the continued focus on turnaround time and other service-level measures (see table 6.1). Therefore problems relating to front-office and back-office integration were high on the agenda. There was also a move to a cost-reduction strategy, which was compounded by the regulator's continual insistence that insurers reduce their high administration costs.

Table 6.1

Average service levels achieved in relation to client interactions

Channel	Volume	Service level
Service centre	35 000 calls per day	86% answered within 20 seconds 96% queries resolved during the call
Walk-in-centres	5 000 clients per month	Average waiting time: 2 minutes, 40 seconds
Correspondence (emails, faxes, letters received)	1 280 per day	Response within 8 hours
Interactive website	1.3 million logins per month	99.27% uptime
Queries channelled through employer or intermediary	5 000 per month	93% resolved in 24 hours

Source: UAG's Consolidated Financial Report, 2005

These developments and strategies had important implications for IT, the SST and its use.

6.2.4 Summary

To summarise, UAG operates in a complex environment. There are three dimensions that provided a formidable challenge to the organisation during the case study period. First, the UAG landscape was characterised by a regulatory environment in constant flux; a corporate shareholder demanding a return on investment; and members expecting financial security and affordable healthcare products in the context of rising medical inflation. Despite these odds, it appears that a shrewd marketing strategy, combined with an effective distribution strategy and innovation in product designs, contributed to the organisation's phenomenal growth and

earnings. The design of fairly complex products and core processes to support the firm's strategy could not have existed without the support of computerised systems. In the next section, I elucidate on the vital role of ICT in enabling the organisation.

6.3 An overview of information and communication technology at UAG

The review of the UAG context points out that the organisation was large and complex, and at the same time innovative. There was this continual focus on developing new products, entering new markets, and adapting and complying with new legislation. Indeed, there was a major focus on growth through diversification and internationalisation. Not surprisingly, this fast pace of change coincided with a challenging environment for the IT department. Being an information intensive firm, IT held the key in terms of faster product lifecycles and greater service capacity, as a result of a rapidly growing member base.

The history of information and communication technology (ICT) at UAG dates back to 1992, when the organisation was founded. In the beginning, UAG used an outsourced ICT system from another administrator, but soon found that this system did not meet its needs. The organisation decided to develop its own ICT systems and has for the most part adopted a policy of in-house system development. Since ICT was becoming more and more integral to the organisation, UAG decided that it did not want this crucial function to be performed by outsiders. Moreover, this was influenced by previous negative experiences of working with consulting organisations who seldom delivered to UAG's requirements.

By the latter part of the 1990s, UAG's ICT systems had been built predominantly using Magic, a fourth-generation rapid-application language that allowed applications to be developed quickly and easily. For years its database had run on CI-SAM, which was a flat file database, as opposed to conventional relational databases normally associated with mature IT organisations. By no means a leading-edge database technology, CI-SAM, however, was perceived by the firm as being reliable. It was only just before the inception of e-HIC and the LAC business, in 1999, that the group had converted to the Oracle relational database management platform. Systems developed using Magic formed the core of the claims processes, and contribution management processes, as well as call-centre management applications.

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During the formative years, the IT department at UAG had earned the reputation of being a strong enabler of the overall success of the UAG organisation. The Magic developers in particular were known for delivering quickly and ensuring that the product development capability, which was viewed as a key competitive advantage of UAG, was appropriately supported by information technology. However, the rapid development of the systems using Magic meant that the architecture contained some notable flaws. The most significant among these were the flaws in the database design. Flat files were used to support parochial, application-specific logic, and as a result, disciplines such as entity-relationship modelling (ERM) were unfamiliar or dismissed.

In time, these flaws would create major challenges for diversifying to life products, building an online channel, and internationalisation. For instance, access control systems were based on internal user roles and credentials. For the website, identity and access control were more elaborate, because the site was accessible not just to the principal member of the scheme, but also to the spouse and children. The life policyholder and beneficiary make-up could also be complex. Roles management added complexity where the same health product member could own a life product and be a broker. Another example of a flaw pertains to JD Edwards (JDE); an enterprise resource planning (ERP) system module was being used for financial consolidations. It relied on flat file batch transfers for managing accounts receivable rather than seamless integration between the Magic-based systems. In fact, many of the core processes in the systems area were updated in batch mode. It would be a slow journey before the back-end systems would move to the real-time processing needed to support the front-end offering of an online channel. Furthermore, the somewhat proprietary nature of the system meant that it was not easily accessible to outside systems, such as the proposed new Internet-based self-service offering.

As alluded to in previous sections, one of the key challenges facing UAG's IT department was coping with the group's exponential membership growth. As the membership base expanded, so did the number of staff UAG needed to service these members. In turn, this meant that UAG's ICT systems became more complex, requiring more IT staff to service these systems and the growing community of internal users. By the end of 2000, UAG's internal IT department staff complement had risen to more than 120. Being an information-intensive industry, the UAG business began to rely more heavily on its ICT capability as the business continued to grow. During the period of the case study, estimates suggested that approximately 15% of the group's

operating costs (around 2.4% of revenue) were being allocated to IT spending. Not surprisingly, IT would eventually become a target for cost-cutting activities.

Meanwhile, since the growth in membership translated to greater service requirement, electronic services emerged as a possible solution to contain costs associated with growing service capacity. I review this initiative in the next section.

6.4 Case description: the implementation of an Internet-based self-service technology at UAG

6.4.1 Introduction

This section presents the empirical heart of the thesis. The data presented is drawn from the case study at UAG, which involved the implementation of an Internet-based self-service technology (SST). The data is presented in historical sequence. This starts with the demise of the information portal and the rise of the e-business. This is followed by a discussion on the integration of the e-business into the IT department, and the eventual disbanding of the e-business department by integrating it into the business and system functions, specifically the front-office applications. The reflections of the user community are interwoven into these discussions to describe the complex web of events. The section then closes with the current situation of the Internet-based self-service technology at UAG.

6.4.2 Phase 1: From information portal to e-business

In 1996, UAG began its innovative use of Internet technologies. The initial solution began with a hosted service delivering static content that was predominantly product focused. At the time, the portal team were mainly in collaboration with the brand managers from UAG's marketing services department. It soon emerged that the e-commerce channel could equally provide online services in the form of transactions to customers. A project was conceived in 1997 at a time that many other organisations began to explore the transactional potential of Internet technology. Called H-Link, the goal of the project was to provide real-time communication between its business partners, including intermediaries such as brokers and broker houses, employers,

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healthcare service providers and members. The solution was put together by an e-commerce consulting house, an Internet service provider (ISP) company, and a handful of UAG's IT staff.

UAG was facing tremendous growth at the time, and the challenge was to overcome the intensifying issues relating to managing massive amounts of paperwork, fending off fraud, and coping with exponential growth in customer demands. The choice facing the group at the time was to decide what proportion to invest in bricks and mortar and human resources, and what proportion on this new virtual environment. An online system had the potential to allow members to keep their personal records up to date, submit their claims, and constantly keep members in the communication loop through direct access to their own medical insurance information. It was also envisaged that intermediaries would be able to conduct their business online, and healthcare providers would be able to ascertain whether a claim had been received, and if payment had been effected. Furthermore, employers could monitor movement into and out of their company-administered medical aid. However, the approach was somewhat cautious, and the focus at the time was primarily on servicing the broker community. Although there was a member section and a provider section, it offered limited functionality, but was perceived to be well received by its small user base.

The business solutions director of the consulting firm was quoted in a special report in *InformationWeek*, Southern Africa, as saying at the time:

In doing so (using Web technologies), the company is leading an industry trend in closing the gap between itself and its clients, service providers and intermediaries while at the same time reducing the cost of service. (*InformationWeek*, July 1998)

According to the general manager, finance of UAG:

Apart from savings this brings HIC in terms of the efficiency of its administrative process, members enjoy the benefits of being able to interact with the company at any time they choose. (*InformationWeek*, July 1998)

Despite these accolades, towards 1998 the team were facing all sorts of challenges in attracting customers to come online. For one, owing to internal system constraints brought about by a batch processing mode of operating, they were using a day-old database to expose client core data, so the information provided was not real-time. Furthermore, the national e-commerce sector was not carrying enough bandwidth. At the same time, some of the processes required manual steps. For example, the online claims submission process had to be vetted manually by claims assessor staff before the data could be transferred to the database. Another major issue was security. One

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of the challenges was the type of security that was being used in South Africa. At the time, security aspects were rather primitive and, given the global threat on the open networks, moving over from 64-bit to 128-bit encryption was a critical requirement. H-Link used a digital certification system, with encryption and digital signatures. It also used a WebEDI solution developed by the consulting firm for the secure transfer of form-based confidential information over the Internet. Many users struggled to download this security software and to install it themselves. Over time, once 128-bit encryption became available as a standard offering in a browser, the uptake would improve rapidly.

The H-Link system was based completely on Microsoft technologies, and included IIS as the Web Server using Active Server Pages (ASP), which accessed a SQL server database of 13 GB, running on a multiprocessor machine. Meanwhile, the data between the Oracle database and SQL server database were kept in sync by a number of sync programs. By 1999, H-Link had 19 000 users, with approximately 18 000 members and around 1 000 brokers. Although small successes were acknowledged, given the extent of the problems they faced, H-Link was simply not making big enough inroads. With just over 5% of the member base having registered, H-Link was facing an uphill battle to justify commercial viability of the technology, never mind exposure. It occurred to some of the team members at the time that they had to come up with a proper strategy, and that this adaptive mode was clearly not working. Reflecting on this period, the operations manager made the following remark:

We hadn't had a deliberate corporate strategic intent to deliver e-commerce ... (Operations manager, interview 22, p 9)

The general optimism of the Internet at the time, and the competitive threat of a pure-play dotcom insurer usurping the healthcare insurance market, prompted the insurer to radically improve its online offerings. This was also done on the back of the relative success of the existing interactive H-Link site. To retain its first mover advantage in the industry UAG initiated the formation of eHIC, a pure-play dotcom.

The initial development of eHIC began in the latter part of 1999, when excitement about dotcoms was at its zenith. The conventional wisdom at the time was that every innovative company had to have a commercial operation on the Internet – that is a ‘dotcom play’. In those days, the Internet held aloft the promise of the ‘commercial revolution’. Proponents of the dotcom revolution – such as Debora Spar, an associate professor at Harvard Business School,

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and Jeffrey Bussgang, a director of transaction products at Open Market – made the following prediction in *Harvard Business Review* in May 1996:

The promise of a new world of business – a friction free arena where millions of buyers and sellers complete their transactions cheaply, instantaneously and anonymously... Cut free from layers of middlemen, companies will be able to sell their products directly to customers ... By bringing companies and customers together, the Internet thus promises to widen markets, increase efficiencies, and lower costs. (*Harvard Business Review*, May 1996:125)

IT research group Gartner made the following comment about this period:

... technology stocks were the toast of Wall Street, and companies could not plan their initial public offerings (IPO) quickly enough. (Blackmore, 2001)

In November 1999, the NASDAQ had shown extraordinary growth of more than 80% in just over four months. In South Africa dotcom enthusiasm was just as intense. The number of people subscribing to the Internet, although relatively small at 1.2 million people, had doubled every year between 1994 and 1998, when the Internet became commercially available in South Africa. A well-known South African commentator on the Internet, Arthur Goldstuck, estimated that South Africans would spend R2 billion online in 1999, double that of the previous year.

Some of the key players on the H-Link project were able to convince the executive committee to put together a budget process to enable UAG's first true real-time transactional facility, a strategy which would allow them to develop an e-commerce play.

On 10 May 2000, UAG formally announced the formation of its e-commerce subsidiary, known as eHIC. eHIC was to operate as a separate entity within the UAG stable with the purpose of delivering the e-commerce needs of the UAG Group, thus allowing the company to 'deliver better solutions more efficiently to the client base'.

The newly appointed head of eHIC made the following comment in a local press release:

I have no doubt that eHIC is destined for great success. We have an experienced and competent team in place comprising highly skilled resources from H-Link as well as new recruits. In addition, eHIC is in the strong position of being able to leverage off the strong and well-respected UAG name. This will give eHIC a good head start and should assist in accelerating the growth of our client base. (Press release, 10 May 2000).

The head of the e-business, who had spent seven years as a consultant in IT projects at major South African firms, was also the head of the e-commerce division of one of South Africa's most

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successful ISPs. During this time, he acted as a consultant to corporate clients, including UAG. He joined UAG in 1999 and engaged with selected staff members in the organisation for a period of three months to better understand the business processes and organisational environment. His main task was to formulate an e-commerce strategy. At the end of the process, he proposed to develop an Internet offering that would encompass two linked sites: a lifestyle portal and a UAG site that focused on particular communities or zones for members, employers, intermediaries and providers.

The lifestyle portal was conceptualised as a place where users could purchase UAG products as well as a range of sports, investment, travel, fitness and retail items. It would also offer directory services and insurance products. The lifestyle portal was justified on the basis that it would be self-sustainable via revenue streams earned by promoting and selling health and life insurance products, as well as from transaction fees for advertising and retail joint ventures.

In the same article, the CEO of UAG commented:

The key objective for the formation of eHIC is to dramatically improve efficiencies in the delivery of services and to continually increase levels of customer service which is in alignment with our overall strategy to effectively meet the ever increasing needs of our customers. (Press release, 10 May 2000)

eHIC was intended to offer full service over the Internet to better serve clients. Technology combined with specialist skills such as digital marketing, client relationship management and data analysis skills was to play a pivotal role in meeting the objectives of eHIC. He added:

The more we can enable our business to be electronic, the less the margin for error and the better we will be able to service our customer base. eHIC will have a key role to play in all aspects of our business. (Press release, 10 May 2000).

Towards this goal, the member zone was envisaged to present a wide range of services that were currently being offered via the call-centre channel. Some of the proposed features included online statements, travel bookings, product information, personal detail changes, hospital pre-authorisation, and claims tracking. Features conceived for the employer zone included a customised view of product profiles, billing and bill reconciliation services, and updates to employee records. The eNtermediary (intermediary) zone would seek to provide a quoting system for the organisation's life and health products, allow brokers to submit new applications,

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manage new leads, and track their commission. The newly appointed Head of eHIC concluded that:

We have been working on the business concept and on assembling the team for the last three months. The first major release of products and services will take place towards the end of the year. HIC was built through the efforts of entrepreneurial individuals over a short period of time. eHIC intends to follow this successful example and will implement the same core values integral to the success of HIC. We are confident that eHIC will be able to exploit the changes taking place in the corporate environment as a result of advance in electronic communication to the company's best advantage. (Press release, 10 May 2000)

The head of eHIC opted for an aggressive, big-bang approach, as opposed to a small iterative approach for the implementation strategy. He also proposed that the new venture be structured as a separate division that reported directly to the board. This was conventional wisdom at the time.

Clayton M Christensen (2000), Harvard Business School professor and author of *The Innovator's Dilemma*, offered the following advice to organisations:

As long as the Internet business unit is part of an existing organization – particularly if the Internet is disruptive to that organization's processes and values, the resulting Internet business will be a 'cram job'. Formation of a separate subsidiary to pursue an Internet venture often frees managers to maximize their use of the unique attributes of the Internet to capture business.

Similarly, the head of eHIC was concerned that if the new venture was to be housed within the IT department of a large organisation such as UAG, the e-commerce start-up would be restricted to a support role, instead of transforming the business. After all, this was something this new paradigm had promised. Apart from this, he wanted to attract and retain the best staff, and believed that the idea of joining a dotcom start-up with the prospect of share options was a more enticing proposition.

Reporting directly to the board would provide a rational basis for decision making. In addition, the start-up could be driven by profitability from the outset. His intention was for the venture to function in an entrepreneurial mode, without the bureaucracy of a large organisation, which he assumed would speed up delivery and at the same time drive down delivery costs. This sense is reflected by a comment made by one of the original members of the team:

He had a bold vision for the potential for UAG's Internet platform. In a year he wanted grow the team to 40 plus members. He wanted to create a silicon valley start-up environment with a chill-room, bar, pool table, flexi-hours ... to attract the best and brightest young IT minds in the industry. He wanted new technologies, a dedicated graphics team, news feeds from 3rd party providers ... in fact there was even talk about eHIC spinning off as an independent

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subsidiary of UAG – generating its own revenues and profits!! (Senior business analyst, interview 51, p 1)

A number of executives expressed a level of apprehension about the merits of eHIC operating as a separate entity. First, there were those who were sceptical about whether eHIC could succeed without closer engagement with UAG's IT and business departments. Linked to this were specific concerns that incentives would be misaligned in the IT area if the dotcom start-up was conceived separately. In the second place, others in opposition did not believe that UAG's health and life products could be sold over the Internet. For these detractors, face-to-face contact via financial intermediaries had been the hallmark of UAG's success thus far, and was essential in selling financial products. Indeed, many at the time felt that the role of the Internet should be limited to services only.

Despite a certain amount of scepticism among the executive committee, the CEO was convinced both by the prevailing optimism for the Internet at the time and by the bold proposal delivered by the newly appointed head of e-commerce initiative.

After all, there was this potential to create a unique competitive advantage for the business through the Internet channel, which no one else had done in the health insurance industry. There was the enticement of offering full servicing through the Internet – linking up all aspects of the various communities into a single integrated platform. In addition, the self-servicing aspects had the potential to reduce call-centre servicing costs significantly. These were becoming more of an overhead as the membership base grew. And if things went really well, the firm could sell its products through the Internet and recover some of the brokerage costs (according to rumours, the talk behind closed doors, but never discussed openly, was the possibility of 'disintermediation', that is, 'cutting out the middle man'). There was also the threat of a competitor making this move first.

Meanwhile, there was an immediate drive to establish a team and find premises for the start-up. Key elements in the culture that the head of e-commerce wished to inculcate were innovation and entrepreneurship. Recruitment began at a tremendous pace and many people were drawn to the vision of 'building the best website in the country'. The software developers in particular were excited about working with the latest and most sophisticated technology. What started as a

staff complement of six in February 2000 grew in eight months to more than 50. All of them were young. The head of e-commerce at only 32 was among the oldest.

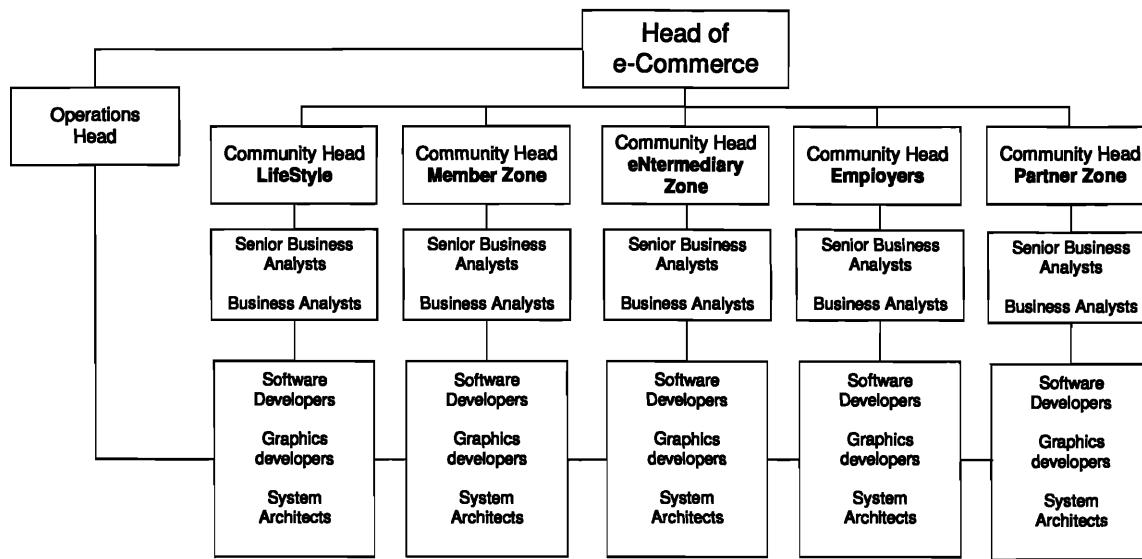


Figure 6.6 eHIC's organisational structure (2000)

The activities in the project team were structured according to the website, a Lifestyle portal community, an eNtermediary (for Intermediary) Zone, a Partner Zone, a Member Zone and an Employer Zone (see figure 6.6). There was also a special projects team that were responsible for larger site processes for all five zones, such as research and development, registration, search and document management. These teams, led by community heads, were composed of business analysts, architects and developers. Business analysts were responsible for establishing requirements from the business units and specified the system for the development team. The development team was headed up by an operations manager. By this time, the small development team responsible for H-Link had been seconded to eHIC. There was also a head architect, who was responsible for the overall technical design of the website and identification of the technologies to achieve the required functionality. Typically, business analysts would give their specifications to the architect, who was responsible for defining the system and assigning software, and HTML graphics developers to code the system. Early on, a distinction had been made between Java developers and graphics developers. Graphics developers had specific skills in HTML and Java Scripting to code the user interface logic, whereas Java developers coded the software application logic and the interfaces with the front-end and back-end systems.

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The team had a ‘just do it’ philosophy, keener on getting results than following the processes defined by the parent organisation. The software development approach was one of fast iterative development. The mindset was to get the application out quickly and ‘fix it later’ if it was not perfect. The priority at the time was maintaining the confidence of the board by delivering promptly. The leadership team of the e-commerce initiative wanted to show that, with the right culture, it was possible to implement a groundbreaking system quickly.

Weekly meetings were chaired by the head of eHIC with the community heads and operations manager to monitor progress of the project, which had to be reported monthly to the UAG board. The weekly progress meetings were essential to the process of dealing with issues expediently. Moreover, a complex incentive scheme was developed in an attempt to award incentives objectively by linking them to elaborate performance criteria to drive delivery. Aside from financial rewards, high performers were offered weekends away as prizes for completing a milestone. A large space was set aside as a ‘chill room’, complete with pinball machine, pool table and coffee and cappuccino machines. At the same time, a significant investment was made on acquiring current best-of-breed Internet tools.

However, the initiative was hampered by difficulties from the outset. The first challenge was using a fairly novel Web application server technology, in the form of Dynamo. The team were attempting to develop the system on a technology that was not well understood locally, not even by the local system integrator, who had sold the product. To alleviate the problem, the head of operations decided to bypass the local vendor and set up a direct link with the international supplier, although this did not improve the situation much. Furthermore, it was becoming very difficult to find developers who were competent in Java. At the time Java was a fairly new software development language that many believed was the best software for Internet development, even though it was relatively new and untested. Meanwhile, very few people in South Africa had received Java training. Those who had were being lured away by countries that were able to remunerate them in a stronger foreign currency and could offer a more stable lifestyle. At the time, the South African rand was performing erratically, and many skilled South Africans were still uncertain about the outcomes of the new political dispensation. Similarly there was a lack of skills in applying Documentum, a document management system, and Verity, a search engine tool.

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To add to this, the team had to endure many integration issues with the architecture built around the Magic development environment. Web technology was making significant demands on UAG's legacy systems. For example, the CORBA standard, which was not compatible with the Magic environment, made integration challenging. CORBA (Common Object Request Broker Architecture) is the middleware standard that was used to support interactions between the various systems via Enterprise Java Beans (EJB). Workarounds had to be written with the aid of Magic developers sourced from Israel to resolve the problem. However, these workarounds came with certain inefficiencies, which translated into poor site performance in an already poor connectivity context.

Furthermore, eHIC wanted to enable real-time, online functionality such as online travel booking, updating client details, claims submission and new-application submissions. Until then, the systems had been developed for batch-mode processes, and access to these systems was restricted to internal staff. The legacy systems were simply not designed to expose these applications to a host of external Web users. Their cause was not helped when the IT department took exception to the attitude displayed towards them by eHIC developers, who regarded Magic as 'antiquated technology'. The problem of working with the traditional systems department was articulated by a community head I had interviewed:

UAG was and always has been a mess of technology types, especially in the development environment. A lot of these were not industry standard type of products such as Magic and so had a very particular type of developer and mindset associated with it. With H-World we very much tried to follow the industry standards and use what at that stage would have been best of breed technology offerings which we did but not without huge and consistent resistance from other key players ... (Community head, interview 49, p 3)

There was clearly a feeling of tribalism based on which system one was affiliated to. Magic developers resented the attitude of the Java developers, particularly as the system they had developed was working fairly well within UAG. They saw eHIC staff as the interlopers, the 'favourite children' of the executive team, and were hostile to the view that eHIC had a 'monopoly on innovation'. In fact, the relationship between eHIC and UAG in general was troubled. There was this perception that eHIC's development approach was more informal, and this did not augur particularly well for the more structured LAC business unit at UAG. They were familiar with developers who used a more conventional systems development lifecycle and found the 'looser' approach frustrating. In fact, eHIC did not even attend the corporate functions hosted by the traditional systems team.

Meanwhile, there was reluctance on the part of business to change business practices to fit the demands of the new technology. eHIC challenged the traditional ways UAG had conducted business. For one, UAG's operations were divided functionally. For instance, the individuals and systems that dealt with new applications and commissions were different and did not regularly interface with each other. Furthermore, there were different call-centre numbers for the different communities and types of queries, which meant that call-centre staff specialised in a particular area of expertise. However, eHIC was appealing for a more integrated approach, where tracking of new applications and commissions were integrated and where one call-centre agent would be able to respond to any customer query. The 'integrated, online, real-time' concept to which eHIC wanted to operate was foreign to the staff at UAG. The way the online channel wanted to offer services to customers brought it into conflict with the way in which UAG had architected the same services for the other channels. Moreover, because each strategic business unit (SBU) had developed its systems in silos, it very often had different identifiers for the same customer, whereas eHIC was attempting to demonstrate 'a single view of the customer'. After all, it was possible that the same customer was tied to all the SBUs, and to the myriad of product offerings. Indeed, it was possible for a customer to be a broker and a healthcare provider.

It was also becoming apparent that although there was sufficient lobbying with the executive team, there was insufficient company-wide support across the organisational levels. Indeed, among many of the business staff there was a widely held view that those at eHIC were a bunch of 'arrogant upstarts', 'chasing an unworkable ideal' and placing 'unreasonable demands' on the business. In fact, there was a time that LAC complicated matters a bit by insisting on having autonomy over their own enterprise systems. They had even threatened to implement their own website. Furthermore, the marketing services team felt isolated from the development process and were uncertain as to how they fitted into the online environment. During H-Link, marketing services had worked directly with the contracting graphic designers; now they had to work with eHIC graphic designers. Furthermore they felt 'roped' into projects, as there was a lack of processes that defined the rules of engagement. In addition, there was generally a constant struggle for attention from the systems and business areas. After all, both business and systems were already constrained by a chaotic and an overextended operational environment brought about by a rapidly growing customer base and by new product development priorities.

All these issues culminated in the project progressing painfully more slowly than expectations. Although the planned launch of the eNtermediary zone was for October, it was launched only at the end of November 2000. To add to the growing consternation, it was slow and difficult to use. UAG staff and brokers were not impressed. The views of two users sum up the feelings of many of the users shortly after the launch:

Speed it up!!!!!!!!!!!!!! ... Check that all the links work. Hlink was great – this site has a long way to go in terms of ease of use and speed! (Online feedback, June 2001, line 89)

I am getting a lot of unavailable pages. I cannot get previous claim statements ... my registration crashed numerous times and I had to phone ... to activate. I get the sense this is a beta site? (Online feedback, June 2001, line 74)

To add to this, business connectivity levels were very poor and consumer broadband almost non-existent. For example, at the time 80% of the brokers did not even have dial-up facilities. Nevertheless, the mood among the team was vibrant: a lot of youngsters, a flat structure, and an attitude of getting the job done. But despite working hard to deliver with numerous late nights and great team spirit, it soon became clear that the rest of the site would not be ready by the end of December 2000. This created a huge amount of pressure, especially since commitments had already been made in press releases. Announcements were also made by the CEO to UAG's stakeholders at partner forums, and there was even mention of the planned eHIC launch in the annual report to the shareholders.

It would soon emerge that the online channel was more a channel for the UAG business, rather than a separate business that would service the same community in a radically different way.

6.4.3 Phase 2: From e-business to e-department

When dotcoms started to falter worldwide in the middle of 2000, it became increasingly difficult for eHIC to defend its position as the 'elite' business unit. In the face of increasing internal opposition, its position was made weaker because it had grossly underestimated the size and complexity of the initial project, both in terms of the depth and functionality required and the practicality of delivering it. At the executive committee meetings the head of eHIC was finding it very difficult to justify the R1 million rand budget per month he had been allocated. The following remark give a sense of the dissatisfaction directed at the e-commerce head at the time:

'You are mad' they would tell him when he asked for more time or more staff. 'You have got 60 people working for you! What do you do all day – play pool?' (Head of e-commerce, interview 36, p 7)

Upon reflection it was acknowledged by the executive committee that certain structural changes had to be made. There was still a belief that eHIC could provide the group with value adding functionality. The paper savings on the provision of electronic statements to members alone was sufficient to justify the existence of the e-business arm, although this project had not been initiated. Furthermore, there was significant value in the online services provided for brokers even if the site was poorly constructed and difficult to use. The executive committee also knew that the R12 million rand budget from the start – although a significant investment – was small in comparison with other e-commerce sites, such as those developed by one or two of the local banks at the time. They were rumoured to be spending as much as R80 million.

Nevertheless, eHIC did deliver on the eNtermediary Zone, despite brokers and internal staff members not fully approving of it. The challenge facing the executive team at the time was to ensure that there were tangible benefits for the business and to find resolution to the problems that had emerged during implementation. There had been high expectations of HIC when it started out, but 'the devil seemed to be in the implementation'. It was only seven months later, in June 2001, that the rest of the envisaged site offering – which included the other four zones – went live. Key members of the team were interviewed about the late delivery by the IT executive committee (exco), and the predominant view was that dependency on the internal systems had been severely underestimated.

Shortly after the launch of the MemberZone, the world was hit by the dotcom crash. Silicon Valley companies came crashing down around the globe. UAG senior management expediently absorbed eHIC back into the business. No more 'chill room', no more fringe benefits. The staff of eHIC were now working for a financial services company and were integrated into the IT department. This move contributed to a number of changes. Most importantly, the development team had to conform with some of the corporate systems standards. For example, they had to capture their time against each project. Furthermore, they had to subscribe to the project templates developed by the corporate environment.

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eHIC was integrated into the business and was now operating as one of the several functional areas of the IT department. This relegation to an e-commerce department also meant a physical move from their address into the same premises as the rest of IT. However, the team members' reporting lines stayed the same and by occupying the same floor space, their identity – though under threat – was still intact to a degree. Furthermore, funding was fairly accessible, with the budget growing to over R20 million per annum. Meanwhile, instead of reporting to the board, eHIC reported to the IT exco for capital and funding requirements.



Photo 6.3 The office space structure at HIC¹¹

Despite moving closer to the traditional systems team, HIC was still treated as a foreigner. There was generally better cohesion and communication between marketing services and eHIC with more formal structures like formal bi-weekly meetings being established. But there were still inconsistencies in how communication prepared for other mediums or channels was to be tailored to the online world. In adapting content for the Web, marketing often accused eHIC of being too techno-centric, while eHIC viewed marketing services as being territorial about the company's brand. Many business staff felt that despite the change, eHIC still maintained a superior attitude and a dismissive and arrogant culture. Ever since losing its credibility, HIC had been fighting for its legitimacy.

¹¹ In some ways a modern day panopticon (all-seeing), the development teams were housed in open-plan offices, separated by cubicles, while senior management were housed in individual offices with a solid wooden door and the rest of their office surrounded by transparent glass, normally overlooking their team's working area. Senior business analysts and architects had their own designated cubicles, while the 'junior' members of the development team shared a cubicle. The structure of the office arrangements signified the order of power relations among the team members.

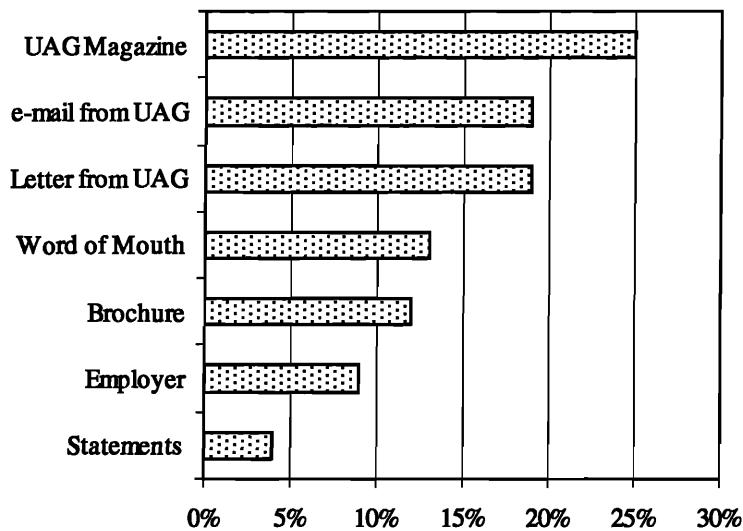


Figure 6.7 eHIC awareness levels by media type

Source: Markinor Research (n=307)

The launch of eHIC was followed by a very effective marketing campaign. The website was promoted in various mediums. It was endorsed in the HIC Fact File, which was a booklet that principal members received annually to explain how their health plan worked. It was also advertised in the UAG magazine. When compared with the various awareness mediums, the UAG magazine appeared to be the most effective in advertising the online channel (see figure 6.7). The magazine consistently featured articles explaining the benefits of the new website to the members. Paper statements also referred to the URL of the website. Other avenues for promoting the website were the employers, brokers and the call centre agents. During the build up to the launch, an email collection campaign also ensued. These emails were to become a vital component of the email promotion campaign and for subsequent online promotions.

Meanwhile, the central theme that was disseminated to attract members informed them that the website provided access to ‘reliable health and lifestyle information’ and enhanced the service they were receiving from UAG. The idea was to manifest the company’s vision of ‘improving people’s health and enhancing their lifestyles’ in an online environment. The benefits sold to potential users at the time included the convenience of the online service. The marketing messages at the time also compared the more traditional vehicles of communication with this new form of electronic communication which was ‘immediate and was not bound to office

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hours'.¹² Furthermore, there was emphasis on how accessing personal data relating to plan benefits and general health and lifestyle information would enable members to make more informed choices about their health.

During this period, some of the key functionalities that were provided online included claims submissions, claims status tracking and viewing medical savings account balances to enable members to manage their health-plan finances. On the lifestyle segment, users were able to plan and book their hotel accommodation, flights and car hire online. Furthermore, there was specific information to help with pregnancy and access to health and medical information; and accredited information on a vast number of medical conditions and diseases. The site also offered a variety of useful tools and content for members to ensure that they stay healthy. One such tool was a health-risk appraisal which members could complete online. These tools were often complemented with advice from authorities. Apart from this, there was comprehensive information on all aspects of HIC's products. There was also a belief that H-World could act as a portal for its members. Hence, other features on the site included news feeds from third-party content providers, weather reports, and financial indicators and so on. There was even an initiative that offered cheap Internet connection and email boxes via the WSC offering, although this never really gained traction. Meanwhile, there was a deliberate strategy that brokers would be the preferred sales channel, so there were no attempts to sell health and life products online.

Despite bandwidth constraints, some of the avid users offered praises for the online service as the following extract indicates:

Try speeding things up, we use an ISDN line and sometimes it can be a bit slow, other than that it is the most brilliant website ever. Congratulations!!! ([Online feedback, June 2001, line 106])

Over a short period of time, H-World had a critical mass of functionality and a significant amount of users interacting online. Eventually, given the high occurrence of site-related queries, the eHIC management team recognised that the website needed the support of a dedicated call centre. The following user feedback captures the frustration with which some users experienced the support service in the early stages:

I think that one huge way to improve the site would be sticking to the promise that someone

¹² Advertising in the member magazine.

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might actually call me within 24 hours would be a start. I registered on Thursday afternoon. Now Tuesday morning. Nothing heard from you guys yet ... (Online feedback, June 2001, line 84)

While the initial thoughts were that it would be a ‘technical support’ call centre only, over time it emerged that not only did it require that these call-centre consultants speak multiple languages, know the products well and understand technology, but they also had to be able to respond to written communication. The consultants supporting the online channel were ‘super agents’, compared with the agents supporting the other call centres. And of course, along with the call centre, came new access rights into the online system and an ability to ‘see what the customer sees online’. Meanwhile, many ‘teething’ problems and bugs were associated with this embryonic service. A business analyst described the situation:

A lot of the time I was receiving queries from the call centre ... and it was a continual cycle of fix, redesign, develop, fix, redesign, develop, fix ... we had a lot of that going on. (Business analyst, interview 47, p 3)

Now and then a key functionality had to be removed from the website. One such example that created a lot of controversy was the online claim submissions feature. The claims submission application was very unstable. Apart from this, it was being abused by some users as a few incidents of fraudulent claims were being submitted. Furthermore, it was adding complexity to the claims adjudication process at the back-end for those claims which had to be manually vetted. Moreover, a number of users found it difficult to use. For instance, members frequently entered incorrect tariff codes and the front-end, which was disconnected from the complex back-end processing, was not designed to validate the entries processed. As alluded to earlier, these complex validation rules were the domain of the back-end systems to which no interface existed.

Your claims submission facility in particular is a disaster. Don't you have any professional internet application systems designers at HIC. Your whole website is too ambitious, too slow and riddled with errors. (Online feedback, August 2001, line 363)

Incorrect submissions had to be validated by the claims operations team manually. The claims team naturally showed great resistance, because they foresaw the online claim application creating more risk and a greater staff overhead. With the support of the auditors, the claims operations team demanded that the application be removed. Many users expressed great disappointment when the functionality was discontinued in early 2002.

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I am extremely disappointed that you have discontinued your online claims submission. It would be easy to emphasise that people must find out codes before submitting a claim, if they are not on the invoice, and make that field compulsory. Come on, guys, surely there are better solutions than stopping a useful service! (Online feedback, March 2002, line 1215)

As opposed to health-plan-specific transactions, it was the innovation in the Wellness program that provided all sorts of opportunities to utilise the online medium. WSC provided members with access to selected health and fitness facilities, and created strong incentives to use them. Members were being persuaded to earn points to improve their wellness status. The greater the status, the more enhanced the access to benefits, such as discounted travel and leisure prices. Members could also earn points by interacting with the online channel. It was specifically the ability to reap rewards from certain behaviour, and going online to gather those rewards, such as flights online and so forth, that led to a significant increase in the number of online interactions that one would not associate with a typical medical aid company.

On the back of the WSC success in 2002, the channel grew very quickly to more than 105 000 registered users. One of the successes promoted internally at the time was the reduction to the number of support staff who were servicing flight bookings. Up to 40% of flight and hotel bookings were being done online, so there was the matter of perceived cost savings. These, among other savings, were reflected in eHIC's income statement and formed the basis for the team's incentives and how eHIC 'justified its existence'. Over time, there would be demand from the WSC business for 'softer' applications like the Nutrition Centre and the Interactive Stress Centre.

The Nutrition Centre was conceived in 2002. The objective was to provide an online mechanism that promoted healthy eating habits among WSC's members. The design process was managed by a wellness nutrition panel, which was composed of dieticians, clinicians and nutrition academics. There was a huge emphasis on designing the tool with a strong scientific basis. Despite this, there were different opinions among the panel members about certain aspects, such as the fibre content of a healthy diet, and so on. It occurred to the panel that providing a meal planner for a user was a complicated task. User inputs were required for gender, activity, height, weight, waist, and blood type, among other reasons. The tool also had to rely on the self-reported measurements of the user to establish the effectiveness of the proposed diet. The tool took longer to construct than anticipated. There was this constant 'fighting' for developer resources. The dietitian driving the process at the time had to become familiar with the new terminology when

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dealing with the development team. There was this unfamiliarity in being exposed to the requirements and the testing process, not to mention the maintenance process that would arise over time. To stimulate online behaviour, the tool was designed with wellness points-earning capacity. There appeared to be genuine interest for the application when it was released to the user community.

Despite enormous issues with site performance, some of it related to external reasons, the user base started to grow rapidly on the back of the exposure the site had received from the WSC promotions.

Meanwhile, as the site and the number of interactions grew, site maintenance became a major challenge. Business analysts, apart from working on projects, had to work with the call-centre agents to resolve queries. These events are reflected in concerns raised by a user as he or she struggled with using some of the online features:

... I tried to get on to the wellness statement, but it told me to log on first, I then tried to log on again, but it doesn't do anything. I don't know if what I'm using to log on is correct because when I tried to register, it told me I was already registered? Please advise. I also tried to do the online fitness assessment, but it wouldn't go through. It takes a rather long time to do. Is there another alternative, or is the site just temporarily down? (Online feedback, February 2002, line 792)

Eventually more than 75 staff members were working for the e-commerce department. Even with the increase in staff, the high maintenance levels persisted. Reasons included the duplication of rules and the use of store procedures to query databases. When changes were made by the back-end systems team without adequate communication, this often created queries in the online environment. The high maintenance levels were also attributed to lack of alignment between the online team and the systems team.

... in terms of maintenance, the back-end had become a problem. And we were already users of the back-end tables and whenever the back-end system changed without informing eHIC really, then things would break ... (Architect, interview 43, p 3)

Very often projects were prioritised differently and hence the misalignment. Furthermore, given the disparities between the online channel and the traditional systems environment, a number of processes still had manual steps. For example, when a member updated certain details online,

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these had to be manually vetted by an administrator. Instead of streamlining processes, the online services had the effect of creating more work for the administrators.

Meanwhile, while huge progress was made in obtaining Java skills, the team were still getting to grips with Dynamo Application Server. More specifically, it was still battling to come to terms with more enhanced features of the Dynamo suite. Dynamo also consisted of Commerce Server, Scenario Server and Dynamo Personalisation Server. Instead of using features that were already available in this technology, the team normally developed workarounds to compensate for their lack of knowledge, to cope with the perceived bugs within the Dynamo application suite, but mainly to deliver quickly to market. Dynamo offered some very powerful personalisation features, one of the main selling points of the product and probably the clincher in the decision to acquire the technology. Unfortunately the team found that personalisation was extremely complex to implement. The vision of personalisation was to pre-empt what members could see on the website, based on certain events. The site could then respond intelligently according to whether the user was coming online because she for instance had just submitted a claim or had been attending a gym. Furthermore, personalisation could be used for cross-selling and up-selling by targeting certain products to the member, based on existing member and product profiles.

In 2003, there was a strong focus on emailing electronic statements. The collection of email via new business application forms over the years and a series of email collection campaigns had created the critical mass that easily justified the project. Furthermore, the pay-back was clear, at least on the face of it. Delivering electronic statements directly to members with no postage costs and at minuscule cost per statement, not to mention the benefit of being a more responsive communication mechanism compared with snail mail, made business sense. The project team at the time evaluated several bulk email providers who back then typically charged about 20c an email. But after a brisk evaluation, it was decided that it made more sense to develop the technology in-house. It took four months to develop the email notification engine which, apart from sending electronic statements, was to be an important mechanism to promote the company, the company's products, the website and even specific website features. Meanwhile, the cellphone industry in South Africa was growing rapidly and it soon emerged that HIC's members had a high incidence of cellphone numbers. Very soon, the electronic notification solution was

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extended to offer integrated SMS delivery, where members received notifications of claims status to their cellphones. Predictably, members who used the electronic channel as a preferred communication mechanism for receiving statements and notifications were rewarded with wellness points. Members could also activate and manage their electronic subscriptions online.

With over 70% of members with email addresses, the offering would become an important component of the perceived cost-saving aspect. Combining the different service types, more than a million emails were being sent to members monthly. However, email bounce rates were very high, ranging between 15 and 20%. Most of these problems were linked to data integrity and system problems. It appeared that a significant number of errors in the capturing of emails occurred when brokers were completing the new business application forms on behalf of the member, and when the data was captured into the system. Another challenge was that a significant proportion of the new business applicants left the email address column vacant on the form. Furthermore, about 0.3% of replies were being received as a direct result of email correspondence. Despite the minuscule proportion of email replies to email sent, added pressure was exerted on the traditional call-centre channels. Furthermore, given the instantaneous effect of email compared with snail mail, the call intensity patterns increased substantially.

The political climate was no less intense. In the latest battle a debate ensued over where the electronic communications capability should lie. On reflecting on the political climate at the time, one of the management team members said:

... as would be expected a lot of politics driven mainly by individuals and personalities who felt threatened from marketing through to the traditional technology IT guys. This took a lot of work and effort to get them just to work with us. I don't think we ever got them to like us though! (Community head, interview 49, p 3)

Eventually, the ‘notification team’ had to report to the corporate systems environment, since it was believed by certain parties that communications should be a corporate systems responsibility rather than an e-commerce one.

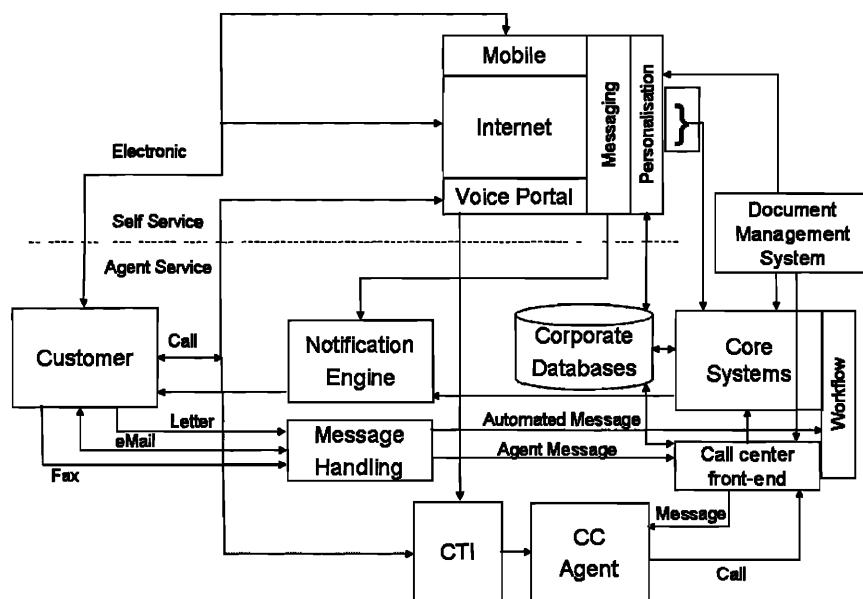


Figure 6.8 UAG's servicing architecture – An integrated channel perspective

Source: 2003 eHIC strategy presentation

Meanwhile, there was a review of the architecture to extend the self-servicing philosophy to include voice technologies (see figure 6.9). There was the school of thought that some of the less complex transactions were better suited to the cellphone, and that the organisation could leverage off its current ability to deliver personalised content to this channel. For example, a broker could now make a voice request to UAG to track his or her new business applications, or a member could use voice to set up a flight booking, using voice-driven predefined menus and options, without the assistant of a call-centre agent.

There were obviously many synergies between the envisaged voice portal, the Web portal and the mobile platform. The business case was justified on the grounds that more of UAG's customers had access to a cellphone than to email or the Internet. Additionally, the initiative had the potential to reduce calls to the call centre and therefore presented a cost-saving opportunity for UAG. Moreover, this new channel was aligned to the 'self-service mentality' of eHIC. It was believed that since Voice XML (VXML) relied on webpages, it could also leverage off current developments, and therefore offer very quick time to market. A team was formed to briefly assess the viability and acceptance of speech recognition technologies and voice Web software. After being given the blessing of the IT executive committee, a couple of projects were piloted. This software was based on the 'South African English language' and the text-to-speech vocaliser was based on the voice of a 'UK English male'.

There were a number of practical challenges facing the implementation of VXML that would soon emerge. Probably the main issue was around voice recognition. Many users experienced difficulty in engaging with a predefined dialogue which sounded impersonal. More importantly though, the VXML system itself battled to recognise the many English dialects spoken in the South African context, and many users were frustrated at having to repeat answers to this ‘machine’. In the beginning, the measures of calls dropped, and call transfers to a call-centre agent for VXML-based services were very high. Many users opted to be transferred to a call centre instead of using the advanced speech recognition technology. However, the technology did show limited success for routine, mundane services such as reading out a user’s MSA balance.

Over the six-year period, there were a number of attempts to improve the speed and navigation of the website. As the number of communities and services grew online, so did the complexity of accommodating the numerous pieces of functionality. An evaluation after the latest redesign found that the general feeling across users was that the site was often offline, ‘unavailable’ or ‘very slow’. Users often complained about this, indicating that in most cases, it had been during peak hours and that at these times they had occasionally experienced trouble with logging on to the site. Incidences such as these led to users logging on to H-World in ‘off peak’ times, which they felt was eroding their leisure time. The feedback from this user sums up some of the concerns expressed by users:

... I find this site incredibly difficult to navigate. Even when I do eventually find the thing I'm looking for, I have to start from scratch next time because I've taken so many detours to get there. (Online feedback, January 2003, line 2575)

Similarly, several users mentioned that H-World was very slow in loading certain pages. Other users felt that it took too long to find the required information on H-World, either because they do not know where to look for this information, or because the process of finding the information required the user to navigate through too many pages and levels. Certain users stated that they frequently felt lost while navigating H-World. Perceptions at focus group workshops for example were that H-World was not ‘user friendly’ or intuitive partly influenced future redesign initiatives.¹³

¹³ User validation workshop findings for H-World (July/August 2003).

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In the latter part of 2003, there was a major redesign attempt to improve the speed of the website, and to give certain key functionality more prominence. There was also a move towards enforcing page standards, so that future projects would ensure that site was less cluttered. In addition, there was a need to give the website a new fresh look to complement and align to the organisation's new branding. Commenting on the existing layout, a new member of the graphics team stated:

... like the navigation structure on the old Website. Everything on the left hand navigation they duplicated and put it into the same page. We had a page with a thousand links on it. Now, the more links the better, the bigger, the bolder, and everyone will pay attention. This breaks from my experience. It is just a recipe for disaster to keep the user confused ...
(Graphics developer, interview 26, p 3)

During these periods, there was always tension between the marketing services department and the eHIC Team. Sometimes protecting the brand was at odds with designing the user interface to facilitate ease of use. Frustration was expressed by the eHIC team when new products were featured on the radio or TV advertisements without a reference to the website address. Some speculated that this constant tension found its origins during the initiation of the website, when there was this subtle threat that with the advent of the website, print marketing was to become non-existent.

Another major initiative during the redesign was the optimisation of the registration process. The registration process used to take three or four days, as it required internal validation before site access was granted. This posed a huge problem from a servicing perspective. By the time a user was registered, she or he would have obviously called the call centre about the servicing requirement that prompted the need to register, as articulated by this frustrated user.

Registration takes too much time!!!!!! I was sent an access code in November that had expired by the time I tried to use it. However the email containing the access code never mentioned this detail. Once I have the access code I register and fill in a form that asks a lot of unnecessary detail and then I get phoned to confirm within 24 Hours (I can fly to London and back in this time!) Now I may use the site and get Wellness Points, I would rather have a prostrate exam!! I can get on to my banking site with less hassles!!!! If I ran my sites like this I would be bankrupt!!! (Online feedback, October 2003, line 2653)

So the registration process was totally inefficient because it was constrained by internal auditing requirements to minimise the risk of fraud and misuse of identity. Related to this, the primary reason for calls to the eHIC call centre was 'forgotten password'. The same constraints were experienced by the many users who had forgotten their passwords.

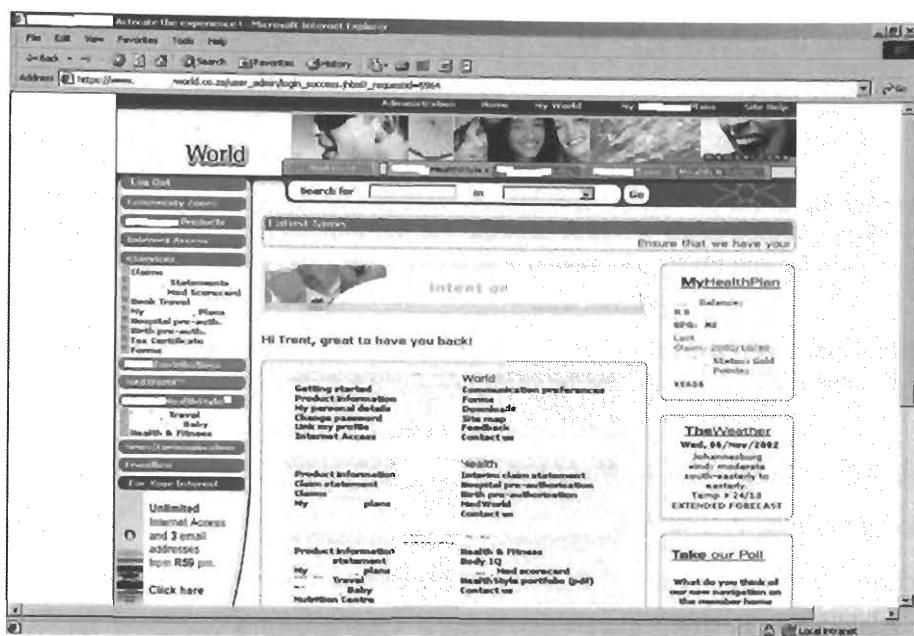


Figure 6.9 eHIC's landing page (2003 website redesign)

Source: eHIC¹⁴

However, the new registration process implemented during redesign meant that a user could get almost immediate access to the website. The new process relied on other identifiers of the user, such as an email address or cellphone number. Based on a validation rule of either the cellphone number or email address, the PIN details were sent via SMS or by email, and the user received almost instant access. These improvements were extended to users who forgot their passwords.

Almost 670 000 calls were made to the call centre in the month of October 2003 alone. This was accompanied by 202 600 logins to eHIC. This implies that more than 25% of all interactions with UAG were now through the online channel. The goal was to move the interactions to 51%, as this would imply in some circles that the Web was now the dominant channel. Despite this, only 26% of the membership base had registered. And even though there were major site redesigns as part of the valiant effort to move this ratio to 40%, the ratio of active registered members would hover around the 25% mark for the next two years. Further analysis revealed that many of the 25% had a higher servicing need.¹⁵ These users tended to be either high claimers or loyal followers of the Wellness programme. Nevertheless, although the loyal user

¹⁴ Because of the sensitive nature of the information, all names have been fictionalised or omitted.

¹⁵ Internal customer intelligence report (2004).

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base – consisting of 25% – represented a minority of the member base, they continued to express positive views about the online service. Two of the users expressed their satisfaction with the website:

... You have included everything and more in your site, I enjoy visiting all the info you have especially the health articles. Keep up the fantastic work – I am definitely a proud member of your extremely well run company ... (Online feedback, July 2003, line 3574)

... Thanks for an excellent site! What a pleasure to browse the site. The content, the speed, the layout, etc. are well planned and executed. (Online feedback, July 2003, line 3747)

In 2004 significant energy was dedicated to enhancing WSC's scientific foundations and to making wellness even more accessible to their 1.2 million members. A number of new initiatives were to occur via the online channel. Based on the perceived success of the Nutrition Centre, a place for members to manage their diet online, an interactive Online Stress Centre was conceived, where members could determine and manage their stress levels. According to the promotion in the UAG Magazine:

... the centre will offer scientific information and an integrated holistic programme to help cope with the stresses of modern life ... (UAG Summer, 2004, p. 53)

The objective of this site was to provide the user with reports and feedback about his or her condition. Another objective was to reduce visits to primary healthcare facilities for those ailments that are stress related. Even further, there was the aim of reducing the long-term risk factors associated with chronic illnesses. Users were provided with tools and techniques to manage their stress levels and increase their sense of wellbeing.

Indeed, following both programmes would enable the user to earn wellness points. However, the usage for these features was relatively low. For example, the Nutrition Centre received fewer than 2 000 logins weekly, compared with travel availability checks, which were in the region of 10 000 logins per week. Furthermore, despite extensive promotions, less than 10% of the online user base opted to use these features. For those that logged in, there was growing evidence that the majority were ‘points chasers’ who were attempting to upgrade their Wellness status by exploiting the online channel, instead of making behavioural changes to their lifestyle. Over time the school of thought that would prevail was that healthcare issues such as stress and nutrition are personal and require a high degree of empathy from a person.

Despite targeting their products at predominantly the affluent market, Internet accessibility among UAG's clients was for most South African firms a major barrier. This Markinor study conducted in 2003 demonstrates that only 35% of the members in the sample (n=600) had access to the Internet at work, 12% at home, 21% both home and work, and a significant number (amounting to 32%) not having access to the Internet either at work or home (see figure 6.11).

Not surprisingly, the pie chart below demonstrates that the majority of those who did not have access to the Internet did not plan to get Internet, which confirms barriers such as poor connections, costs and computer literacy. Clearly, the implication is that for the growing low income medical scheme the Internet would not be a viable channel.

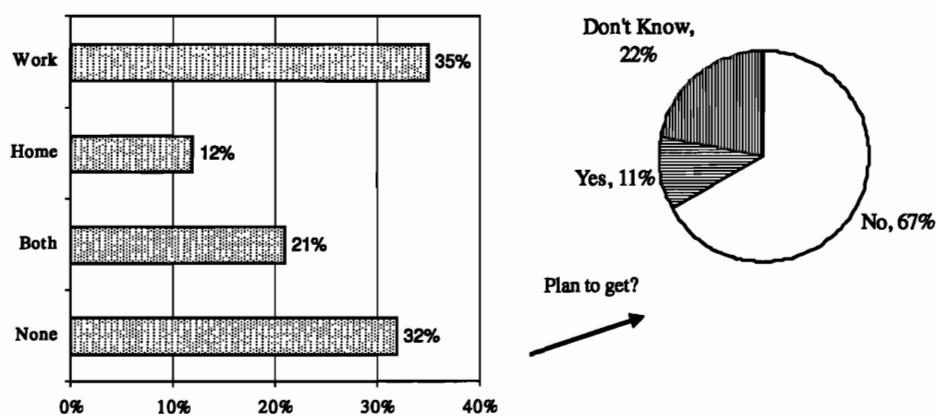


Figure 6.10 eHIC access at home and work

Source: Markinor Research (2003)

Note: n=600; Plan to get (n=192)

In 2005, the major trends from a technology dimension included the assimilation of Java throughout the systems area. More of the new systems or system components were being developed using Java. Magic began to play a diminishing role. Meanwhile, as opposed to EJB, the organisation was supporting the Java 2 Enterprise Edition (J2EE) middleware to reduce the maintenance and network overhead of an increasingly complex client-server environment. The Dynamo proprietary standard by ATG was no longer a viable option, given its slide in the marketplace and the lack of support by the other business units. Its role was reduced to enabling the customer relationship management (CRM) aspects of the website.

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The 2005 site redesign and the migration to a J2E framework for the new web server environment was a massive project and required a freeze on other initiatives. After go-live, system stability was threatened. The web server went down frequently and affected user experience. A user described his experience:

... Ever since the site was upgraded it has become very slow. Most of the time I am unable to access information because I am kicked out of the site or the site is unavailable ... (Online feedback, July 2005, line 6184)

Contradictory perceptions about the site's performance continued. Yet during this same period a number of users expressed satisfaction with the new look and feel of the site, as well as the site performance.

... The site is very user friendly and easily navigatable! Well done!! (Online feedback, July, 2005, line 6191)

Another major trend was the use of packaged applications like business rules engines to centrally store rules. Furthermore, there was a major focus on automating the development processes. For instance, the use of stylesheets, a form of template for the site redesign, meant easy maintenance and the need for fewer human resources in the future. A team reviewing automated test tool was prompted by a visit to the joint venture partner's sites. The number of problems with testing during the server conversion gave added impetus to this project.

Meanwhile, during the redesign, eHIC's identity was changed from H-World.co.za. A new identity for the website was formed, and the new name was now H.co.za. As a graphics developer explained:

... we have business brands ... They (referring to marketing) did not see the website as a brand ... (Graphics developer, interview 26, p 3)

The website branding and the e-commerce department had shared the same name for five years. Suddenly the name just 'disappeared' and left the e-commerce team without a label, without an identity. No negative impact was expressed by the users, though. From a business perspective, a number of new initiatives were initiated to support the international market. As a result, staff employed by the e-commerce department grew to almost 100 people. The principles for operating in the UK and US markets were fundamentally different. In the international markets

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the emphasis was on obtaining customers, while in South Africa there was a need to retain customers. A lot of the selling in the international markets was being done over the phone and on the Internet. There was increasing frustration among the development team representing the international clients over the logic of basing the new website on an older website that focused primarily on servicing existing members. One of the unhappy business analysts commented:

... First of all, you can't just plug and play it from one country to the next ... And also, what one marketing team wanted differed from the other. So, it started off saying, oh, yes, we are going to use this concept, and the more and more you delve into it, the more and more it moved away. So, a specific example was the Wellness Risk Assessment. We were going to now do this for both. And we started off together and ended up, as I can see, very far apart ...
(Business analyst, interview 47, p 7)

Meanwhile, internal research suggested that electronic communication intended to proactively address members' concerns was generating calls instead. It also emerged from similar research that the call rate increased significantly in the proximity of an eHIC site visit.¹⁶ eHIC's income statement was being challenged. The e-department, now without an identity, was entering an episode of further scrutiny.

6.4.4 Phase 3: From e-department to front-end development team

There were a number of further changes within the group in 2005. Operational efficiency was becoming an important driver of cost savings and profitability for the firm. There was an intensive focus on streamlining the operational aspects of the business, specifically in the service and operational infrastructure arena. The aim was to create a platform for ongoing efficiencies and more specifically to provide a framework for BHC's and UHC Health's back-office operations. Back-office support for the two joint international ventures was to operate from South Africa. Similarly, the call-centre service and Web development projects were to operate

¹⁶ The UAG Holdings executive committee requested an extensive study into the reasons that members might display any negative sentiment towards HIC. The final report of the study was requested to identify in order of influence the principal causes of negative member sentiment, and highlight the actions that would alter that sentiment. The methodology of the study used a number of diagnostic tools to determine the reasons for dissatisfaction, including previous service studies, telephonic member surveys, face-to-face surveys, HIC data that describes member experience, historic escalations data and data sourced from external parties. The final 'Buzz' report was released in April 2004.

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from South Africa. Therefore there was a huge drive to restructure the existing IT infrastructure so that it could support the globalisation initiatives.

In the meantime, there was a general feeling that the Web would play a more prominent role in the UK and the US than it had done in South Africa. A remark by a senior manager indicates some of the barriers to user adoption in the local context, and captures the healthier outlook for the self-service technology in the UK and the US:

[On South Africa] So, I still think there is a big resistance from a lot of people in terms of using online functionalities. And I think some of that is driven by acceptability and costs, and I think some of it is also driven by the fact that the momentum hasn't grown yet, particularly in terms of things like online retail shopping, etc. So, online shopping is quite inculcated in the States. It hasn't here ... I mean, it is quite interesting. We are starting to see some feedback now in terms of the differences between the conversion rates in the UK environment, to the people that visit more than one channel and they've got higher conversion rates. The ability to be able to research, doesn't necessarily lead to online sales, but it certainly supports the sales process. And that also, I think, can definitely translate into servicing as well. But it has almost become something that people need to have now ... It is not optional in the long run ... (New H-World head, interview 34, p 6)

Furthermore, the local firm was seeking to re-engineer the systems environments so that it could deliver closer to their expectations from a time-to-market perspective. At the same time there was further scrutiny on the value that eHIC was adding from a cost-benefit perspective. By this time the staff component for H-World had grown to around 120 people. Including H-World, the systems team for HIC and WSC combined had grown to more than 400 people. Given the increasing pressures to reduce administration costs, a number of questions were being raised about the size of eHIC and the related value it was realising:

In the eHIC's space there was a lot of attention to, like, what value do we believe we are adding? What deliverables have we participated in? What, the main objectives which we had been able to achieve? And then also because we have always sold ourselves as a cost saver to the business ... So, what the true sort of cost saving has basically been. Like, where, you know, how have we saved costs? Like our old income statement approach, is for saying that we go along with that but, for example, a lot of what the value is the question. So, like your rand value per hit was something that came ... And I think that was part of business saying, how can you say you are saving us X-million when we don't believe that possibly? So, I think, that was the start of the thing ... (Program manager, interview 42, pp 2-3)

Over the years, eHIC's growth was rapid. Whereas H-Link had only 19 000 users registered, H-World's registered user base by 2005 exceeded 430 000 (see figure 6.11). However, the size of the registered user base, while important, was not the crucial measure to judge the performance of the online channel. The crucial basis for eHIC's performance measurement was the savings on calls. Since the inception of H-World, there had been evidence of a steady decline in overall call

patterns to the call centres. This decline was attributed to the online channel. However, closer analysis revealed that eHIC users called the call centre more than non -eHIC users. Other theories around average call rates dropping were attributed to the ‘learning effect’. That is, as members became more experienced with the product, they called less.

In addition, as HIC improved its operations, this translated into more expedient and reliable service, translating into fewer calls. In contrast, it started to become apparent that those clients with a high servicing need often used the website channel regularly and called the call centre as well. Furthermore, the Wellness program was closely correlated with higher servicing demands. Internal reports indicated that avid members of the Wellness program called the call centre more than non-members. Since more than 90% of eHIC’s members were affiliated to the Wellness program (see table 6.2), it is not surprising that their call rates were higher. In addition, most of the active users on H-World had high claim and call patterns, suggesting that the site was also particularly appealing to those who were prone to illness and thus needed more effective management of their funds.

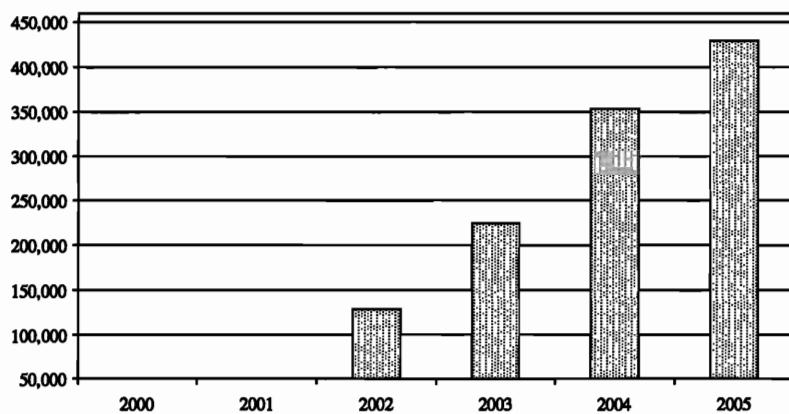


Figure 6.11 eHIC’s online user registration growth¹⁷

Source: eHIC’s management reports

(Totals are as at financial year-end (June) and not calendar year)

2000* represent the H-Link numbers, 2005 shows almost 430 000 users.

¹⁷ The rapid growth in the firm’s membership base was followed by equally strong growth of registered users. However, closer inspection revealed that over this period only 25% of registered users were active members of the website. A great majority of the users belonging to the remaining 75% discontinued the service over time, never to return.

Furthermore, it appeared that the Wellness program appealed mostly to a younger online audience, as supported by the age group demographic splits supplied in table 6.2. This could be attributed to the effect of brokers ‘raiding’ younger members from restricted schemes and enrolling them into an open scheme such as the HIC medical scheme. In other words, the profile of the HIC scheme members was generally younger. This in turn influenced the profile of the online users.

Meanwhile, although it is well known that a larger proportion of UAG’s clients are from the younger, more affluent Afrikaans community, only 44% of those who prefer the Afrikaans language as a method of communication had registered to use the online channel.

Table 6.2

Summary of key user characteristics

Subject	Measures
<i>Registration based on gender</i>	
Male	53.37%
Female	46.63%
<i>Active use based on gender</i>	
Male	48%
Female	52%
<i>Registered user age group</i>	
20–25	21.91%
26–30	32.02%
31–35	23.60%
36–40	6.74%
40–45	8.43%
Greater than 45	7.30%
<i>Preferred language of registered users</i>	
English	56%
Afrikaans	44%
<i>Wellness</i>	
Scheme members on Wellness program	70%
Wellness members as part of online registered user base	92%

Source: Internal Management Report (2004)

The majority of the users appear to be younger and affiliated to the Wellness program.

The measure of active use is based on logins per month

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Over the years, a number of Afrikaans clients expressed their dissatisfaction on the online channel not supporting the Afrikaans language, such as this user:

Geen Afrikaans? Hoe dan nou mense? Of is ek blind? Ek is seker amper die helfte van julle kliente praat Afrikaans ...

Retranslated: No Afrikaans, How come now people? Am I blind? I am sure that half of your clients speak Afrikaans(Online feedback, July, 2001, line 60)

This user was unhappy that Afrikaans was not a language supported in the online environment, especially since he believed at least half of HIC's clients were Afrikaans speaking. The next point is that South Africa's patriarchal culture may explain why the active use of the website is slightly higher among females, although more males had registered to use the site. It is also clear that only a minority of the older members showed any interest in the online channel.

Despite the younger user profile, retention rates for the online channel continued to be low. It appeared that after the novelty effect of active participation in the Wellness program subsided, so did the user's participation online. Over time, as much as 60% of the users who registered never returned to the website (see figure 6.12). This is in stark contrast to the health member base churn or lapse rate of 3–4 %. In fact, only 25% of the registered users continued to remain loyal and habitual users of the online channel. Another segment of the user base showed sporadic use. On the other hand, the use of the call centre remained relatively high, with repeat calls accounting for a significant component of the call volume. Internal statistics showed that 40% of members were phoning more than once a month.

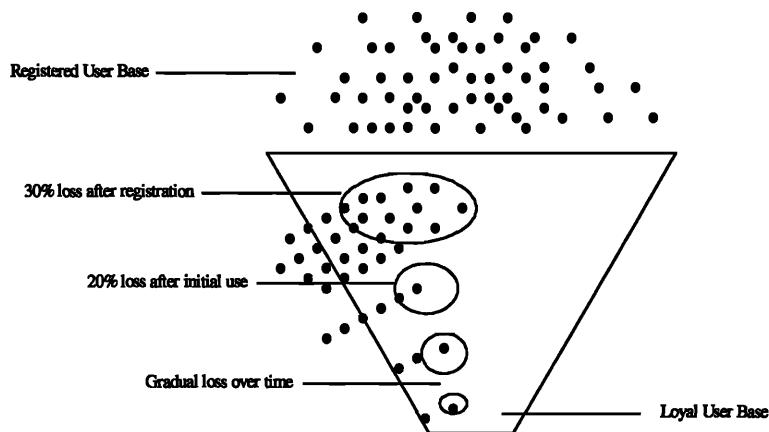


Figure 6.12 Leaky bucket syndrome – losing users over time

Source: Internal Report: Statistical analysis of retention (2004)

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Although site interaction was high, these interactions were made by a minority of members. There were general concerns that the critical mass needed to impact on call reductions was not being achieved. One of the senior managers explained the lack of focus on lost users in the past as a matter of shifting priorities:

So again, it is all about a shift in focus, stability is far more of an issue now than it was two years ago. Retaining the users is far more important today than two years ago. So the dynamics shifted. There's always theoretical views of the world that say, well, you should have from the start get things solved, then you would never have had the problem. I am not sure of that because in building some of that rigour and stability, you forgo the opportunity to get things out fast. And by foregoing the opportunity to get things out fast, you forgo growing your client base. And then you never get to be a big organisation, so stability never becomes a problem. (CIO Health Systems, interview 36, p 15).

A number of research initiatives were launched to understand tapering usage, particularly among sporadic and lapsed users. However, these retention initiatives had a usability bias, focusing on layout and visual appeal of the site, the ease of navigation, content appeal and the site's core functions. Meanwhile, future staff incentives and bonuses were to be linked to a user satisfaction index.

Instead of emphasising the cost-saving aspects, soon the basis for justifying the website was on the premise that every major medical aid company must have a website presence. Other bases for justification included intangible benefits such as supporting the HIC brand and the Wellness program. From being positioned initially as the 'preferred channel' or the 'channel of choice', the online channel was now being touted as a 'complementary channel' to the call centre, brokerage firms and other alternatives.

Meanwhile, from a globalisation perspective, there was this sense that a lot of the local Web system components were reusable, and the firm could achieve economies of scale, whether in the form of hardware or software applications. There was also a much bigger team locally with a much more diverse set of skills.

There is this whole globalisation thing. And there has been a realisation that the systems needed to be a little more generic and a lot more flexible, scalable ... Basically, the way the set-up for each area can, kind of, look after their own stuff. There was a lot of interaction but, obviously, not quite enough ... There was the collaboration, it was on key projects. So, when it came down to operations, the day-to-day stuff, the collaboration wasn't there. So, in order to get some initiatives off the ground, there is this need to combine, take what is good from all environments, putting them together, getting rid of all the old stuff, almost reinventing the systems, so to speak, to cater for this broader, yet specific environment, if it makes sense ... (Business analysts, interview 41, pp 2-3)

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Another major shift was that instead of developing channels that competed with each other, the focus was now on integrating with other channels. There was a major drive to ‘merge all channels’. The firm was attempting to integrate these channels in the back-office organisation where the core production processes were being managed. Problems relating to front-office and back-office integration were high on the agenda. There was also talk of refocusing eHIC’s capabilities and competencies related to this.

One of the aspects that eHIC had executed particularly well on over the years was the ‘softer’ elements of the channel. These included how to position, how to message, and how to design a user interface. There was an increasing need for these skills throughout the group, including within the traditional systems environment, which used to build ‘unfriendly’ user interfaces for the call-centre users. As part of improving IT’s overall performance, there was this notion of separating back-end and front-end development. The IT leadership team viewed this as an avenue to avoid duplication of effort and to facilitate greater alignment and matching of team priorities. They hoped that this design would alleviate the maintenance load issue and create more efficiencies and thus resource capacity for project work. One of the managers expressed the benefits of the change:

We [eHIC] at the front-end, don't build, we don't build business rules. We don't store the pricing. We don't store the component which told me about the Wellness member itself. The only application into which all those information is being pulled is in order to display the details of the member. So if the alignment is out, you will see ... You could miss the go-live ... So, the alignment is crucial and we are starting to talk now of taking that alignment and making it bigger. Where instead of having two teams, if you make one team with the right skills ... because, at the moment we have got a lot of duplication. The one developer on this team, on the backend and the front-end. We have got one BA on the backend and the front-end ... I mean, you will get a lot more delivery, because you won't have as many developers for one project. (Community head, interview 54, pp 5–6)

Another reason that validated this move was the increasing difficulty business representatives found when communicating to the different system areas driving the different channels. There was often confusion over ownership and more specifically which team drove the technical aspects of the project.

There were two schools of thought driven by the opposing SBU CIOs on how the systems development organisational structure should be designed to support this goal. The two models are illustrated in figure 6.13. In model A, which describes a vertical approach, the development team apply their skills to both the front-end and back-end developments for a specific business

area, whereas the idea with the horizontal approach or model B is that teams specialise either with front-end or back-end development.

In terms of model B, it was assumed that because the development staff would specialise, the quality of the end-product would be better. The systems would be better architected naturally, and because business concepts are separated, the systems that were developed were expected to be more agile. It was believed that model B forces the team to architect services in a ‘service-oriented’ manner. However, with model A, an application would be written as ‘one large monolithic application’, combining facets of both back-end and front-end work. This model assumes that there is no need to create a separate component or service, since the other areas are unlikely to consume that service. The difficulty with model A is that if another area wanted to reuse a service and not the whole application, the teams would have to refactor the code.

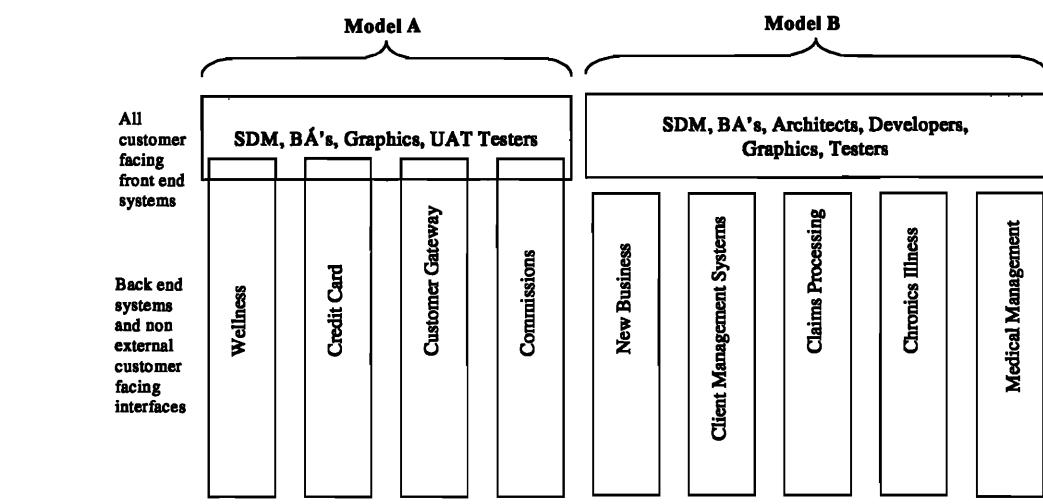


Figure 6.13 Proposed systems organisation restructure

Source: (Adapted) Internal change presentation (2005)

Over the next six months, model A and model B would co-exist, with some areas opting for model A and others for model B. Meanwhile, those development staff members with back-end process competency were moved into the back-end. And the staff that had apparently developed competencies in front-end and usability were moved into the front-end or ‘customer experience team’.

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At the same time there were a number of key changes to the firm's senior management structure. The most important for the fate of the e-commerce department was the appointment of the new CEO of WSC. The new CEO was very sceptical about the online environment and favoured a more 'human' approach. One of the key moves by the new CEO was to ration the points for 'click' behaviour and increase the points for 'feet' behaviour. There was clearly an element of 'points chasing', where members of WSC registered online merely so that they could receive points, as they did not appear to extend their interactions any further. This behaviour artificially inflated the online registration number, as well the hits on the website. Given the intimate interplay between eHIC and WSC, the change in leadership started to shift the emphasis of wellness from the online world to the 'physical' world. And as a manager remarked, there was a switch towards WSC's 'real world' network of partners:

And WSC is kind of moving away from just the Web, you know. I think we have been fairly Web centric. Now they have said ... no, for nutrition, you have got to go and see a nutritionist, which I agree with. There are certain things that we are not very good at, for the Web. You are not going to go to the gym on the web. You are going to go to the gym near you, physically, you know, physical ... (System architect, interview 43, pp 37–38)

Another critically important change was the appointment of the new head of eHIC. The previous head had been tasked with running the newly formed card business and was to become chief operations officer (COO) of all local functions that supported UAG's international operations in the US and the UK. The move of the previous head appeared to be a major loss for the eHIC team. Apparently, while the previous head had protected eHIC staff, the new head did not have the style to cope with senior management and seemed to be 'caving in' to their requests. Moreover, the new head's style was perceived to be a more formal, 'colder' and clinical style of management. Many of the staff members believed that formality had emerged so that management could allocate blame and were cynical about the changes. And many eHIC staff also believed that with the previous leader moving out, it made it easier for detractors to become more vocal about the arguments against the online channel.

At the same time there was a clear shift in that the IT organisation became bureaucratic. The 'family feel' of eHIC was being replaced by this 'corporate feel'. For instance, the new go-live process was much more formal, even requiring approval sign-off by senior management. Testing, which was once the domain of the same business analyst (BA) who had captured the requirements, was now the responsibility of an independent team of specialists. Furthermore, changes to the databases required a formal paper process and no longer relied on personal

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relationships with the database administrators alone. Many forums were emerging within the IT department where approvals took place, such as the developer and architect's forum. There was also a shift from in-house development to buying package applications and customising them for the organisation's needs. Moreover, representatives from business were being invited to attend the weekly operations meeting, which was once the exclusive domain of the eHIC management team. Business inputs were sought into areas such as responding to the site feedback queries and enhancing the user experience in general.

Meanwhile, there was this growing opinion among eHIC and some of the traditional systems staff that the organisation was 'putting a squeeze' over them. Although the organisation was not using the word 'retrenchment', a lot of the staff began to feel insecure and started to leave. A lot of ill feeling was expressed over the new head of e-commerce, whose leadership style did not lend itself well to 'old guns' who had worked under the previous, more charismatic leader. Meanwhile, the actual allocation of staff to front-end and back-end teams meant that many eHIC staff had to leave their current e-department and move into an unfamiliar systems area. For instance, 80% of the members of the Wellness team moved to perform back-end responsibilities. Indeed, the number of front-end analysts left in the Wellness team was one. As a result, there was a massive exodus of both the traditional systems and eHIC staff, and as much as 40% of the eHIC team resigned and left the organisation. One of the business analysts who did not leave highlighted the dissatisfaction experienced by the eHIC staff and provided his perspective over the mass departure of staff members:

I think they believe they have been sold out. The move itself wasn't very well thought-out and the processes ... I think the emphasis of the thinking was more of how it was going to work for business, as opposed to how it would be perceived by the individuals that were involved. But the general feeling was that there wasn't enough thought put into this, for the restructure. The general feeling is that we have been sold out ... What, the reasons for the change that you have been sold, didn't match up to how management has been restructured as well. There were some questions why management were still structured in a similar as the previous one ...? (Business analysts, interview 41, pp 4–5)

6.4.5 Future situation

From an IT perspective, there was a greater focus on engaging with outsource partners. A number of local independent contractors were being hired, as well as developers from India, leading to its own set of challenges. Meanwhile, the desktop and desktop-support environment was also completely outsourced. The paradigm supporting build-versus-buy decisions, typically dominated by in-house developments efforts, was shifting in a new direction, towards the greater use of packaged applications.

Despite the internal rollout of wireless application protocol (WAP) infrastructure in 2004, it was only after 2005 that the WAP capability was rolled out to the user community. By this time 3G capabilities, which translated into better broadband access, were being offered by the three cellular network providers. This feature allowed interaction from cellphone or personal digital assistant (PDA) and enabled wireless contact with UAG. This initial focus was on intermediaries, since they generally had higher frequency of interaction with UAG via other channels, and this user segment was more likely to be using cellular phones and PDAs. The general focus also shifted to the B2B components of the site such as the employer, intermediary, and provider zones. There was growing support among these business areas to sustain the online channel for their communities, which had generally been lacking in the past. This was helped by the declining emphasis on the wellness aspects of the site.

Moreover, there was greater emphasis on understanding online behaviour. There was an initiative to establish a data warehouse capability within the organisation's nascent Oracle data warehouse platform to enable this process. Furthermore, the firm purchased Webtrends, a reporting tool for measuring and analysing online statistics. However, integration into the existing J2EE architecture proved challenging. Moreover, there were issues around definitions of rules such as what amounts to a 'page impression' or 'unique session', as defined in the package, as opposed to what the business required. Alternative research approaches included greater engagement with external research houses to research how to 'drive behaviour' of users.

Meanwhile, a lot more effort was being expended on the international initiatives. Indeed, apart from maintenance and product changes, the local website was managed on an ad hoc basis. The only major initiative on the local website was the addition of online services to support the new

credit card initiative. H-World no longer existed. The Web technology itself had become completely immersed in the fabric of the organisation, and the website was simply one of many channels to engage or interact with stakeholders. The transition of eHIC from what was envisaged at its birth to what transpired had clearly moved in another unintended direction. Its latest mutation compared with how it was conceived in 1999 departed in yet another interesting way.

6.4.6 Lessons Learnt

At this point it may be fitting to provide certain general principles that organisations wishing to pursue similar implementation initiatives can draw on. First, despite the hype associated with certain IS innovations, firms should pay attention to issues specific to their context and assess the business value of the innovation before proceeding to commit resources. Second, the firm's should assess its own readiness from a cultural perspective and the maturity of complementary systems in the larger IT community. Since SSTs deal with external users who have more discretion over which channels they can use, the firm should consider the context of the user within the larger social environment and the enablers and barriers to SST use. Firms should not underestimate the 'stickiness' of traditional channels.

6.4.7 Summary of the case study

Since 1999, eHIC had undergone many transitions to eventually manifest itself in its existing organisational form. An overview of relevant events is presented in a timeline in figure 6.13. Many external and internal trends were interacting to influence the trajectory of e-commerce in the organisation.

When the promise of the dotcom paradigm to streamline and revolutionise the firm did not materialise, there was this ongoing debate on the viability of the online channel compared with the traditional channels. There were two opposing views in the organisation: the transactional view vs the relational view. The intended role (and in hindsight the idealistic goal) of replacing traditional administrative processes, replacing the call centre, and bringing to an end print-based marketing to alleviate increasing cost pressures created a legacy of resentment among targeted

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functional areas. There was also the challenge of being isolated from the traditional systems environment and issues with priority setting, with favour given to the traditional channels as opposed to the online channel. The various macro contextual dynamics related to connectivity also hampered progress.

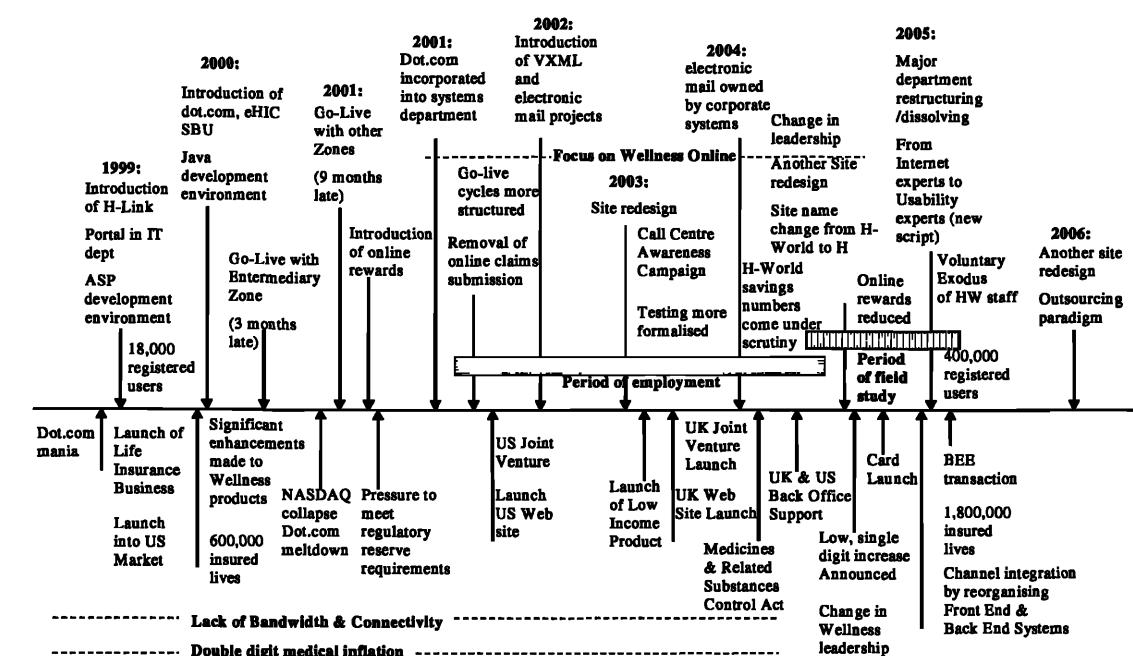


Figure 6.14 Series of key events in the evolution of eHIC

Source: Extracted from documentation and interviews

Despite major structural changes over the years, the status of the online channel was always fragile. On the upside there were elements of success with the B2B channels, specifically with brokers and employers, and on the B2C side among those members that were devotedly affiliated to the Wellness program and those who had a high servicing need from a medical funding perspective. However, when compared with the traditional channels, the online channel seems to demonstrate only pockets of success for both B2C and B2B relationships. The sporadic and tapering use among the majority of users and the high lapse rate were of increasing concern. Furthermore, a large proportion of the member base remained non-adopters of the online service.

But self-servicing appears to be playing a valuable role for at least a minority of those habitual users and creates important capabilities such as internationalisation and usability competencies

for the healthcare insurance organisation. However, these events appear to be somewhat emergent, rather than deliberate. It is clear from this historical review that the implementation of self-service technologies, while based on rational and economic ideals, was more fluid, transitory and unpredictable than fixed, measurable and determinable.

6.5 Conclusion

Understanding those elements that are crucial to the implementation of information systems is difficult to assess in isolation, since they represent complex interactions that can only be understood over time. In this chapter, I presented the case study's organisational context and history. The chapter described how the firm had to apply innovative risk management expertise to develop its products, while complying with the changing regulatory environment. At the same time it had to maintain affordability and quality of care for its members and profits for its shareholders. It also showed how the historical context, characterised by major regulatory changes and events such as the period of dotcom hysteria, together with the changing regulatory and organisational context and drive towards domestic growth and internationalisation, influenced the shaping of the online self-service technology throughout its implementation. Furthermore, it demonstrated how these events were intertwined with the external user's experience in the context of traditional channels as well as the growing array of alternative technology-based channels and communication media options. Most of the major events that occurred during the span of the case study have been revealed in sufficient detail. In the next two chapters, I provide a formal analysis of the case, using both structuration theory and ANT respectively, as the basis for developing our understanding.

Chapter 7

Interpretation of Case Study: A Structuralist Perspective

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7.1 Introduction

In the previous two chapters, I provided a backdrop for the interpretation of the case study analysis, by describing broader social issues in chapter 5 and specific events at HIC in chapter 6. In this chapter and the chapter that follows, I will apply the theoretical insights outlined in chapter 3 and chapter 4, and present a formal analysis of the SST implementation process at HIC. The case at HIC is analysed using two theoretical perspectives, actor-network theory (ANT) and structuration theory (ST), in an attempt to gain a better understanding of the implementation of self-service technologies (SSTs) in the social context. As explained earlier, structuration theory has been generally applied to IS research that had process and context issues as a central concern. Therefore, it seems justifiable to first use this theory to assess how much understanding can be gained in analysing the case study. Although many limitations with regard to structuration theory have been pointed out in chapter 4, I will employ it here to analyse the case and see where it leaves questions unanswered in understanding the HIC case.

In chapter 8, I will demonstrate how actor-network theory in this particular study can either complement the structuration theory findings or provide a somewhat different understanding. In applying these theories, it is not my intention to describe the implementation of H-World at HIC as an exceptional failure or as an exceptional success. Instead, I would rather argue that the implementation process mixes up success and failure and other such dichotomies in a messy way, and one should direct one's attention to understanding this intertwining. Together, I expect these theories to provide a richer and deeper understanding of these entanglements.

In chapter 9, I focus on the primary aim of this thesis, which is to develop a conceptual framework for understanding the social context of SST implementation and to offer an extension to a more general IS implementation theory.

7.2 The shifting enactments of self-service technology-in-practice

7.2.1 Introduction

In the first analysis, I will use structuration theory to understand the case study. In applying the theoretical framework, I follow a common thread in my analysis, according to multiple stages of enactment. Using Weick's (1995) formulation, I propose that sense making triggered by a SST's

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introduction sets the stage for structuration in an organisation. Weick (1995) describes the process through which humans shape and structure their reality as a process of enactment. This concept assumes that designers of SSTs take a proactive role in bringing forth their realities through their interpretive schemes, despite the reality of 'the way things are'. In other words, SSTs are in essence socially constructed realities that are as much in the minds of the designers as they are material structures (Morgan, 1986). While most research on IS implementation has focused on the processes that enable or constrain the use of technology, I will argue that sense making lays the groundwork for later structuration (Siino and Hinds, 2004). In other words, agents are both constrained and enabled in their sense making by existing structures in the social setting. As will be observed, the subjective nature of SST in this particular case gave the designers room to invoke three particular cognitive frames, from that of a channel of choice, to a channel that dazzles, to a complementary channel.

This series of three major enactments of the SST will be used as scaffolding for the analysis. Furthermore, I study other concepts of structuration theory explored in chapter 4, such as facilities, norms and interpretive schemes, systems of signification, domination and legitimisation, routinisation, enabling and constraining features, and intended and unintended consequences. I also augment the structuralist conceptual model established in chapter 4 with key concepts from Giddens' (2003) later works on the consequences of modernity. Jointly, these concepts will serve to uncover important implications for organisations implementing SSTs.

According to Orlitzki and Iacono (2001), any analysis of the IT artefact must acknowledge:

- That the IT artefact is shaped by the interests, values and assumptions of designers and users
- That the IT artefact is embedded in a historical context, and therefore consideration must be given to the cultural aspects of the implementation journey
- That the IT artefact is composed of a multiplicity of fragile and fragmentary components
- That the IT artefact emerges from ongoing social, political and economic practices

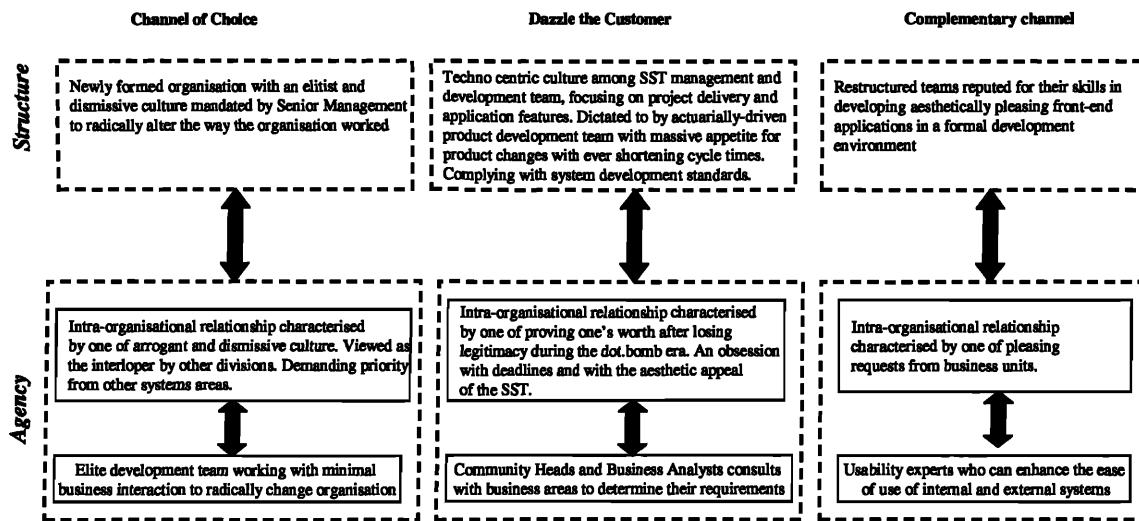


Figure 7.1 Self-service technology in practice – shifting enactments by designers

Source: Adapted from Orlikowski (2000)

In heeding Orlikowski and Iacono's (2001) call to engage more explicitly with the way in which the IT artefact should be conceived, the figure above demonstrates how the structure and functionality of SST constitute a reflection of the shifting interests and values displayed by human agents over time. As a pure-play strategic business unit (SBU), the SST's purpose was to replace or substitute the traditional channels. As a business unit integrated into the IT department, its role was relegated to supporting the brand and the Wellness program. In its most recent mutation as a complementary channel, it became a stock of usability experts that could deliver front-end development expertise for the rest of the organisation, including all systems and channels. Eventually the online channel itself was fully integrated in the firm's business functions. During these episodes, the SST faced an incessant challenge of legitimacy. Consequently, eHIC continually reformulated its purpose to maintain its legitimacy. As will be observed, owing to the contradictory logics, interests and values at work in the eHIC context, the dynamics of legitimacy were crucial in the implementation of the SST.

7.2.2 The channel of choice

Traditionally healthcare insurance products operated in the name of its pool of members, rather than individual members. This meant that the risk of having to pay for healthcare was borne by

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all the members of the pool, and not by each contributor individually. The consumer-driven healthcare model shifts the responsibility to the individual to make more prudent decisions about his or her healthcare. The assumption inherent in this model is that individuals make tactless decisions about their healthcare, and will only act prudently when their own money is at stake. The consumer-driven healthcare approach transforms the identity of the patient into a consumer and imposes the belief that consumers are capable of making decisions about their healthcare if they have the relevant and appropriate information. Traditional healthcare financial models have also been associated with promoting a ‘moral hazard’, with private healthcare providers manipulating market forces towards their own interests, thus rapidly increasing the cost of healthcare. Advocates of consumer-driven healthcare are convinced these new products will change member behaviour, which will in turn force pharmaceutical companies, hospitals and physicians to compete more aggressively on quality and cost.

Traditionally, the healthcare providers have had immense powers, claiming the right to make decisions on behalf of the patient, based on their professional expertise and own codes of conduct. This prevailing attitude reflects the current structures of signification, legitimation and domination before these looming reforms in healthcare insurance products (see table 7.1). At an institutional level, the intention behind consumer driven-healthcare products is to empower the patient in the decision-making process when engaging with the healthcare provider.

From a broader social structure perspective, the product served to perpetuate the conception that South Africa has an exclusionary healthcare society, with these products being a luxury of the ‘haves’. The modality of private sector organisations reinforces a ‘financially dominated’ access to quality healthcare, with a contemporary emphasis on the importance of individual effort in generating the economic resources that underlie their own care (see table 7.1). This language of individual ownership obviously weakens society’s sense of collective responsibility for its most vulnerable members. Indeed, one can argue that HIC’s products flourished because of South Africa’s legacy of societal-behaviour patterns deeply rooted in apartheid. In fact, the product design shifted the locus of rights and responsibilities for financing healthcare expenses from the government and employers toward individual consumers. For employers in particular, the rapidly increasing costs as a result of the staggering Aids epidemic, poor public service infrastructure, and mounting double-digit inflation of medical aid motivated them to shift the responsibility for healthcare expenses to the employee. The high costs faced by employers in subsidising medical

scheme membership for their employees has also encouraged the creation of cash (or cost-to-company) packages that further transfer the burden of healthcare spending onto the individual employee. In fact, fewer South African employers are now willing to offer new employees medical scheme cover that extends beyond the pensionable age (Doherty and McLeod, 2002). In a sense, employees are trapped because contributions to a medical scheme are enforced by the employer, are tax-deductible and are sometimes co-paid by the employer. Since profit making is the dominant value of actuaries working in private healthcare organisations, they are blind to these effects, because they are traditionally not concerned about the social costs of economic activity resulting from their models (see table 7.1).

The triumph of consumer-driven healthcare in South Africa then was by no means preordained. During the past decade, rhetoric about the ‘free market’ and the ‘empowered consumer’ has cloaked changes in the South African healthcare insurance context that bear little relation to ‘healthy competition’ and ‘consumer choice’. During the consolidation period, many healthcare insurers were eliminated or absorbed by their larger competitors. Healthcare insurers and employers who were seeking to absolve themselves of the burden of healthcare costs are subsidised heavily by the government, in the form of substantial tax breaks given to predominantly wealthy South African employees. Consumer-driven healthcare firms have persevered to intentionally exclude ‘risky’ members from their schemes by pricing and mechanisms like the medical savings accounts (MSAs), which have merely shifted more risk onto the consumer. As already alluded to in chapter 5, MSAs tend to benefit more affluent consumers, not only because they are complex to understand and manage, but also because the amount of savings is worked out as percentage of total contributions – that is, the higher the contribution, the more savings a member has. Brokers driven by commission fees have also applied their cunning to increase their market share and achieve growth targets by shifting willing employers and trapped employees from closed to open schemes. Indeed, the new government has been unassertive when facing resistance from the powerful financial services sector. The authority and legitimisation of the National Health Department in particular have been increasingly called into question. For better or worse then, legislation before and post-apartheid passed by healthcare regulators has played a more important role in the shaping of consumer-driven healthcare than free market forces.

Following Giddens, the middle row in table 7.1 below is labelled ‘modality’, in other words, the interpretive scheme through which people in their everyday activities draw on the structures of signification. Such structures of signification did not go unchallenged. Regulator reforms were often accused by private healthcare firms of having a ‘socialistic agenda’. Likewise, the regulator was consistently accusing the private sector of ‘plumping up the pockets of shareholders’. Different interpretations were prevalent. Wealthier consumers were able to draw on their structures of signification and observe that the public sector was beleaguered by run-down infrastructure, lack of basic medicine and dire shortage of staff, while the private system offered excellent world-class health services. This interpretation served to strengthen the unequal representation between private and public, and the grave disparity between the two.

Table 7.1

Contrasting structures of signification

	Private healthcare providers	Private health insurer (HIC)	National health sector
Structure	Successful, private-for-profit driven industry	Successful, innovative financial services firm maximising profits and shareholder value	Beleaguered provider of public healthcare services and facilities
Modality	Professionalism and expert medical knowledge	Actuarial science (risk), science of preventative healthcare and clinical value of prevention, finance, marketing, and interactive use of Web technology	Regulator and public service provider
Interaction	Accountability in diagnosis and treatment of patient (mainly the wealthy)	Accountability in funding and administrating patient's treatment (mainly the wealthy)	Accountability for redressing legacy issues mainly as a result of apartheid by regulating industry and providing funding and equitable healthcare access to all patients (mainly the poor)

The process of engaging their members in managing costs is central to the philosophy of HIC's consumer-driven healthcare product. Internet-based self-service technologies are one of the key ways in which the insurer is seeking to 'empower' its consumers with the knowledge and tools to make decisions relating to financing their healthcare. In the same way, the firm was attempting to shift the identity of its members from healthcare patients to 'empowered consumers' whose concern would include both directing their health and healthcare finances and the managing information related to their health and healthcare finances. In this way, the Internet has become a key mechanism for promoting and managing a healthier lifestyle through the use of online tools for self-care and personal health appraisal. At the same time, it has become a mechanism for reducing administration costs by an anticipated reduction in call volumes. The irony of self-service is that the very industry that revolutionised the concept – the fast food industry and more specifically McDonald's with its Speedee Service System – has similarly inspired healthcare insurers to adopt this self-serve approach. In the same way that the fast food industry effectively eliminated the needs for skilled and short-order cooks, carhops, waitresses, and dishwashers, health insurers are now seeking to eliminate call-centre consultants and wellness practitioners. The irony is that the fast food industry that has 'infiltrated every nook and cranny' of modern society is largely answerable for wellness problems (Schlosser, 2002).

Meanwhile, driven by commercial imperatives, private sector entrepreneurs and Internet service providers (ISPs) that established South Africa as early pioneers of the Internet would contribute favourably towards enabling its use. However, the late entry of Telkom into the market would signify the onset of a bitter conflict between the monopoly and existing ISP rivals. As already alluded to in chapter 5, the government (the major shareholder) gave the monopoly a licence that granted exclusivity over the provision of telecommunications services. Consequently, the cost of access (South Africa was at the time regarded as having one of the most expensive international bandwidth prices in the world) would remain one of the key constraints on the use of the Internet and information and communication technology (ICT) development as a whole. Apart from costs, the speed of access owing to low-quality bandwidth infrastructure would serve to constrain the use of the Internet and the development of the country's ICT. Nevertheless, the rhetoric of the free market and the New Economy, with the Internet at the heart of it, was beginning to shape self-service in the health insurance context. Would this be the beginning of the 'industrialisation' of healthcare?

In South Africa itself the Internet and the whole dotcom thing was very new and very unknown so any idea almost would fly if you had the right backing. (Community head, interview 49, p 2)

As articulated by structuration theory, power is pervasive, and conversations as generators of meanings can never be held outside of power (Giddens, 1984). Any attempt to separate power and knowledge is futile, since the production of knowledge is political (Giddens, 1984). Power therefore acts as a regime of truth, producing and co-constituted by knowledge. As indicated in the excerpt above, this implies that the SST too was enframed by the prevailing regimes of truth. In 1999, the first regime of truth was that the Web would become the ‘channel of choice’ or ‘preferred channel’, and the aim was therefore to replace existing channels. An organising vision emerging from a heterogeneous collective – consisting of the academic world, media, consultant, software vendors, and dotcom start-ups – bestowed a lot of appeal upon this ‘substitution claim’ and other ‘efficiency’ inscriptions.

As already alluded to, the two major exogenous shocks to the structures of HIC at the time were owing to the rapid acquisition of new health members and the advent of Internet as a potential low-cost servicing channel (Barley, 1986). As depicted in figure 7.2, eHIC was aimed as an alternative service channel for the rapidly growing member base to self-service.

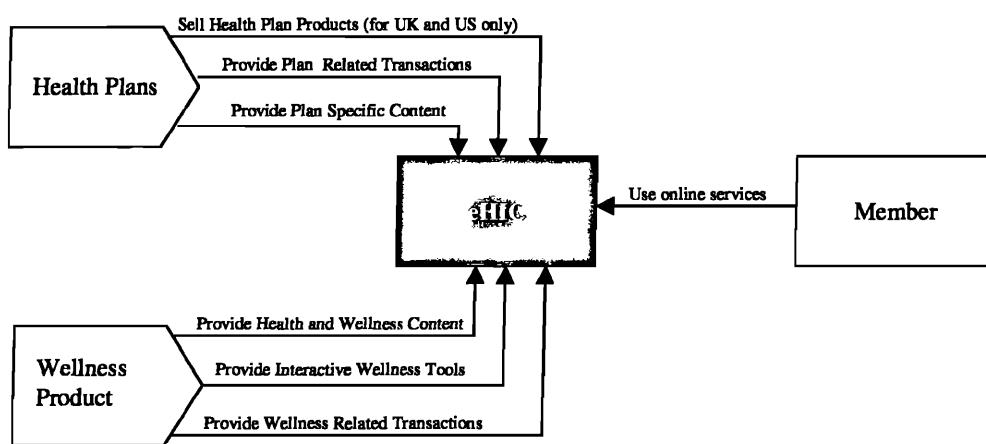


Figure 7.2 eHIC’s e-service model for members

Consequently, eHIC was initially configured as a Greenfield operation with an autonomous structure under an independent umbrella relating to mission, governance mechanisms and

budget. This structure served to give strategic impetus to the implementation of the SST and increased the visibility of the executive committee's commitment to the efforts with e-commerce. Using Giddens' key structuration concepts again, it can be seen that the member self-service website attempted to take on the role and identity of traditional channels like the call centre agent, the broker and paper-based marketing. The perception prevalent during the period of dotcom hype was that traditional channels would be replaced, and therefore these practices would become extinct. There was a widely held belief that the Web would create disintermediation in the marketplace. HIC's administration costs and costs associating with servicing healthcare were growing rapidly at the time. A rapidly rising member base for HIC meant that associated costs in servicing were also escalating. An online self-service channel at the time had the potential to make HIC's operations more scalable and more cost-effective. The prevailing rhetoric suggested that members could service themselves over the Web without the need for a call-centre consultant, human resources administrator or a broker (see figure 7.3). Since the capital and labour costs of the call-centre environment are among the most significant costs for a health insurer, and given the firm's profit motive, the Web, if it became the dominant channel, would obviously be a 'channel of choice' for the firm.

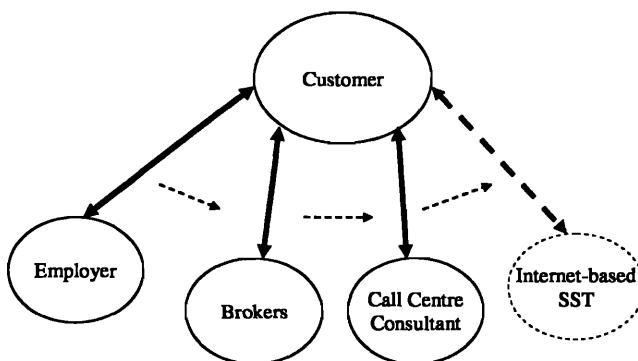


Figure 7.3 Consumer driven healthcare – shifting rhetoric of customer relations and interactions

As discussed in chapter 4, two kinds of resources are distinguished in structuration theory: allocative resources used to generate power over objects; and authoritative resources used to generate power over persons (Giddens, 2003). Giddens reduces technology to an allocative resource, thus approving of its role in generating power and control over materials (Orlikowski, 2000). However, this notion implies that technology does not feature prominently in wielding power over actors. But, as will be seen, technologies and particularly SSTs are intimately implicated in the structuring of certain user practices of interacting with their health insurer,

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through the provision of information. Sharing the view of Orlikowski (2000), I shall treat SSTs in the rest of this analysis as a resource with both allocative and authoritative aspects, and capable of significantly influencing social practices.

As already alluded to, one common category of cognitive frames that was employed during the inception of the project was that of the Internet-based self-service technology as ‘the channel of choice’. The cognitive frame of the SST as the channel of choice seemed to invoke excitement and pride among workers employing such a frame. Walsham (1998) also believes it is important to trace the shifts in professional identity in the ICT context. This will help elucidate how groups, and individuals within those groups, view and depict themselves in relation to their work and the work of others. In this case the positive framing bolstered the team’s own identity, since they could then view themselves as the ‘type’ of individuals who work with a leading-edge technology that was to alter the way the business serviced its clients and partners. Reinforcing the ideology of ‘elitism’ is the notion that eHIC employees are special. There was a widespread belief among eHIC staff and managers that they were handpicked from among the top candidates in the country to work for eHIC. This is reflected in and sustained by eHIC technologies that were ‘best of breed’ too. This self-image of eHIC was a critical element of its culture and was reinforced constantly, through meetings, documentation, relationships with peers, superiors, rival system departments and internal clients.

However, early attempts to introduce eHIC had been effectively resisted. Successful e-commerce applications depend on an integrated view of real-time information and interoperability with legacy systems. The organisation was neither culturally nor organisationally ready for such a large computer-based integrated system. Furthermore, claims were being made that the Internet could replace traditional channels. This obviously created resistance by the managers and staff that were responsible for traditional channels and their system colleagues. The interpretive modality, the language and symbols of eHIC, such as ‘eliminate calls’, and ‘online claims servicing’, did not correspond with the dominant organisational paradigm and interpretive scheme which related to ‘human contact’ in servicing members. The goals and technology assumptions of eHIC were more akin to plant automation than to a healthcare insurance firm.

The SST implemented at HIC during this period embodied a specific social rule: ‘to replace people-driven support with automated support’. The systems were sanctioned by the ‘powers to

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be' on the basis of efficient cost control and efficiency norms. The use of SST implied a new set of rules for coordinating and controlling the way services were to be provided to customers. The SST, with its new interpretive scheme, was introducing an alternative view of efficient and effective member service practices.

However, management failed to recognise the conflicts that were created between the traditional systems and e-commerce environment. The new information technology needed direct access to system components and databases. Furthermore, it required an integrated perspective of the member, and not a policy view of members, from these systems. No such infrastructure was available. These interfaces also required the commitment of the traditional systems environment. There was antagonism between the Java developers of eHIC and developers from the traditional systems environment over what were perceived to be 'badly designed Magic systems' which were deemed inadequate and illegitimate, although the Magic system was at the heart of the organisation's successful operations for years. eHIC staff struggled to obtain commitment from the traditional systems staff.

The traditional systems staff attempted to draw on their structures of domination, arising from their powerful position within the firm (as described in table 7.2) and their key role in enabling the firm's operations and product development initiatives. The traditional systems environment was reticent about participating willingly in developing the e-commerce capability. They did not share the same structure of signification of the autonomous control over e-commerce projects being driven by eHIC. Indeed, these structural contradictions led to further conflict as struggles between individuals and groups with different interests ensued. However, the power of the e-commerce venture was enhanced by its structure as a separate SBU which received direct support from the 'very top' with the CEO, COO and MD of HIC sitting on eHIC's exco. Despite the support of the exco, functioning as a separate SBU provided an inadequate interpretive scheme to draw on in communication with the traditional systems environment regarding development activities. Furthermore, the traditional systems department was able to resist, because the eHIC staff lacked the understanding of the traditional systems environment.

Table 7.2

Structures rules and resources that influenced or were influenced by the implementation

Broader environment	Organisational environment	IT Context	SST Context
Apartheid government deliberately encourages the growth of the private health sector at the expense of the public sector. Wealthier population shift to medical schemes to finance healthcare	Supported by large parent company, a pioneer in the innovation of HSA plans which passes the accountability of day-to-day medical expenses from employers to employees	Rapid application development to support product innovation, short time-to-market cycles, and increasing customer service need via traditional channels	Externally sourced elitist team employed to use the web channel to radically alter the manner in which clients are serviced
Double digit medical inflation in post apartheid era largely attributed to currency depreciation and profit focus of world-class private healthcare groups	Risk-oriented, profit-driven firm led by professional actuaries in product design	Functional perspective and stovepiping mentality to accommodate specific business requirements of functional areas	A strategic business unit responsible for replacing traditional channels thus reducing administration costs
Further degradation of overburdened public health sector as a result of AIDS epidemic and staff crisis	Leverage of existing broker distribution channel owned by parent company to promote new product and grow business	Chronic environment influences the persistent use of unconventional technologies like Magic and CI-SAM	Interactive tool to enhance the Wellness product
Dramatic rise in open schemes and a decline in closed schemes that were accountable to employers	Respond to regulator's risk-rating prohibitions and increasing competition by developing Wellness concept to appeal to a younger, healthier audience	Lack of application of formal techniques	Enterprise and process perspective servicing multiple communities
Brokers encouraged by profit incentives and 'willing employers' to move employees to open schemes	Promote new Wellness concept by savvy packaging and effective use of mass media and broker distribution channel	Operates in batch mode to accommodate current architecture, to handover data to other functional areas and to reduce overhead on existing networks and systems	Mainstream technologies like Java, CORBA and Dynamo Web Server, Documentum, and Verity Search Engine
Regulator introduces a range of reforms to improve access of healthcare to all citizens leads to consolidation in the medical schemes industry	Expand operations to the US on the back of local success	Lack of resources with formal technical skills and experience	Needs to operate in real-time mode to offer reliable and responsive service
Poor national ICT infrastructure characterised by poor connectivity, low bandwidth, and high costs advanced by predominantly state-owned and protected monopoly	Diversifies to life insurer to cross-sell and up-sell to growing customer base	Focus on supporting internal users	Focus on building registered base of external users
Euphoria over the Internet's potential to create a 'commercial revolution', a party line of steering mechanisms which included academics and software vendors	From channel experimentation to radical shift in exploiting e-commerce: to combat threat of 'pure play' health insurer; reduce growing administration costs; and improve service levels for increasingly demanding members		

The inadequacy of the interpretive scheme provided by eHIC applied not only to the traditional systems environment, but also within the business areas supporting the traditional channels. With regards to routinisation, the activities of the traditional systems areas and business departments were significantly disrupted as a result of eHIC. Apart from dealing with operational concerns and projects spawned by new product development initiatives, these areas had to now accommodate the eHIC initiative. Nevertheless, the seeds of change to the internal structures began here, since the eHIC staff were beginning to form and communicate a new interpretive scheme that emphasised a changed orientation from islands of disparate systems, designed to support specific functional areas, towards an integrated, process perspective of the business. Nevertheless, the cross-cultural differences between these teams adversely affected the software development process. Rather than address conflict and work out issues between system departments, the eHIC team created technical workarounds to overcome hurdles. This situation would eventually leave an ugly legacy with regards to maintenance.

At the time, the environment was very demanding. There was no time for formal reviews as such. Everyone rushed to complete tasks with the minimal documentation possible, so that they could meet their deadlines and move on to the next project. Given the time pressure to deliver, certain significant tradeoffs become apparent. On reflecting on the way the team had operated in the past, the head of H-World attempted to rationalise why some of these tradeoffs had transpired:

I think we have gone through an evolution. And if you, if you look at the different stages of H-World, when we started off, the rules were about getting stuff out the door. Quality probably was not one of the most important things, customer focus while considered was not the be all and end all. I think, the reason things change is because the evolution of the business changes. When you have got no users than keeping the users happy is not as important as getting users. And when you have got users then you need to keep those users happy and keeping them and retaining them becomes more important than growing your customer base. So, the why now is because your achievements change over a period of time and therefore your focus has to change over a period of time. (CIO Health Systems, interview 36, p 13).

Designers typically draw on structures of signification, through their interpretive schemes, which allow them to understand what ‘quality’, ‘increase user base’, ‘reduce costs’, ‘increase revenues’, and ‘offer 24/7 service’ mean, not just as words in themselves, but in relation to the social whole in which they have their meaning (table 7.3). In the context of a private sector organisation that is profit driven, increase in income and reductions in costs are desirable. Budget and time

constraints (deadlines) lead to certain tradeoffs. Thus signification is intertwined with legitimation, as there are organisational norms that also enable dissidents to use the relationships between income streams and costs to challenge the value of the new system. As was the case with eHIC, tradeoffs had to be made by either growing the user base or retaining the user base.

To be operational and available ‘24/7’ is construed as necessary in this context, and here again the structures of domination intertwine with the structures of meaning and legitimation. As I will show later, SSTs have a strong tendency to promote systems integration via mechanisms such as time-space distanciation and routinisation. The designers of eHIC were in effect attempting to routinise the SST into the lives of the user. For most interactions designed into the SST, time-space distanciation is propagated, enabling the transactions to take place anywhere at any time (24/7).

Table 7.3
Designers technology-in-practice

Facilities	Norms	Interpretive scheme
Development environment	Deadline driven	Drive registration
Java	Go-live procedure	Drive usage
Dynamo Web Application		
Server	Testing eg browser versions	Meet deadlines
Oracle Database	Management reports	Dazzle the customer
HTML/XML/Java Scripting	Income statement	Reduce calls to call centre
	Minimalist development	
Chill room	methodology	Reduce administrative costs
Separate premises	Call statistics	Empower customer
‘Best of breed’ technologies	Staff Incentives	Make customer healthy
	Strategic presentations	Offer 24/7 real-time service
	Autonomy on development practices	Educate customers
	Project reviews	Generate revenues
	English language	Offer convenience
	Product jargon	
	Business requirements	
	Specification	
	Graphics brief	

After all, the call-centre consultants, one of the key actors representing the firm that are traditionally involved in these interactions, are not co-present from a face-to-face perspective. Furthermore, call centres operate only during office hours and, except for emergency services, are not widely available on weekends. These norms do not programme designers' conduct, but are 'contingent claims' which have to be sustained and made to 'count' through the effective mobilisation of sanctions. The ability to mobilise sanctions depends upon access to allocative or authoritative resources.

Despite access to these resources, many of the user interactions that took place generally failed to correspond with the designer's intentions. Unlike the work context, the social practice of external users is composed of a varied number of routinised actions. The self-service technology was designed with a particular set of interactions in mind. These transactions represent the designer's intentions that the users' interactions with the SST should create. Embedded in the design was the notion to 'empower the customer' and therefore reduce calls and effectively replace the call-centre consultant with the Web browser. Norms refer to the selected mechanisms, techniques and sanctions through which the truth is produced and confirmed as such (table 7.3). These norms determined how the designers should act. In their design practices the development team did not consult with the users directly, but drew on call-centre statistics to prioritise the development of online services. This practice was aligned with the firm's objectives of reducing administrative costs, and reinforced cooperation with the e-business and the traditional firm. These savings were reported in an 'income statement' to sanction or legitimate their actions as being appropriate. For instance, the majority of member calls were claims related, and naturally these services were prioritised for development (figure D2). In contrast, the behaviour of only a minority of the users matched the intentions of the designers. Users who did not favour making a call to the call centre were particularly pleased with the new channel, as illustrated by the following excerpt:

I am so excited about the fact that I can actually keep track of my claims online, that I just had to tell you how great this is!!!!!!! I hate to use the phone, but love to go online!!! Thank you for a great opportunity that you give to your members!! (Online feedback, October 2001, line 478)

SSTs provided an interpretive scheme to designers that convenience and 24/7 availability would attract users to the channel. They assumed that the SST was a facility which users would prefer

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to use rather than traditional channels. However, they were communicating a set of values and norms, such as call reduction, that were of more interest to the firm than to the user. As a result, in this particular context, for the majority of users the use of traditional structures and practices exhibited elements of persistence. One of the main contributors to this phenomenon was the poor ICT infrastructure. In particular, bandwidth issues, intertwining with the poor design approaches adopted internally, severely constrained the use of the website over the years.

... the site looks great but is painfully slow to use – especially having to enter invoices line by line and having to wait for a graphics intensive screen to load for each and every line. And having to wait for the bank details and conditions of use pages after every single claim! Surely this could be made much more efficient. (Online feedback, June 2001, line 188)

I have tried 4 times to register my claim, and obtain errors constantly. As I am an IT consultant involved in e-business design, I recognise when a company is trying, but rule number 1 is: make it work the first time, or don't take it live at all. The registration process was frustrating as I had to interact telephonically to be confirmed, then when I could register a claim it works poorly. Good intentions, poor execution. (Online feedback, October 2001, line 483)

I am very appalled by the speed or response time from the H-World web site, how can one gain access to all the info and receive reward points when one cannot even access the site properly. I currently have a corporate T1 Line so it is not my line speed; all other websites fly except this one. (Online feedback, June 2003, line 3162)

Queries seem to be slow - can the database engine be improved (or is it bandwidth related - I log in on a company network with massive bandwidth, but the gateway to the .co.za net seems congested from time to time. (Online feedback, August 2003, line 4385)

Defects in the design of the SST reinforce the notion that SSTs do not exist in a private world. They exist in a world of shared practices. The traditional systems environment was primarily concerned with serving the traditional channels and existing functional areas. There were clearly contrasting structures of signification between the two systems areas. The predominantly conservative culture in the traditional systems environment legitimated existing work practices which were less ‘glamorous’, and viewed the SST as an unwelcome overhead. The SST brought with it a challenge to existing structures and created a ‘system contradiction’. Thus relationships between the two system areas were poor, and as a result interfaces were clumsily designed. This had an immediate effect on the user’s experience as it translated into technology, process and design failures (as illustrated in the excerpts above).

Ironically, most employers who had offered their employees consumer-driven healthcare products were drawing on their modality of protecting corporate information assets as a priority,

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thereby restricting Internet access to employees at the workplace to alleviate security concerns. In this instance, I will show how employers drew on values and norms biased towards interests of productivity that direct and enforce how ‘working time’ should be utilised.

For the poor and marginalised groups, they were by implication already excluded from these innovative services. As Castells (1998:74) reminds us:

Areas that are non-valuable from the perspective of informational capitalism, and that do not have significant political interests for the powers that be, are bypassed by the flows of wealth and information, and ultimately deprived of basic technological infrastructure that allows us to communicate, produce, innovate, consume and even live, in today’s world.

Next, the decision not to provide online sales capabilities for the local market highlights the contested power relations and negotiations between the new channel and traditional broker channel. This is reflected in a comment by one of the senior managers:

The Intermediary channel of UAG has been one of the success aspects, and not one that we would go to be messing around with. So, the advent of a direct to consumer channel would probably cause some kind of dissent amongst our diehard intermediaries. (Operations manager, interview 22, p 20)

Professional networks played a dominant role in the firm’s economic interests. In the healthcare market these are shaped by social and kinship obligations or as embeddedness (Granovetter, 1992; Schultze and Orlitzki, 2004). The threat of e-commerce to destabilise these relationships could impact and heighten the levels of distrust between the intermediaries and the firm. Therefore the marketing director and CEO of the life business voiced their reluctance over the potential use of the Internet channel to sell products directly to the market. However, as with the UK and US venture (below), these social networks were interpreted differently. Nevertheless, the prevailing social networks served to constrain the implementation of the self-service technology as a direct to consumer sales channel. The next two excerpts describe the users’ inability to evaluate HIC’s different plans to make a purchase decision and demonstrate the effects of omitting the role of the sales channel from the design of the SST:

One wonders: what is the point of having to register to use your site!!!! After completing the registration procedure, I can still NOT get any detailed information on your HIC Health plans - which is ALL I really wanted ... I personally don't see why I have to register at all, in order to obtain product info. I understand registering to use on-line services, but requiring people to register (and disclose personal particulars) simply in order to obtain the information required to potential invest in your products is unfathomable. I was clearly

under the mistaken impression that you were in the business of selling medical aid plans. If this is the state of your website, I wonder what sort of hoops I would be expected to jump through to obtain such a plan, and whether I would be similarly dissatisfied. (Online Feedback, March 2001, line 304)

I want to investigate the various medical aid options that HIC has, as I am considering leaving my current medical aid and joining HIC. I cannot however get this information from your website which is really frustrating. I registered myself as a guest yesterday as I am not a member and I logged in under my guest login, but I am not allowed to see the things I want to see because it says I must log in to view the product option, in other words be a member. I presume to be able to click the links on the RHS [right hand side] of the screen. (Online feedback, October 2001, line 487)

Clearly sales of insurance products by intermediaries are implicated in operations of power. Intermediaries can be viewed as authoritative resources of the firm that control and coordinate sales activities in the South African market. Being an authoritative resource that has access to sales resources, any attempt to bypass intermediaries could potentially damage the growth aspirations of the firm.

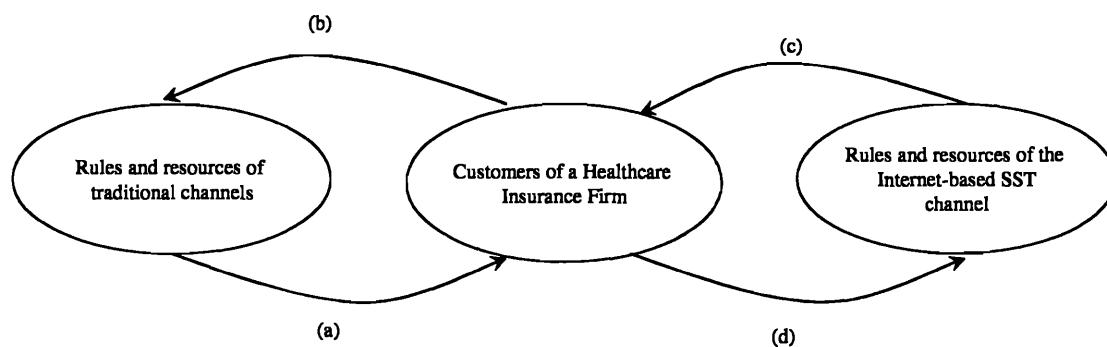


Figure 7.4 Linkages with customers in the context of traditional and novel channels

Source: Adapted from Orlitzki (2004)

But for most of the members at the time, speaking to a call-centre agent when engaging with their health insurer was well routinised in their lives. Figure 7.4 illustrates how this shift to self-service had implications for members whose identity the designers of the SST were attempting to reconstruct. A number of reasons made it a routinised practice for members to speak to call-centre agents.

First, the Web was entrenched in new norms. For instance, one needed to ‘register’ to use the online service, and one had to determine one’s user name and password and remember them. But to interact with the call-centre agent, one had only to use a phone number and have access to

one's membership number and ID number as part of the member's identification verification process. In contrast the traditional practices were well institutionalised.

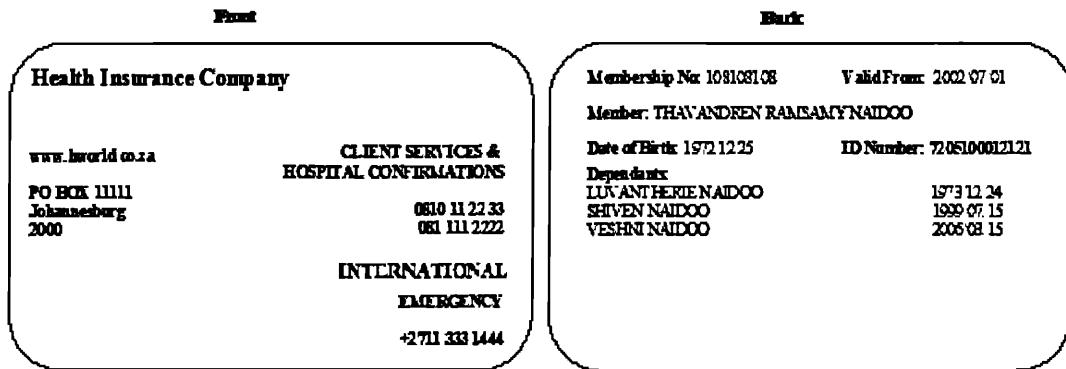


Figure 7.5 Sample membership card

Consequently, security concerns were constraining the use of the SST, whereas the conventional channel, in the form of the telephone, is accessed using a telephone number. As illustrated in figure 7.5 the telephone number is inscribed in the membership card. The membership number is provided to a call-centre agent, who is then able to facilitate the discussion with the member. One of the users expressed her satisfaction with engaging with the call centre in following manner:

... dealing with your Call Centre guys is JUST GREAT ... once you give them the membership number they have the information on their fingertips. Also the folks just seem to be enjoying what they're doing ..a pleasure to deal with ... (Online feedback, June 2001, line 218)

The extent of this problem is reflected in concerns raised by users as they grappled with the complex registration process:

Your registration process fails dismally! Having received access codes by e-mail for both my wife and I, in both instances reverted to a notification method despite confirming things like bank account no. with the call centre. I was also supposed to get priority registration! I'm still waiting 24hrs later! (Online feedback, July 2001, line 278)

I find it difficult to believe that before full access to the member site is granted I must receive a phone call from 'SOMEONE' that identifies themselves as working for your company and then requests me to supply information such as my ID number and address over a cellular phone. This compromises any concept of security that you may be attempting to enforce. Surely verification by electronic means serves to be more secure. How am I to know that it was in fact a representative from UAG contacting me. In the wonderful world of digital certificates and 128 bit encryption, surely it does not require too much to verify my

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credentials by some means other than a telephone call. (Online feedback, August, line 577)

Apart from the greater cognitive effort required, the problem of forgetting passwords is probably greater for services such as healthcare insurance where for most individuals it is a low involvement product, unlike banking – and hence online banking – which is already more routinised in the lives of Internet users. In other words, using an online banking site monthly means that you are less likely to forget your password, compared with healthcare insurance, where events to prompt the general user to use the online facility are infrequent. With health insurance firms, unless one is prone to sickness, one has a mostly hands-off relationship with the provider. These remarks by a few senior managers allude to some of the differences between online banking and e-health services:

... I think the, the nature of our business, unlike banking, where you are required to interact on your account... So, it is a dynamic that we have given a lot of thought to, and we continue to juggle with over the challenge into how we exactly get people to come back to the site. (Operations manager, interview 22, p 11)

I think banking is relatively simple in comparison to us. Money going in and money going out. I mean, our product is more complicated,. (Community head, interview 55, p 23)

But I also think the nature of the product. Because the cheque account doesn't really change. You know what I mean? You understand how it works. So, where we introduce different things along the way, the product rules changes, limits changes, legislation changes. So there is always, you know, your family changes, you have different claim requirements, your needs. The way the doctors behave different, differ over time. So, the doctor might be inconsistent in the way he handles the claims, and sometimes the treatment . . . There's many unknowns. Many changes. (Programme manager, interview 42, p 35)

If I think of a banking transaction, it is a payment, or it is a transfer, order a checkbook, or it could be the derivative of a payment, like a recurring payment or many payments. But so it might be payment for a timeframe. From a medical aid point of view, there is probably a number of different kinds of transactions that you can do online today. You can do a pre-authorisation, you can do your claims, you can do in the UAG space all the Wellness checking. So I think there is more opportunity for providing online capabilities for a wider range of transaction types in this situation.. (Project manager, interview 33, pp 12–13)

Whereas banking transactions are frequent and the ‘language’ of banking is standard across banking institutions, the complexity of the health insurance product and its associated jargon were serving to constrain the use of the online channel. Embedded in the products is jargon like medical savings account, self-payment gaps, above-threshold balance, cryptic and abbreviated claims reason codes, all of which are beyond the understanding of the average user. A remark by

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a user demonstrates the frustration that is felt because of the product complexity and its associated language:

... could you please dilute your language ... not every member is highly educated to can understand your oxford english. the purpose here is to transmitt info and not to impress via language protocol or style ... (Online feedback, July 2003, line 2648)

However, banking terms such as withdrawals, transfers, borrowing rates, lending rate, deposits and overdraft are well accepted and are part of the individual's practical consciousness. On the other hand, consumer-driven health insurance concepts are unique terms and for most members are not institutionalised in their social practice. In reviewing the medical savings account concept, while it sounds as if it should work like a bank account, it is subject to limits such as the tariff rate that the provider charges, the condition or procedure one is being treated for, or the health plan one has chosen. In addition, these products contain a host of other actuarial, clinical and commercially loaded language. For example, above-threshold balance, self-payment gap, medical aid rates, and private rates introduce a new language. Furthermore, while bank products remain fairly stable, health plans are subject to significant changes in terms of benefits structures and so on. While a call-centre consultant has the ability to retranslate these terminologies based on the impression he or she formulates of the client – that is, he or she has the 'interpretive flexibility' to retranslate consumer-driven healthcare terminology to facilitate client understanding – this capacity of the human agent is beyond that of a resource such as an SST.

It is not surprising that many members often face difficulties when they use their health insurance. During focus group sessions with call-centre staff it was not uncommon to hear that members often thought they were covered by their health plan and later discovered that their bills had not been paid. According to call-centre statistics, most queries by members are related to claims and product information (see figure D2 in appendix D). Therefore the jargon of consumer-driven healthcare products is often an administrative nightmare for members and healthcare providers, and equally for the healthcare insurer. Members do not appear to understand their benefit structures and providers are also overwhelmed by the different options. The unintended consequence of consumer-driven healthcare products is that their complexity introduces an administrative servicing challenge for the firm. While the profits of these firms are apparently associated with their product's ability to 'empower clients', ironically the cost burden

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appears to be inherent in the way it imposes its own complexity on the consumer. Indeed, the notion of customer empowerment is restricted by the norms of the product itself.

Still related to language, another restriction imposed on the SST was that all content was to be presented in the English language. Post-apartheid, the Afrikaans community have been confronted with the down-scaling of their language in academic institutions, the public sector and the private sector. Furthermore, given South Africa's diversity, 11 official languages were promulgated by the state. HIC had opted to have only the English language sanctioned as its corporate standard for political correctness and efficiency. After all, offering services in some of the other 11 official languages would simply result in added costs to the organisation and create controversy among social groups associated with languages that were excluded. Language is central to the way in which people draw on social structures to engage in their daily practices. These remarks by users indicate that as a result of the product jargon, not having the SST in their own language was exacerbating existing barriers to adopting the self-service technology:

Wat van ons Afrikaanse mense.?? Gebriuk meer verstaanbare taal ...
(Retranslated: What about us Afrikaans people.?? Use more understandable language ...)
(Online feedback, January 2002, line 917)

Geen Afrikaans? Hoe dan nou mense? Of is ek blind? Ek is seker amper die helfte van julle kiente praat Afrikaans.. (Roughly retranslated: No Afrikaans? How come people? I must be blind? I am sure at least half of your client base speaks Afrikaans ...)
(Online feedback, January 2003, line 2555)

It would be nice if we had the information in another African language (eg Zulu or Shangaan). It's not easy for me to find what we are looking for in this somewhat difficult language. (Online feedback, April 2003, line 4004)

Corporate policy to standardise language usage further constrained the use of SST. Although the SST was restricted to one language, most of the call-centre consultants were bilingual (English and Afrikaans). The language barrier therefore contributed to the poor use of the SST and persistent use of the call-centre channel. By excluding other languages, for certain major user groups the firm had in effect curtailed the social structures of communication that enabled the interaction and reproduction of interactions with the SST.

Elements of sexist structures that persist in South Africa today are symptoms of an enduring patriarchal society. These structures, which stretch into broader society, also influence the design

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of SSTs. For instance, the current identities based on the roles contained in the health insurance policy were insufficient for the user requirements of the SST.

I have sent four requests for help with accessing the site, to no avail. I completed the new registration process and although it was confirmed with my husband, the main member, I am still unable to gain access. I have also reported this difficulty to [HIC] customer services. Needless to say, I am not amused. (Online feedback, July 2001, line 331)

My husband is the main member. He does not do the internet thing ... he does not do the computer thing because he works and does not have the time for nitty gritty things. I have to do it. I am his spouse and you are just wasting time trying to contact him to register. Why on earth can I not do the registering? I don't know why you even waste your time to have a website. This is a shocking service you have. (Online feedback, April 2003, line 4022)

I have been an avid fan of the [HIC] site over the last year, but I am disappointed to find that 2003 does not give me access to the nutrition centre – as a spouse dependent. Although my husband is the principal member, I am the one checking on statements and making use of facilities such as HIC baby ... why the access denials? (Online feedback, April 2003, line 2475)

It appears that in a patriarchal society many women play a lead role in managing the day-to-day medical aid practices of the household. Apart from issues with the registration process and passwords, social roles present further challenges for the SST designers with regards to identity management and access control. In this instance, the designers had to inscribe extended roles to spouses, typically the female member of the family, so that they could access and perform the same operations as the main member, typically the male member of the family. As the excerpts above also demonstrate, the mandatory confirmation by the main member, the authoritative source, was required by H-World before such access permissions could be granted by the firm. This policy and its related processes were viewed as a constraint by many users. This created frustrations among the users who by virtue of the health insurance policy were spouses. In contrast, because of their role in their social world, wives often practised the lead role in managing healthcare issues. Therefore the designers had to realign roles based on the policy level more closely with the social practices of the members. More importantly, this observation contradicts gender difference studies that claim that usage of the Internet is lower among females (Elliott and Hall, 2005). This study illustrates the limitations of gender studies on SST use if they do not seek to understand its social context.

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Giddens (1990) suggests that many of our modern abstract systems are prone to *design faults*. While ideally design faults should be totally eradicated, this is more complicated and difficult to achieve in social systems. The lack of skills of the designers, the inability to re-use existing system components, lack of organisational readiness, the time pressure to deliver, the persistent use of traditional channels and so on created a number of contradictory outcomes that had not been intended by the designers. The view of this user (below) is evidence of how greater trust for call centres was reinforced by design faults inherent in the SST.

You will not have happy clients if, after taking the time on the very slowwww system to update their details, clients find that they cannot save the information ... e-HIC still has a way to go but the service from the call centre is excellent. Hope you fix this soon. (Online feedback, October 2001, line 512)

Giddens (1990) also refers to a second factor, namely *operator failure*. Operator failure of an abstract system such as an SST results largely because those who operate it make mistakes. While Giddens (1990) acknowledges that good design can lower the possibility of operator failure, he asserts that the risk of operator failure is always likely when human beings are involved. In the SST context, operator failures apply equally to those who design the system and those who use it.

The truism that familiarity leads to predisposition was certainly evident in the manner in which users persisted with the use of the call-centre channel. A general attitude was evident that there was a need for interaction with service contact, as opposed to avoiding service personnel. Certainly users were making cognitive evaluations of their channel preferences in their practice of using the alternative channels. Therefore, the more the unfamiliarity with the channel, the greater the cognitive evaluation of the time it takes to use, the effort required, the complexity of the process, and the reliability and accuracy of the outcome. The users must also feel a degree of control over the process. In other words, all these facets described above must be more effective online than in the use of the call centre or any other alternative channel. Even elements of operator or user-driven failure – such as ‘I forgot my password and was unable to view my claims’ – often lead to dissatisfaction with the channel and thus a tapering of users.

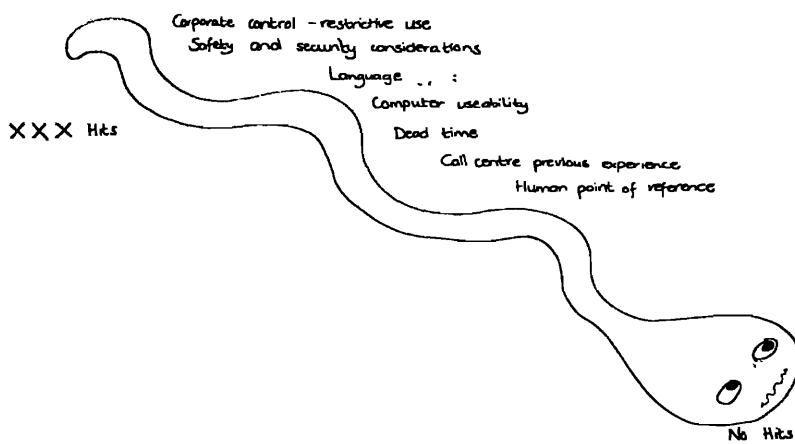


Photo 7.1 Some reasons for tapering usage at a user workshop

Source: Bataleur, H-World Customer Satisfaction Survey, September 2004

Nevertheless, over this period, the marketing of the self-service in UAG's magazines and via the call centre had resulted in a significant growth in the registered user base. Despite this, there was a fairly abrupt transition from a strategic business unit to a mere e-commerce department. This resulted largely because of the spate of dotcom failures and the inability to deliver the initial projects on time. On reflection, there was also greater circumspection about the practical realities of achieving the 'revolutionary' rhetoric associated with the new channel. Furthermore, with the previous technocentric structure, 'the technology tail was driving the business dog' (Wilcocks *et al*, 2000). To improve relationships between the IT departments, the e-commerce venture was integrated into the IT division of the parent firm. Business units were also to play a more prominent role in directing the implementation of the SST.

Unfortunately after the dot bomb the board was very hesitant to release any further funding ... I think it was a saving grace in that they pulled us back into alignment with the organisational objectives and rather than we becoming a profit centre we became a cost centre. And it gave us a little more flexibility to have funds channelled to us to deliver the functionality and facilitate the objectives of the organisation. (Operations manager, interview 22, pp 4–5)

Meanwhile administrative costs continued to rise as elaborate changes to health plans that rationed care shifted more and more of the costs to members. Consequently, the limiting of care resulted in many more finance-related queries being serviced. The irony is that the most popular queries serviced online and offline were related to claims settlement issues. As the insurer began

to limit services and restrict access to treatments, it became increasingly important for consumers to monitor service failures. In other words, customers were being empowered to manage the growing complexity of the health plans they purchased.

There was this realisation that the SST was not having a dramatic effect on administrative costs as anticipated. As the firm experimented with the SST, the way in which the technology was being used began to shift. Given the commercial success of WSC in helping HIC differentiate itself and attract a healthy member base, the SST was to play a major role in enhancing the value proposition of the Wellness program. During this period the firm was aggressively engaging in product development for the wellness space. Part of the demonstration of value of the wellness product was through the interactive use of the online channel, which I will discuss next.

7.2.3 The channel that dazzles

During the ‘dazzle era’ there were certainly further clashes between the insurer’s interpretive scheme and the regulator. In this era, the regulator showed particular resistance towards risk-rating, where, on actuarially and financially sound principles, healthcare insurers increased the contribution costs of vulnerable groups, mainly the sick and elderly. While the language of finance and economics was the concern of the insurer, the language of equity and access guided the regulator. Partly to overcome the specific reform over risk rating without violating the rules of the regulator, HIC developed the wellness concept, which by design was aimed to appeal to the young and healthy market, thereby calculatingly reducing the overall risk pool of the insurer.

This excerpt supports this notion:

At the time Wellness was becoming increasing popular. It was a rewards programme although they always called it a healthstyle programme that incentivised people to live healthy and in return they would get reduced prices on a number of things from airline flights, to gym contracts. The Wellness benefits were very good deals. And although the actuaries may tell you that it has enhanced the health of its members significantly, I think the biggest benefit to the company was the appeal of the Wellness programme to the young and healthy thereby reducing our risk pool. (Senior business analyst, interview 51, p 2)

The organisation positioned wellness as an attempt to curb healthcare costs by focusing on wellness rather than on illness. Inscribed in the design of their products was the basis that ‘prevention is better than cure’. Whereas health plan components such as the MSA were developed to make consumers accountable for the financial consequences of their decisions, the

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wellness component aimed to reward appropriate behaviours. As opposed to gaining market share by drawing attention to health plan coverage, the wellness component was marketed on the premise that healthier lifestyles could translate into long-term savings on healthcare costs for the employer and the individual. During this time there was increasing consolidation in the healthcare insurance market, with the major insurers competing fiercely to sign up members. The wellness concept played a significant role in differentiating the HIC product in the marketplace and therefore attracted the attention of brokers and employers, and subsequently led to significant growth being achieved by the firm.

The website provides the space where every member can maintain their health or improve their health and their status, you know, the higher the status is, they will be rewarded for their healthy behaviour. Wellness' goal is to educate members on how to look after their health, and awarding points to drive that type of behaviour. (Community head, interview 26, p 11)

In supporting the wellness business during this period, 'dazzle the customer' was the most frequent cognitive frame employed by the e-commerce department. Despite the reshuffle from a SBU to a department, sense making around the SST in this vein reaffirmed the e-commerce department of their identity. After all, the SST was to play a significant role in the innovative Wellness program, using state-of-the art technology.

The most experienced team of developers and business analysts were seconded to support this initiative. Meanwhile, as a department within the IT division, there was now more emphasis on the project review process during this phase. Although there was slightly more discipline in the development practices, again minimal standards were complied with, such as the completion of the business requirements statement and project plan. This excerpt describes the ethos of low level ceremony that surrounded some of the projects:

If there is a business request he (referring to the business analyst) will come and discuss it with me briefly. He draws up the spec which includes the screen flows, use cases depending on whether we need use cases or not, the business has to sign off on the screens and basically the spec comes back to me and I look at it and depending on the complexity... so I will discuss it with the developer who's going to work on it. Its also time dependent, so if there is a short deadline there is no time for formal design and all that. So whiteboards become very useful. (Developer, interview 016, pp 6-7)

The online nutrition and stress centres were the two major projects implemented in this period. Both these projects were attempting to replace wellness practitioners, which included the dietician as well as the stress therapist. Giddens (2004) refers to this 'lifting out' of social

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relations from local contexts of interactions and their restructuring across indefinite spans of time and space as *disembedding*. Following Giddens (2004), the SST can be regarded as a disembedding mechanism. More specifically, the SST exemplifies a type of disembedding mechanism referred to as an ‘expert system’. An expert system in this instance is unrelated to the computer science conceptualisation. Instead, it refers to technical accomplishments and professional expertise that organise substantial areas of the material and social environments in which we carry out our day-to-day practices (Giddens, 2004).

Agents typically place ‘faith’ and trust in the competence of expert systems, such as those represented in the form of a call-centre consultant, broker or wellness practitioner. The agent accepts the risk when relying on the expertise of these expert systems. In other words, expert systems provide ‘guarantees’ of expectations across distanciated time-space. For example, the agent relies on the accreditation process which evaluates the broker’s competencies as a financial advisor, although agents are far removed from the accreditation process itself. In the same way, SSTs act as expert systems of behalf of the firm that remove social relations from the immediacies of context, that is, they reorganise social relations across large time-space distances (Giddens, 2004). The potential advantages of time-space distanciation presented by the SST, both for the firm and for a wellness practitioner, are reflected in the following comment by a stress expert:

I mean, you know, it is much better reaching 50 000 people, than having a personal interaction with a 100. So, my philosophy again is, I am basically a communicator and then a teacher and then a healer. It is using all of those to teach people ways of taking control over their health. As I have said, you know, it is much better, even if you just create a sense of awareness amongst 50 000 than a 100. So, you get the message out there to a lot more people than you would in any other medium. And, I mean, that is the way that the whole world is moving. It is Internet ... you can actually speak to people in Australia who are living there but who are still on HIC, or who are touring in Europe. I mean, and they are on Wellness and they go to an Internet café. So, you are not limited to any certain space and time. You can really, you know, go out there and send your message all over. And of course then, what also happens is that any one person who accesses the Stress Centre can tell you many other people about it, and say, go and do it. So, the whole the dissemination where as you as an individual would never be able to reach so many people. (Stress expert, interview 35, p 13)

As the above excerpt demonstrates, the aim of the firm is to enable universalisation and mass production (Sahay, 2003) of the wellness practice. The SST initiative can be seen to be largely technocentric, interlinked with commercial rhetoric. Whereas traditional wellness encounters between patient and practitioner control space, thereby restricting the possible number of

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interactions, with SSTs, through their control of time and absence of the wellness expert, the opposite occurs. SSTs produce ‘action at a distance’. Therefore in the altering of space, absence predominates over presence (Sahay, 1998), thereby increasing potential interactions. When using the online nutrition centre at a coffee shop, the user remotely operates her nutrition self-assessment form so that the system can provide her with a meal plan recommendation. In this process, the user captures a range of inputs related to her current weight, age, height, and waist measurements into the system. Thus, the SST enables the user’s control over time by performing action at a distance. There is no need to schedule an appointment with her dietitian. SST technologies thus reflect inscribed assumptions of autonomy for the user and reach for the firm. However, these inscribed assumptions make their application problematic in the context of wellness. Traditionally, wellness practitioners depend a lot on information that cannot be transmitted easily online. Part of the problem with ‘remote’ weight loss or stress tools is their lack of surveillance when compared with peer-based programmes or face-to-face encounters.

... The advantages of going to a dietitian, you go into a professional environment, you are having that contact with the dietitian who can read you and build a relationship with you and become a partner in this process ... I think at the end of the day it (the online tool) is no substitute for that human contact ... What I mean is that the body language and the personality and you get to know the person, and you get to understand them and understand their lifestyles. (Nutrition expert, interview 46, p 15)

The ‘motivation’ role that a traditional wellness practitioner plays in her face-to-face encounter with the patient is also missing in the inscriptions of the SST, as this excerpt points out:

... I think motivation is a huge issue. I think because a lot of people associate eating with pleasure and not really with health-giving properties, I mean I am really generalizing now because there are people out there who do eat for health, but food is always around in the social environment while we are being entertained at parties, at social functions, and I think one of the challenges a dietitian faces is that she is almost seen as the prophet of doom. You know normally dieticians are always seen as giving the bad news, ‘what you can’t have, what you shouldn’t eat, what you must avoid’ and these things are always there so that is a significant challenge because to get somebody motivated to override sensory pleasure for long term health is not an easy task. It’s the same challenge that a biokineticist will face for encouraging someone to exercise. So the motivation to actually follow the plan is extremely difficult in many cases and linked to that is that your success is completely dependent on the how closely the person is following your advice and once they leave your room you have absolutely no control over them. So a frustration that many dieticians experience is that they spend a lot of time and put a lot of effort working out individualized meal plans and recipes etc for the person and they may follow it for a few days and then the novelty starts to wear out if they are not losing weight fast enough ... (Nutrition expert, interview 46, p 14)

Following Giddens, it is apparent that the SST separates wellness practitioners and the patient in time and space, breaking the interpersonal connection between them which the practitioner

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normally uses to apprehend the *condition* of the patient. Shared physical presence allows for continuous inter-subjective orientations between the practitioner and the patient, and facilitates multiple role-playing. SSTs alter the context in which relationships take place and the traditional manner in which the practitioner develops and maintains relationships with the patient through physical contact. This distorts the role of the traditional wellness practitioner.

The following excerpt suggests that there are broader structures in place that constrain the services offered by the online and traditional wellness practice environments.

... there is just so much competition from products out there on the market and quick fixes, Everybody has a solution to permanent weight loss without hunger or exercise and dieticians are constantly trying to bring people back to basics, help them through these advertising campaigns and marketing messages that are out there cos' they confuse people. Magazines are telling them different things, and of course even dieticians might disagree like two doctors who may prescribe different antibiotics. It just the way they practice. Dieticians may also prescribe different eating plans or have different opinions on things which are also difficult because the public is confused. So these are some of the challenges. (Nutrition expert, interview 46, p 14)

Other market mechanisms outside the health insurance firm are vying for the consumer's attention. The content delivered by the media plays a central role in how consumers construct their values and rules of behaviour. In an economic system that focuses on the narrow dictates of profitability, obesity has become big business for the very system that influenced it. Indeed, consumers are overwhelmed by the variety of diet schemes and weight-loss advice and products that are available in the marketplace. Even the dietetic practice itself is subjective, with different schools of thought making dissimilar claims about the best approach to weight loss. For instance, some focus on calorie reduction; others focus on the types of food groups (protein, carbohydrate, fat) such as low GI (glycaemic) index, and the use of supplements and so on, all serving to confuse the consumer.

Furthermore, food is an important actor in our day-to-day social practices. The Internet highway as a stop for online wellness tools is now competing with the more resilient structure of our road networks. Ever since the growth of car sales and the subsequent growth of suburbs – growth which road networks had encouraged – fast food organisations have grown into sprawling multinationals by exploiting prime locations within these highway networks. Even in developing countries like South Africa and in fact in many other countries around the globe, corporations like McDonald's have exported the values and tastes of their local culture. With this

homogenisation of international fast food culture, countries have not only lost their identity in terms of how, where and what they eat, but they have also exposed themselves to major health risks (Schlosser, 2002).

In most modern societies the traditional role of housekeeping has been displaced because lower-income ratios force both parents in lower- and middle-class families to work. Therefore for many households, fast foods and convenience foods have replaced the traditional home-made meal. In addition, despite the recent introduction of health warning labels, tobacco and alcohol companies continue to invest significantly in advertising at sports and cultural events, thus relaying the association of healthy and pleasurable activities with their products to a broad base of society. Furthermore, rising multinationals have changed food processing and production for commercial gains. For instance, meat produced by these industries contains alarming amounts of growth hormones, antibiotics and pesticides to increase productivity at the cost of potential safety and health hazards. Modern farming methods for fruits and vegetables that rely heavily on artificial fertilisers and pesticides have led to tradeoffs such as reduced nutrition. Furthermore, in most food manufacturing processes of staple items, such as flour, rice, and sugar foods, chemicals are used in the refining processes to increase productivity and the shelf life of these items at the cost of decreasing their nutritional value.

At the same time, changes in living and working patterns have resulted in a reduction in physical activity. To exacerbate the lack of physical activity problem the television and ironically the computer have also contributed to the relatively inactive lifestyles of people. Consequently, the consumption of tobacco, alcohol, processed, ‘fast’ and convenience foods are corresponding easily into the day-to-day practices of most people (WHO, 2002).

In this instance, we saw how broader social practices which have become persistent over the years are implicated in constraining the use of the SST as a tool that enables behavioural changes related to wellness. As a result of the pervasiveness of these broader social structures in modern society, behavioural changes are difficult to make, even with the guidance of a practitioner, let alone via a self-service technology. An excerpt by a wellness practitioner describes the challenge:

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Behaviour change is an extremely complicated thing. It is. I mean, everybody who has been on a weight loss program knows that you can be as disciplined and, you know, with exercise as well for two or three weeks and if you skip the week, you have to start from scratch. I mean, people go into the behaviour change for six months, and they leave and then they have got to start, and then they have lost all that motivation. So, if people lose interest, the thing is, if they, if they had learned what they wanted to here, they would actually come back to keep on motivating. Because we need to sustain that devotion. If they have lost interest, they are a loss to the cause; they are back to old behaviour. That, that is what I have learned, you know, through experience. (Stress expert, interview 35, p 33)

Furthermore, the degree to which SSTs reflect the same attitude of trust and reliability which is so essential for expert systems is contentious. The following excerpt demonstrates how trust can go astray as a result of design faults.

... the nutrition centre still needs a lot of work – I have tried to do the meal plan thing and can't make it work and there is no understandable HELP section to help me. I have addressed questions a few times and received no answers at all. (Online feedback, October 2002, line 2440)

So how did the users feel about using these wellness tools online? For one, SSTs are subject to greater interpretive flexibility than systems designed for internal users. The registered user base continued to fluctuate around 20–26% of the member population.¹ Nevertheless, the focus on wellness contributed significantly to the growth of the registered user base. Ninety per cent of all users registered on the SST were also members of the Wellness program. The following excerpt by one of the senior managers discusses the ability of the Wellness program to attract users.

And, I think, thankfully for programs such as Wellness, the attention factor and the ability to reap rewards from certain behaviour, and going online to gather those rewards, such as flights online and so forth, have added greatly to the number of interactions one would require to have than with your typical medical aid society. So, no longer is it, did I have claims paid? It is also now to get my rewards, how many points have I got right now, what kind of rewards are due to me, and where can I go spend it or purchase cheap value added things from the various partners? (Operations manager, interview 22, p 11)

While the wellness tools did attract most of the users, they were not as popular as the applications that were concerned with the members' health plans. The monthly management report indicated that applications related to health plan issues, such as the online claims applications, were used as much as five times for every single use of the nutrition centre. Furthermore, only 10% of the registered user base had registered to use the nutrition centre. And given the tapering use among the majority of the users who signed on to join the nutrition centre, there was this impression that many users were joining merely to obtain Wellness points. The

¹ This figure must be understood in the context of children or other dependants who are included in the calculation of the member population.

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Wellness program became an enabler of SST use with several unintended consequences, one of which (as the excerpt below suggests) was to earn points easily. After all, unlike other avenues for points, which required behavioural change like gym visits, quitting smoking, and losing weight, users merely had to login to earn points.

Well, one of the reasons why we gave people points was to attract people to come on the website. But these people were coming onto the website purely to chase points, and to move up statuses ... because motivation in terms of things like online travel bookings, which has, incidentally, come down since we have taken the points the way. (Systems architect, interview 43, pp 6–8)

I find the service from the website unacceptable. My husband purchased a large Life Policy through [LIC], he got 2 500 Wellness points, but not the 5 000 points for purchasing the policy. I reached zone 6 on Weigh Less, but have not had the points for this either ... I frequently read self help articles, but do not seem to receive the points for doing this. (Online feedback, August 2003, line 4453)

As the excerpt above serves to illustrate, one of the unintended consequences of supporting the loyalty program online then was that it created easy access for point chasers who were not genuine users of the website or converts to the Wellness program. Meanwhile, only a minority of users achieved gold status on the Wellness programme. The reality was that when the program was followed by a member, it did show benefits in terms of his or her health and subsequently his or her claims ratio, but only a few members instituted the programme religiously in their day-to-day practices. The Wellness program was functioning more effectively as a sales mechanism than a lifestyle-changing programme, as this excerpt suggests.

Well, a lot of people will say the reason they stayed this long on HIC is Wellness. The weird thing is even if they don't use the benefits, they still believe that. And I think that what actually is interesting is a lot of these medical aids companies, their service in terms of payments, is becoming fairly similar. You know, everyone will now say, we have got one day turnaround ... the servicing of clients is not as big an issue as in the past. Whereas, in the past if, it was very common, 'you guys did not pay my claim!'. And I think most of the medical aids have got servicing right in terms of payment processing. All electronic, it can't really go wrong. So, the primary incentive for members to move ... are moving to HIC, probably because of Wellness. You know, 'I am going to be part of your home loans, I am going to pay your groceries, I am going to do this, I am going to do that'. (Systems architect, interview 43, pp 6–8)

There are ethical dimensions to consider in the use of rewards schemes in the healthcare insurance environment. However, government seem unable to control by political means the use of marketing and psychology techniques to entrench consumerism in the healthcare space. Increased regulations are obviously not welcomed by the financial services business

'libertarians'. Meanwhile, reward schemes are becoming more pervasive. Many other firms and websites that can be more competitive with the pricing of their core products and services have begun to offer travel, holiday and other leisure discounts.

In summary, structures such as television, alcohol, tobacco and fast foods that support poor health are well entrenched in modern society. These structures enable the general apathy in healthcare to facilitate the re-enactment of poor habits as opposed to wellness programs. Furthermore, arms-length relationships do not work in the wellness context because the tacit knowledge of wellness experts cannot be easily inscribed into the SST (Pan, Newell, Huang and Galliers, 2007). In addition, the focus of the wellness applications on preventative care specific to nutrition and stress was too narrow. Here again they exclude the integration of these components into more serious medical conditions. By their design then, the applications were more suited to younger and healthier members than members with chronic illnesses.

For instance, in transferring best practices and procedures such as wellness programmes between contexts and countries, critical health issues facing a particular context are completely ignored, dismissed or forgotten. For example, in the previous chapter we explored how the Aids issue has reached pandemic proportions in the South African context. The incidence of Aids in South Africa is not limited to the poor, but has also affected the affluent part of the population, which is largely HIC's member base. While the healthcare insurer impressed the importance of wellness, it failed to tackle the specific wellness aspect with regards to Aids and therefore did not drive the informational aspects of HIV/Aids on the SST. Some HIV/Aids users felt extremely frustrated at being excluded from the Wellness programme:

For the moment I have only one thing to ask and that is why as a person with HIV, I should not be registered as part of the Wellness Med program. I must have missed it somewhere, but I didn't find anything conducive to make me join, as HIV is according to HIC a Chronic Illness. Surely, it should also be part of the program???? (Online feedback, January 2002, line 788)

Given the high prevalence of HIV/Aids in South Africa, and the increasing enrolment of low-income members into the scheme, the SST could have been used to provide education on anti-retroviral (ARV) drug treatment, as well as more specific nutrition information for HIV/Aids sufferers. Apart from the absence of such a feature being an example of commercial interests superseding social interests, SSTs are not 'normally' used for HIV education by healthcare

insurers in the US and the UK, who indirectly set the standards for the design of new SST features and functionality. After all, this would not be suggested in a Gartner Survey, Forrester Report, or one of the many healthcare information management and related journals. Neither would this be a priority for leaders in consumer-driven healthcare like Aetna in the US, such that one would want to naturally emulate this as a ‘best practice’. It is interesting to observe how global best-practice standards in SST implementation sometimes serve to advance the trajectory of the technology in directions that are at odds with local needs.

Even if it did address these local needs, it is unlikely that a SST can be an effective mechanism for the ongoing management of a serious medical condition like HIV/Aids. SSTs can influence the healthcare system, but not, it appears, by attempting to become a wellness or medical expert and not by micro managing the care of the SST. Nevertheless, the SST could have played a useful role in empowering persecuted Aids sufferers with information.

Furthermore, while consumers have become more informed with the arrival of SSTs, this does not necessarily translate to any radical transformation in healthcare service delivery. For real transformation, changes must be implemented in broader social structures in combination with key actors in the health structures.



Photo 7.2 The many faces of the H-World user²

Source: Bataleur, H-World Customer Satisfaction Survey, September 2004

² An external research company engaged with a cross-section of H-World users, segmented by SST use profile to develop a customer satisfaction instrument.

Another issue was one of scalability. This analysis reveals the complexities involved in rolling out technologies to a broad audience via the online channel:

Probably one of the biggest challenges is communication to a large base. How do you get the communication to be effective? How you take it to a large number of people and how you change their behaviour and the message to be very strong to achieve that? And equally you have to listen to that base and see where you are now achieving the line of clear communications. You are not talking to people. You are talking to a mass, an enormous mass, hundreds of thousands of individuals that ultimately form an opinion. And understanding that I think is quite a challenge. (CIO Health Systems, interview 36, pp. 11-12)

In designing Web applications to enable a broad reach, one of the challenges is managing the trade-off between the practical goals of the user and satisfying the user's experience. However, within this mix, corporate goals cannot be dismissed. In addition, the role of traditional channels influences the behavioural range of the user and must be considered. As has been demonstrated thus far, the firm has paid little attention to the structure of routines embedded in traditional channels and in particular their complexity and its effects on the SST use.

As part of understanding this challenge, a number of internal ad hoc studies were demonstrating that while the registered user base was growing, users were not using the channel as intended by the designers. These studies revealed that the structures of interactions that were defined by the designers of the SST were not appropriated by the users as designed. In many cases, users appropriated the channels to suit their own purpose. The major constraint for the SST appears to be other methods of interactions that have already been routinised into social practice. Indeed the SST did not significantly change the use of the phone. In addition, the SST structure appeared to be the most malleable. In other words, what Orlikowski calls 'interpretive flexibility' is noticeably heightened in the use of the SST. Although SST technology is a strong propagator of time-space distanciation, alternative channels have already been routinised for several years. While it is a given that social practice is not static, but evolving, according to structuration theory, practice must replicate, even to remain the same.

In August 2004, the manager of the customer intelligence department and I attempted to profile the H-World user base according to the frequency of interactions with the call centre and online channel (see figure D3). Structuration theory proposes three modalities by which social context influences interaction: interpretive schemes for meaningful communication; facilities for the application of power; and normative schemes for the legitimisation of action (Poole *et al*, 1985).

Therefore, interaction cannot be studied without also considering the norms of structures within which it is situated and how those influences have shaped the structuring of interaction itself (Barley, 1986).

Lamb and Kling (2003) have argued that the current concept of the user is socially thin and needs to incorporate multiple channels, contexts and roles to enhance our understanding of the adoption and use of information systems. Based on their social actor concept, we made the an assessment of the user base. Many user social groups emerged, based on their differing interpretations, varied access to channel resources, and norms that legitimated different ‘orders’ of use:

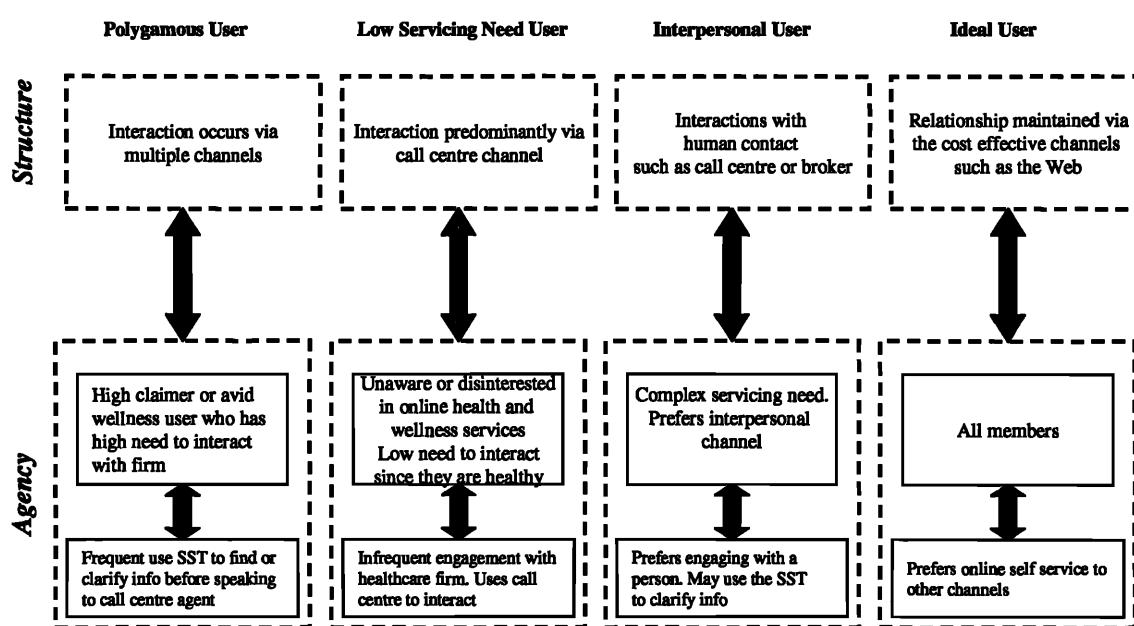


Figure 7.6 Self-service technology in practice – enactments by users as social actors

Source: Adapted from Orlikowski (2000) and Lamb and Kling (2003)

The analysis attempted to understand social practices by these four user segments, specifically polygamous user; low servicing need user; interpersonal user; and the ideal user type (see figure 7.6). Low servicing need users require fewer claims servicing and are typically not active wellness participants. They are nevertheless relatively healthy members who have a low claims ratio and a low need to interact with their healthcare insurer. Polygamous members are characterised by a high servicing need through multiple channels. They contact the call centre

and use the website frequently. They are more demanding, and typically have a high propensity to interact with their health insurer, as they experience problems more frequently with financially related matters such as unpaid claims. It is difficult to implement mechanisms to influence this category of user to switch to the online channel exclusively, since their behaviour reflects that they have certain needs that are unmet on the online channel. On the other hand, interpersonal users have high servicing needs. Their predominant mode of interaction is via the traditional call-centre channel and they prefer interpersonal contact. They may be unaware of the SST or, if they are aware, they have chosen not to register. They may be part of the population that simply does not have access to the SST. It is not improbable, given design defects and operator failure, that they represent a portion of members who are dissatisfied discontinuers of the SST. For these types of users, the firm could drive targeted registration, recovery and awareness campaigns. However, the difficulty lies in attempting to change their interpersonal preference. The ideal user type (for the firm) segment is composed of loyal SST users who exhibit a low propensity to call the call centre. Irrespective of their servicing need, they prefer self-service to call-centre interactions.

Other unintended consequences of the SST are worth noting at this point. Instead of reducing calls, the SST was correlated to customers who call more on average. Although the SST was not necessarily the cause of these calls, this behaviour was associated with the higher service demanding client. Furthermore, instead of achieving loyalty from a majority of the member base, the SST appeared to serve a minority of clients, made up of those who were had high claim propensity and those who were ‘loyal’ to the Wellness program. The differing social roles of the users emerged as they drew on their patterns of signification, domination, and legitimation to interpret the role of the SST in their environment. This ideal user type represented a minority of the SST users, and therefore challenged the notion that the SST had a critical mass of users that could justify its existence. By not serving the interests of the majority of users and interest groups within the firm as envisaged, the stability and the sustainability of the technology as a channel that could ‘dazzle the customer’ were also threatened. A new ideological constellation emerged that aimed to reconfigure the SST to reflect ‘the way things are’ (Berger and Luckman, 1967). Thus, the SST as defined by behaviour of the majority of users as a ‘complementary channel’ emerged to rescue the technology that had been thrown into crisis yet again.

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It was increasing pressure from government and regulators that pressurised HIC to become more creative and innovative in their product offerings. The Wellness program was viewed by some as an artificial way of introducing risk rating without upsetting the regulator's moral framework. After all, movies and gyms are facilities that would have a general appeal for a younger client base, and for employers who generally have younger people on their staff. Now that this approach had emerged and shown great success in growing UAG's customer base, it became the focal point in the ploy to capture customers in markets abroad. Meanwhile, the newly appointed head of the Wellness program valued the role of social relations which wellness practitioners enacted as a central feature of their work, and was opposed to the disembedded nature of social relations over the Web, which was both remote and more impersonal.

... he doesn't use the website, he doesn't like the Web. So there is obviously a natural move away from, from the Web. (Systems architect, interview 43, pp 6–8)

At the same time, the real value add of the SST was being scrutinised by different factions within the organisation, as articulated by this excerpt.

I think overall, to me, the company is at the point where, from a company perspective, they are trying to save costs. I think, if it was my organisation, I would have realised some time back that you cannot keep growing the staff numbers like we have been over the past years, since I have actually been around. So, somewhere it has got to stop. And to achieve that, you have got to have, you know achieve economies of scale ... So addressing, getting the systems delivery better, was one of the solutions. (Business analyst, interview 41, pp 7–8)

Furthermore, the regulator was applying pressure on healthcare insurers to reduce their administration costs. Despite achieving a high concentration of market share, HIC was not showing real advantages in economies of scale with regards to administration costs. The Wellness program, which was a successful mechanism for attracting healthy and lower-cost customers was also creating additional costs in administration. By making wellness their primary focus, the firm had to develop the supporting structure to sustain this subsidiary. Apart from using the SST, the firm had to employ additional staff, set up a call centre, design software systems to support the complex incentive-based programme, integrate with partners such as the airline industry, gymnasium firms and health and lifestyle magazine publishing firms, and so on. While this practice perpetuated the perception that HIC was a 'better' health insurer, improved care was being compromised by increasingly complex health plan designs, which further restricted choices of physicians and limited services to patients. Both the wellness and the health plan were beginning to increase bureaucracy and administrative costs.

It was also becoming apparent among some members of the leadership team that it was impractical to require consumers to become wellness experts and manage their own care. Accordingly there was a shift in the cognitive frame from that of a tool that would ‘dazzle the customer’ to that of a ‘complementary channel’.

7.2.4 The complementary channel

In this episode changes in internal practices associated with using the online channel were conveyed by influential individuals. In the context of the Wellness program, the CEO had recruited a new practitioner to manage the division. An actuary by profession, the new head made an immediate decision to sanction the points allocation for the use of the online channel. There was a shift from ‘click and point’ towards more points for using a network of practitioners. At the same time, a new discourse about the role of the SST began to emerge. The SST was once again legitimised by the swift modifying of its purpose to ward off the challenge by dissenting groups within the organisation, as described below.

.., I think, if we look today at where we have come, our initial objective was to convert a channel (call centre) into another channel [online self-service]. And lessons are learnt, that you know, this is a social environment, okay. There is no dominant channel. It's apparent to me that the channels are interlinked, merged, and one will use whatever is closest in proximity. (Operations manager, interview 22, pp 7–8)

In retrospect, the idea of replacing traditional channels was naively optimistic. However, this ongoing rationalisation of the SST’s purpose highlights again the reflexive form of knowledgeability that is involved in the recursive ordering of IT practice. The actual behaviour of the users reveals that for the majority of members that had access to the Internet, the SST was viewed as a complementary channel, and not a preferred channel. The excerpt above demonstrates that the surrounding world of management influences adjustments in their intentions. It also demonstrates that management had conceded that it was not within their scope to alter the behaviour of their members to use the most ‘cost-effective channel’ in their engagement with the health insurer. The majority of users had decided that the predictable routine of engaging with a call-centre consultant was still the most effective way of interacting with their health insurer. At the same time, the traditional systems department staff were

continually drawing on their customer service discourse to seek improvements in the service delivery of the call-centre systems environment. The norms and values which sought to achieve ‘reduction in call waiting times’ and improve the ‘first time query resolution’ ratios enhanced the call-centre facility and hence its dominance among members. Thus the practices of the traditional systems environment, drawing on their structures of legitimacy, and the power of the users displayed by continually drawing on call-centre facilities played a central role in the emergence of this new cognitive frame. Not surprisingly, the use of this cognitive frame as a ‘complementary channel’ evoked a less grand conclusion about the self-service technologies’ capabilities and led the development team to become anxious about their own roles in the organisation. Consequently their identities, in this case, were threatened rather than reinforced.

The following analysis examines social practice by the various user segments, specifically sporadic users, lapsed or discontinued users, habitual users and non-adopters. Individual users are embedded within social systems which influence their behaviours. For the habitual users, the self-service technology became an integral aspect of their practice of engaging with their health insurer. For these users, institutionalised practices, such as the use of traditional channels, had been disturbed, thus altering the structures of interaction. Given the practices of high claimers who are usually associated with chronic illnesses, the self-service technology is particularly important in supporting their intense interactions with the firm. As observed in their engagement practices, accessibility to claims, benefits, and funding information is critical for their quick decision making. For habitual users, the laptop or desktop PC at home or inside the office plays other roles in their social practices, apart from interacting with their health insurer. Sporadic users frequently drew on traditional channels and less frequently on the new channel. For a majority of the users, the social context had constrained their actions to use the new channel. Consequently these non-adopters and lapsed users continued to draw on the traditional channels in their interactions with the health insurer.

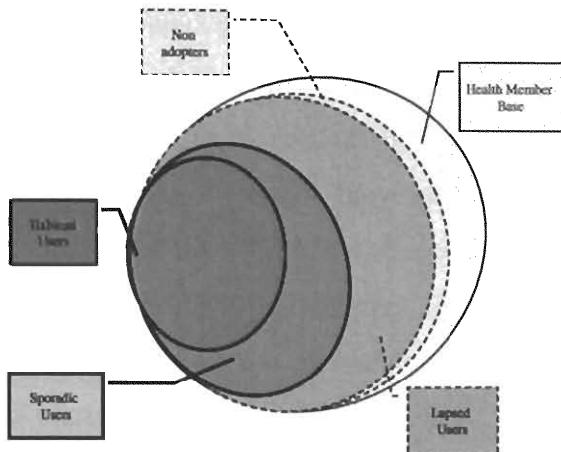


Figure 7.7 Self-service technology in practice: size representation of user segments

Easy access alone does not lead to the recursive use of the SST (as figure 7.1, and the behaviour of lapsed users demonstrates). More specifically, accessibility to the channel does not imply stability in engagement practices. Multiple factors are operating in combinations to create a context. That is, a set of conditions come together to produce a specific situation. The manner in which the channels are utilised varies significantly among users. Some assert that they prefer personal contact for particular health-related issues. For this reason, to appreciate the significance of the utilisation of SSTs among alternative channels, engagement practices embedded in a local context need to be explored. The impact of a particular channel of interaction with a healthcare insurer may vary significantly, depending on the condition and occasion it is used. Designers typically drew on the signification structure, which contained the notion that the Internet-based technology could enhance the convenience of the user by affording stable access, irrespective of the time. However, such stable and constant access may hinder the user's interpersonal interactions, owing to the overwhelming amount of electronic interactions he or she is used to. Human interaction is inherently situated in a particular context that recursively frames and is reframed by the actual practice of social action. Suchman (1987:28) argues that the 'coherence of situated action is tied in essential ways, not to individual predispositions or conventional rules, but to local interactions contingent on the actor's particular circumstance'. This may explain why more users tend to use the SST sporadically. To sum up, the introduction and utilisation of SSTs can generally support and facilitate social practices of users in engaging with their health insurer. However, the impact that they hold and the extent to which they influence can vary according to how and in what context SSTs are being used.

During this period, we presented ad hoc reports to management demonstrating the significant loss of users. When reviewing lapsed users, although various dissatisfiers could account for this phenomenon, the management team related user discontinuance to being part of a natural occurrence. By adopting this line of thought, they had sidestepped the cost impact of discontinued users. Therefore accounting of the SST is not shaped by rational reasons. Instead it is shaped by rationality that serves the interests of management (Morgan, 1986). So instead of retaining users, the strategy appeared to be to obtain a large registration base of users. However, registration does not equate to critical mass because it does not guarantee loyalty to the channel. How is it possible that large segments of the user population that have chosen to discontinue their use of their SST can be rendered economically or socially irrelevant? Morgan (1986) suggests that an organisation embraces several rationalities, and management in particular use the idea of rationality to pursue political agendas to suit their own personal aspirations.

This attitude indicates that the level of reflexivity demonstrated by managers is often constrained. For example, while authors such as Intron (1997:158) suggest that because of management's deep engagement with action, the next steps are self-evident 'as part of getting the job done', I would be less inclined to place management practice on a pedestal, and posit that there is a need for more reflection by management. Clearly Intron's 'real' manager needs to be blended with the 'rational' manager. Rationality is bounded not only by limited cognitive skills, but by 'regimes of truth', supported by a network of people (Kling, 1996). So what is rational does not represent what a report says, but what managers and their allies would like to say about the report. It is because the 'real manager' is implicated in a range of decision-making priorities and power networks that some obvious decisions are not acted upon. The 'real manager' understanding as 'part of being in the world' is limited when it comes to new innovations, where measures are still evolving, and where the exact role of the innovation is not explicit, but eclectic and contradictory.

Meanwhile, despite questionable returns, the SST had become a competitive token, which the firm used to differentiate and innovate itself, in its discourse with potential joint venture (JV) partners. From an organisational perspective, the use of the SST in the US and UK equates to re-enacting innovativeness in different spaces. Apart from maintaining the link between technocentric and actuarial culture through claims that the SST could improve operational efficiency and service delivery, as internal processes strengthened and became more predictable,

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local servicing needs for claims online became less important, so attention shifted towards the global operations.

Following structuration theory, one can understand the process of globalisation by placing emphasis on the local and global dialectic, constituted as the interplay between the local operations and the globalising initiatives. The globalising tendencies brought about as a result of the SST included time-space distanciation and disembedding mechanisms which, together, involved the stretching of social relations between local and overseas designers and users. The local e-commerce capability permitted the stretching of consumer-driven healthcare practices from a third world country with first world financial services capability back to two first world countries, in the form of the US and UK. These shifts in institutional practices are linked to changes in the role of the consumer in the global healthcare practices and the part played by the Internet as the vehicle to support that role. In a sense, there is a drive to expand consumer-driven healthcare products and transform them into a common cultural good via the Internet. Castells (1998:338) comments on the decisive role played by ICT in capitalism thriving throughout the world:

... [capitalism] deepens its penetration of countries, cultures, and domains of life. In spite of a highly diversified social and cultural landscape, for the first time in history, the whole world is organised around a largely common set of economic rules.

The global rise of consumer-driven healthcare also demonstrates the interplay between designed and emergent structures characteristic of contemporary organisations. The self-service technology developed in South Africa became an instrument for communicating the ideas of individual responsibility in healthcare, and extending this idea globally. Furthermore, it demonstrated to potential joint venture (JV) partners the firm's capacity to create productivity out of the innovative use of information technology and the cultural capability of using it. However, this does not imply that the implementation of self-service technologies is accepted wherever they are implemented in the globe, and that the world is becoming totally homogeneous. Dismissing global diversity can create major hurdles when developing and using SSTs. For example, the conceptions of an online nutrition tool inscribed with a South African perspective required modifications to suit the UK context. From a local adaptation perspective, bringing a technology to a new local context also involves some implicit elements of cultural

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transfer and mutual learning. As the following comment highlights, the embedded requirements were at odds with the local requirements:

... The UK system uses the imperial system, while we use the metric system. This affected recipes, portion sizes and body measurements. The dietitian in the UK helped us with translating the recipe measurements and portion sizes from metric to the imperial, which involved calculating the equivalent ounces where the recipes stated grams, millimetres or litres and converting kilograms to pounds. Some of the measurements looked ridiculous and didn't seem to make sense, so we had to try and convert to household measurements where possible. For example – 1 teaspoon, 1 cup etc. Regarding the body measurements, one of the tools in the nutrition programme involves calculating your body mass index (BMI). This requires you to enter your height in metres and your weight in kilograms. Naturally we had to modify this tool to allow for the UK market to enter metric friendly data such as feet and pounds. This wasn't difficult as it was simply a case of applying conversion factors. (Nutrition expert, interview 46, p 14)

By replacing the stress expert or the dietitian, the SST would eliminate the time-space link and enable interactions to take place across different time-space configurations. In this case, the SST was demonstrating its ability to enlarge the world by exposing the wellness capabilities to overseas partners. However, the UK nutritionist revealed the differences and idiosyncrasies that were concealed beneath the apparent homogeneity of the UK requirements. While on the surface the UK and South African cultures may appear to be similar, this evidence is counter to the global homogenisation notion with respect to SST implementation. The UK users appropriated the 'materials of modernity', in this case the online nutrition centre, differently as a result of their specific geographies, histories, standards and languages (Barrett, Jarvenpaa, Silva and Walsham, 2003).

.. At first we thought it would simply involve removing the South African foods, for example biltong³ from the recipes and menus on the meal plans and replace them with foods familiar to people in the UK. So we needed to find out what equivalent foods would be available in the UK to use as substitutes. Then we realised we also had to change the names of certain foods that were common in both countries, but that were called something different in the UK, like eggplant instead of brinjal, which affected recipes and menus that contained these foods. We also had to change the names of recipes, such as potjie to something more UK-friendly, like casserole. To ensure that all foods would be recognisable to UK consumers, we enlisted the help of a registered dietician in the UK. (Nutrition expert, interview 46, p 14)

Therefore firms must be cautious about rhetoric that suggests that SSTs are readily accepted in a homogeneous manner wherever they are implemented.

³ Biltong refers to a type of South African food consisting of small pieces of meat that are dried in the sun.

However, the difficulty of managing the interdependence and diversity in economic, political, and social environments was also applicable within a single country. Whereas UAG often accused the local South African government of developing an onerous regulatory framework for the funding of private healthcare, the US market proved to be much more complex. Although the US market makes claims to be a ‘free market’, it became clear that the US lacked an overall framework for health policy and therefore inconsistent standards for health plan coverage were being applied from state to state.

... but I think the US product is more complex, in that the number of options that are available to you are more. And also, you are affected by state governance. Each state has its own rules around what medical aid must do or cover. The product has to be modified in every single state. (Programme manager, interview 33, pp 12–13)

For the health insurer, this implied different product designs for the different states. Consequently the SST had to be adapted to manage the different local environments in the US. The excerpt below points to another local contradiction that influenced the shaping of the SST in the UK.

You see, where, in our UK market we needed to get customers. In South Africa, we needed to maintain customers. So they were two fundamental different things, that I used to always get frustrated with, because I would say, why are we basing a new Website, for a new company on an existing company’s Website that services existing members. We need to get members where this one was servicing existing members. (Business analyst, interview 47, p 4)

Some of the key members of the UK SST development team expressed concerns that the UK initiative was seen by management as a project where the team could simply leverage off the South African SST. Consequently, the UK site inherited a lot of the logic of the South African website. However, the UK market had to perform functions such as quote submissions and health plan comparisons to enable direct-to-consumer sales, which were not available in the South African SST. Whereas the assumption was that the team could reuse the components developed for the South African SST, a number of new applications and features had to be built from scratch for the UK site. In this case, the Internet shrinks the world, because JV partners located overseas can access skilled developers based in South Africa. The different local requirements were constraining the South African development team and as a result, relationships between the local and UK design teams were often strained.

Well, in the beginning, there was a very much of an ‘us’ and ‘them’. So, we are the South African developers and now we are doing the UK Website a favour by helping them, by

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developing stuff for them. We were not a priority. And, yes, I used to get a, a definite feeling that we were the enemy, coming in to use up their time, you know.(Business analyst, interview 47, p 10)

Local contradictions in global ICT implementation efforts are not limited to influencing the development team. Users also behave in fundamentally different ways. The effects of local diversity as users attempted to appropriate this tool differently within their own social context had several implications for the designers. The firm had to seek a balance between global integration and coordination of services and local customisation efforts (Barret *et al*, 2003). For instance, while the majority of the users in the South African social context were generally younger, the UK SST was used by older semi-retired and retired users.

The people who ended up using the website quite a bit were a lot of elderly people, which we didn't quite expect. And, yes, that was quite interesting. They were also quite particular and had these great ideas of what we should do. So that was quite interesting ... I think a lot of emphasis was put on winning points from the website. And that is inevitably, what people want, it was an incentive for them to go to the website, and they were very particular about their points, because in the UK this resulted in them getting discounts off their premiums. So, they were obviously trying to push their premiums down ... So they were definitely the type of people that had more control over, likely, their incomes at that stage. Because they needed to have more control, because that is it. You know, if you are retired or semi-retired, you only have got so much to deal with. So, they have that time on their hands. (Business analyst, interview 47, pp 16–17)

Simple cause-and-effect studies assume that older people are less inclined to use technologies such as SST (Parasuraman and Colby, 2001). By analysing the details of user adoption we can see how the type of product, incentives to drive down personal healthcare costs, and the broader social context can shape the use of the SST by older people.

Meanwhile, in becoming a global organisation, IT governance and related standards – such as Control Objectives for IT (COBIT), IT Infrastructure Library (ITIL) and Sarbanes Oxley (SOX) – were forcing the firm to comply with some of the common business practices of their joint venture partners across time and space. For instance, the discipline of testing applications in the systems development life cycle (SDLC) process lacked ceremony and a sense of formality. Over the years, there had been many appeals by the staff of eHIC to improve the testing process. However, the idea of formal testing only came to the mind of the head of eHIC on his return trip from the UK where he had observed a more disciplined approach to system testing. There he had observed first hand, accompanied by his peer, the value in formal testing and the use of packaged application to support this process.

This example demonstrates that the adoption of discourses is a power relation. Despite the ideas of a formal testing methodology being impressed by the local team, these concepts were transplanted only when an expert and a peer from an industrialised nation demonstrated their organisation's substantial spend on compliance by using formal testing approaches. This is another example of how best practices and procedures between different contexts and countries may be motivated. The major motivation for purchasing the testing application, it appears, was not simply to improve testing practices locally, but to conform to a set of practices established by a well-respected JV partner.

The testing process obviously had an effect on the go-live process, which was now much more formal. The development team had much less discretion over how they conducted their work. Development tasks were now under the control of the tools. The tools prohibited the execution of tasks unless all the prerequisite work (defined in the methodology) met the tools' completeness criteria. This ensures that system development tasks were executed in the 'correct' order, and that all relevant documentation was available before coding began. Those staff members who had worked at eHIC from its inception were frustrated at the significantly less latitude they had in their work. With the design of Web applications, they argued, the approach needs to be flexible, allowing for prototyping and other forms of improvisation. In their opinion it was difficult to design Web applications using a rigid methodology. For newer members of the development team that had no prior exposure to developing systems, tools were not interpreted as restricting their autonomy, for they were unaware of other ways of designing systems. Others simply started hiding behind the new processes, as the following business analyst remarks confirm:

... I actually became less customer focus, and when I say less customer focus not from a user but customer focus from internal customers, so for me servicing the internal business. And the reason why, and I will give you an example. The business would ask me to do something that was not approved from a user perspective and I know what the focus is so I say no I need a business spec please, and I need three people to sign it off which obviously delays it, and what it started to doing for me is that I can start hiding behind the process ... (Business analyst, interview 14, p 4)

Here again we see the unintended consequence of a new process. While managers were expecting that tighter control and surveillance of the development team would improve performance, it sometimes had the opposite effect.

Meanwhile IT became an easy target for a ‘streamlining initiative’, as broader structures such as shareholders and the regulator expressed concerns about the organisation’s cost structure. Another new form of organising with regard to the SST evolved. The IT management team believed that by integrating the various channels in the back-office organisation, where the core production processes were being managed, significant efficiencies could be gained. Problems relating to front-office and back-office integration were high on the agenda. Meanwhile, there was talk of refocusing H-World’s capabilities and competencies related to this. The following excerpt demonstrates how social, political and technical interests intertwine to give birth to new structural forms.

Well, there has always been a kind of disharmony between the online environment and the back-end systems environment. And I think a lot of that was, in the beginning, around technology. But it is also very much people driven. And some people want to control more than other people ... (Business analyst, interview 41, p 4)

This move coincided with technological changes that made it possible.

And then even within health systems, I think a lot of their applications are moving to Java. Like, for instance, the claims environment. I think they are going to rewrite that. (Business analyst, interview 41, p 17)

There was strong internal debate concerning the merits of integrating back-end and front-end development into single teams versus separating the two areas of responsibilities. The H-World management team put forward their claims that eHIC had developed a significant amount of intellectual capital over the years on the ‘softer’ elements of interaction. These include how to position, how to message, and how to design a user interface. They emphasised that there was an increasing need for these skills throughout the UAG Group, including within the traditional systems environment, which used to build ‘unfriendly’ user interfaces for the call-centre users.

Meanwhile, those development staff members with back-end process competency were transferred to systems areas supporting the back-end processes. And the staff that had developed competencies in front-end and usability were moved into the front-end or ‘customer experience team’. In other words, usability emerged as a regime of truth. During its existence H-World built a competency around the development of front-end applications. The materialisation of this new regime of truth influenced the emergence of a new structure, the CIS (customer interaction

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systems) department, whose purpose was to serve front-end development of all channels. This new structure led to further ramifications for the firm.

Yes, my way of dealing with that was, to highlight the fact that my belief was that productivity would be affected. And the reason I thought that was, was because I knew people would, in undergoing change, without a slowdown, redirect their energy, want to spend time understanding everything. And I was almost sort of put in my place to say, you know, we have still got the projects to deliver. It is the same people who just happened to be working at different desks, almost, or being, you know, put in a different division, but the work is all the same. Now, but I don't think it is as simple as that. So, so I almost failed myself by not being more persistent with that issue. So, yes, I mean, you can argue now, yes, look, things are carrying on, we are delivering, etcetera. But I think, when we, I personally believe that a few people who moved on recently to resignation and I think there is probably, my expectation is that in the next two months, beginning of December and beginning of January, we will have a couple of more people leave. And I am convinced that is a knock-on effect from this change. And they wouldn't have left if it wasn't for this. (Programme manager, interview 42, pp 16–17)

More important than productivity issues, the restructure of the department resulted in many individuals having to reconstruct their self-identity.

I see usability as a purely pragmatic thing that, you know, as a, as a graphic designer, you have a feel for it anyway. And now it seems a huge departure, a whole bag of resources being positioned under this one heading, Usability. (Graphics, interview 43, pp 6–8)

Given the context of increasingly tighter control and surveillance, the restructure compounded the belief that jobs were not secure.

Clearly the idea of running around ‘complaining about pedantic stuff, like colour and shapes, and whether or not something makes sense from a wording perspective’ did not appeal to the business analysts. Walshaw (1998) argues that chronic monitoring and drawing on new knowledge creates existential anxiety in the individual. In other words, the anxiety felt by the members in the development team cannot be attributed to job insecurity alone, although this was certainly evident. The anxieties also related to ‘What is a usability analyst or a front-end developer?’ or, as Walshaw (1998) puts it, ‘Who am I?’

The BAs don't know what the most intuitive way to structure a page is cos' they never had to deal with that. That is what the graphics team did ... They all left except for one. Off the Wellness team all the BAs left. Because of this change they chose to leave. They were, it's quite funny (laughter). They were given a choice and then they all wanted to leave but then the choice was retracted. There was a big fuss and eventually they left ... For them it's a bullshit job, its something that they are not capable of doing. They don't know that, you know the yellow button is better than the blue button, because the heuristics model say so. You know, I mean they do not want to do shit like that. To them they don't want to that. They want to do business analysis, so they left ... I don't know what the hell's going on.

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They are nine teams excluding the Usability team so I don't know what the hell's going on there. We are short six developers and seven BAs. So out of all this movement we gained departments which is amazing and we are short a shit load of people. So I don't know, I actually don't know what CIS does ... (Systems architect, interview 053, p 6)

The hard-hitting cynicism of the architect in the excerpt above also demonstrates fundamental features and a knowledgeable insight into the realities of the systems development environment. Clearly, the business analysts and developers at a practical and discursive level had a more sophisticated understanding of the 'structures' of usability than management. And it is because they understood this context more proficiently that they moved on to another department or resigned. Nevertheless, the scarcity in the IT market enabled the acting out of this rebellious attitude. The following excerpt demonstrates how this major change created tensions of identity between the corporate employer and the e-commerce team:

For me the main changes, it felt like a small company when I first started here, people ran on adrenaline, they were processes in place but you could break them, there wasn't a lot of red tape which I enjoyed because that is the kind of environment I prefer working in. I think slowly that culture has changed. It has become more corporate, they started bringing in a lot more processes, just in terms of doing anything really, taking things live, making changes to databases, from getting sign off ... Maybe it can be seen as a good thing but it also slows things down a helluva lot. From a time capturing time perspective they have gotten stricter with that, how often people capture time, to what detail people capture time, and I don't see that stopping anytime soon. In fact I see it becoming more and more corporate. We also moved from daily go-lives now to go-live every two weeks only, and they are getting stricter and stricter about breaking any kind of rules. And to me those are the major changes. I think also you know the management team in H-World has also changed quite drastically. A lot of them have moved out or moved into other things. So I think the culture of H-World is still out of all the departments in UAG still has probably the closest to a small company feel than the others do and I think part of it has to do with just the average age of the people within H-World. I think it is younger than the rest of the company. As I said I do not know how long that is going to last. I am not saying whether it's a good thing or a bad thing but I just prefer the previous culture. (Business analyst, interview 14, pp 3–4)

In contrast, one of the senior managers articulated the firm's need for 'discipline':

That is not a H-World phenomenon. That is a function of UAG being a different organisation. That is the function of UAG having to account for close to 1.8 million lives. You can't do things, to use the analogy, you can't have kids running around a nuclear reactor. And then if it's not bureaucratic then it tends to kill people. And likewise, if you do stupid things and don't have the appropriate discipline, and yes that can be interpreted as a bureaucracy. So in the client face, the needs have shifted, the needs have shifted to stability and robustness and as a result the process and the ways of doing things had to shift ... No, I mean, I do not see that as being mutually exclusive. If fun is defined by, being flippant about how you manage a very big, complex environment, then I would say yes, fun is going to fall by the wayside. If fun is defined as achieving a major milestone, and you are continually pushing the boundaries, doing new stuff, doing new and interesting things, meeting new requirements, I don't see any trade-offs. (CIO Health Systems, interview 36, pp 11–12)

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Thus, individuals monitor knowledge and its constant shifts, and use it as the basis for changed action and social relations (Walsham, 1998). Given the firm's tremendous growth, there was now a definite shift in the way e-commerce roles that used to operate within a fairly loose structure were now being operationalised within a rigid operational structure. Even though managers of eHIC attempted to augment and maintain the roles of their subordinates as custodians of all front-end development within the organisation, most team members felt constrained, and were experiencing great difficulty in coping with the change. Team members were faced with a new job description, but they did not know exactly what the new job description entailed. They were not totally familiar with their new responsibilities. For instance, in this new practice new documentation must be produced. Furthermore, they had to work with unfamiliar channels such as call centres. Whereas the business analysts used to complete a business requirements specification, they had to now focus on specifying usability aspects. Would there be a new template? Many were unaware as to how this was actually going to work. Furthermore, the autonomy and self-regulation of individual designers in the eHIC team were being undermined by the firm's focus on quality through the enforcement of disciplined work practices. Many of the experienced developers who had the ability to reflect on the assumptions, rules, and concepts that facilitated and constrained their work in this new context decided to resign and leave. Thus one of the unintended consequences of this restructure was that the more experienced staff chose to leave either the H-World team or the organisation.

Ja, leaving H-World team, clearly, and what that really meant was that the people left over are fairly junior. And people that have moved to Corporate actually do not have the skills to do this. And this is actually becoming a problem for them. They do realise it. Hopefully they will hire, they effectively got vacancies, they need to hire the skills. (Systems architect, interview 43, pp 6–8)

These staff members may have been in search of systems development environments that were premised on the initial assumptions they had about systems development and technology, those that had transpired when dotcom was at its zenith. Those who remained were cynical because management roles had not changed. Nevertheless, even those senior managers who were frustrated opted to stay, as they would lose their lucrative share options in the event of resigning.

In the following analysis, I turn my attention to inequity in the South African IT work environment. Historically, for most women in the South African IT context, specifically in senior management positions, there is a marked awareness of their oppression. The interviewee below demonstrates discursively that she is aware of broader conditions of social practices; conventions

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that uphold the inferiority of woman in the workplace, beyond those in which her own activities take place (Giddens, 1990).

I think Sally has got very big shoes to fill. Firstly in the workplace it is not easy being a woman and being such a senior manager and its tough, its tough to get the respect of upper management, whether they are male or female ... I feel sorry for her, I think it is tough. But because women have to work so much harder. Maybe she feels she has to prove something you know, which is quite unfortunate because if a man was in her position he wouldn't have to do that. (Staff, interview 38, p 5)

It is also relevant to apply the knowledge actors have about the societies of which they are members to white South African males. A number of white South African males feel alienated by affirmative action and legitimated employment equity policies, where jobs are now being reserved for previously disadvantaged populations, which include white females and other racial groups. The racial skew in remunerated employment (alluded to in previous chapters) reflected the uses of political power that created economic opportunities for white men in their favour during the apartheid regime, while denying similar possibilities to white women and other racial groups. As the political future of South Africa changed, there was a noticeable power shift in favour of the previously disadvantaged groups. Organisations are now being pressured to recruit previously disadvantaged individuals, and are being monitored by the Department of Labour to assess their level of compliance. They face substantial penalties in the form of fines if they fail to adhere. Consequently, one of the white male staff articulated a belief that while it easier for the previously disadvantaged groups to find alternative employment, he and members of his social group were being constrained by certain social forces. In discussing the exodus of staff from the department, this perspective was articulated:

But the reality is, for someone like myself, it is not that easy to move on. And I think it is a different reality maybe for, like, I don't know, some females around, some, like previously disadvantage communities, it might be easier. And like the guys that are maybe moving on, or, you know, I don't think any of them are like the white males. Because it is just not, you can't find a job overnight. (Staff interview, interview 42, p 35)

However, Giddens (1984) suggests that it is not unlikely that false beliefs are held by members of a society about features of that society. The reality is that while there are attempts by the regulator to promote more equity in organisations, many who had left H-World for 'greener pastures' were in fact white males.

The Department of Labour has been critical of the abuse of the employment equity law by South African organisations. Many companies were accused of using the ‘white female criteria’ as a loophole. As figure 7.2 illustrates, H-World employment systematically shifted towards white females over the years, perpetuating inequality along racial lines. Only a minority of the staff members were previously disadvantaged individuals belonging to other race groups (18%). Most firms contend that the lack of IT skills among the previously disadvantaged population constrains them, hence their justification for recruiting white members of the population.

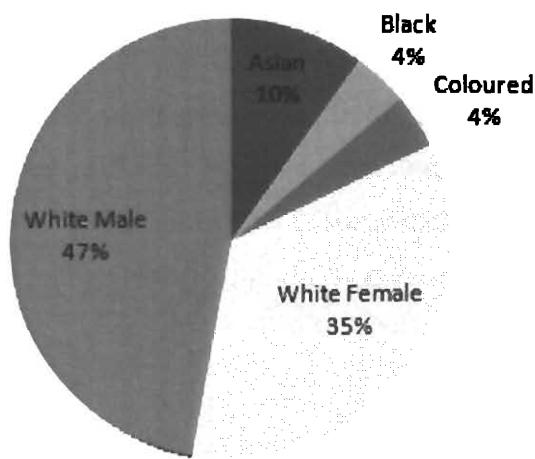


Figure 7.8 Staff profile of racial groups

Source: H-World’s staff reports (2004) n=118

However, it was noticeable during this field study that a few white women who were once personal assistants and call-centre consultants had been promoted to act in business analyst positions without formal IT/IS or university qualifications. Ironically, while sanctions related to employment equity should place limits upon the range of actions open to the organisation, this particular skills development programme and normal recruitment practices did not appear to give preference to previously disadvantaged individuals. Nevertheless, using the skills argument as a constraint in this case is flawed since formal IT skills were scarce, even among the senior managers, who were in the main white males, as noted by one of the more educated senior architects.

Experience of high level executives, not, not enough. I will call it not enough formal education, maybe for some of them just high school, just to learn everything is you need to rediscover the world and that takes so long ... people like that they ignore research, best practices from other companies, obviously we struggle for a while and figure out that actually the industry is right, but because these people sit in high positions and make these decisions ... this affects everyone in systems, many people are leaving ... Even visionaries like Tom with very good formal education suffer in the implementation. But in other executives they are learning, they are quite intelligent, quite clever, but learning is slow because we need to convince them on things a university would have given them as a start.
(Systems architect, interview 19, p 2)

As Giddens (1984) suggests, ‘all societies are predicated upon claims to knowledge that are disparate or left unexamined’. Clearly, certain individuals are resorting to false theories to legitimise, dominate and thereby protect their own economic interests. Despite the regulator’s threat to apply sanctions in the form of quotas, timetables and recruitment policy, apartheid structural properties, albeit more covert, persist in South Africa’s private sector organisations. This resistance by the private sector to actively employing and developing black staff is of particular concern since the IT sector represents a significant growth area for the economy, and thus an important avenue for previously disadvantaged individuals to improve their living standards.

Giddens (1984) points out that a sanction requires some form of ‘acquiescence’ from those who are subjected to it. Given that socio-economic power is concentrated in the hands of the white elite, it is not surprising that the properties of apartheid appear to be reified. In other words, the properties of apartheid continue to demonstrate a level of fixity in the workplace. Consequently, the main beneficiaries in the private sector and particularly for IT employment, at least for now, are white South Africans. The irony is that South Africa’s inclusion in the international market as a result of the dismantling of apartheid continues to benefit the white elite. More than a decade after democracy, and despite stringent regulations, it is disconcerting that South Africa is still trying to overcome the racial and gender structures that persist in its private sector institutions and the country as a whole.

To conclude this section, the shifting roles of the e-commerce development team were strongly enabled and constrained by the existing structures of legitimisation and domination at the health insurer and related contexts. The role as the replacement channel – which in hindsight was a bit implausible – laid the seeds for new structures. Some of the joint actions began to embed potential structures in the technology, while others set up rules and routines for the SST, which over time developed into new organisational structures. Eventually UAG became process-centric

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(which in itself is not a bad thing). However, management neglected deep-seated employee concerns like job satisfaction and employee morale. While change itself was inevitable, management failed to demonstrate sensitivity to staff concerns during these periods – that is, to have the best of both worlds, retain that ‘family feel’ that many believe has been lost, and achieve new levels of system development maturity. After all, ‘maturity’ and ‘family feel’ do not have to be mutually exclusive or contradictory goals, do they? Nevertheless, the SST was implicated in many ‘complex debates and struggles’ which were taking place in the firm as they attempted to come to terms with their changing world and the place of the SST in it (Walsham, 1998).

Lastly, in the short term, H-World’s achievements might be questionable or might have come under scrutiny, thus leading to various episodes of the revision of its structure. However, H-World’s improvisation using Web technology supported product innovation and globalisation initiatives. Even though the SST was only in the fifth year of its implementation, its presence had helped to bring about significant changes in departmental structure and the overall conduct of business internally and externally, with members, providers, intermediaries and with JV partners. The SST influenced and was influenced by organisational changes, such as the manner in which intra-organisational communication took place. For instance, individual system departments communicated with each other more effectively, because they had become jointly responsible for maintaining high standards of integrity for the data that they all shared. New components were designed with multiple channels in mind. Such high levels of interaction among departments and design maturity were unthinkable prior to the SST implementation. Furthermore, the SST architecture served as a framework for supporting the global strategy.

Yes. I mean, if you are looking at the UK, we have got consultants sitting in, in the UK, using the website to do the online quoting on all our applications. So the website has been transformed from purely the external communities to serving internal communities as well, on a global basis ... But I think what is important is that going forward, both the UK and US initiatives were fairly difficult to implement. Going forward, we cannot actually afford to spend that amount of effort on, on new countries or new initiatives. So, we are looking at globalising our systems in a way that is configurable, and, so that we can position ourselves in any country or any language, you know. And I think that, that's where the challenge is that we face now. And if, yes, when in terms of, again that budget, you know, if they did cut the budget, it will severely impact our ability to do the whole globalisation thing. (Systems architect, interview 43, pp 37–38)

Table 7.4

Summary of key theoretical concepts and illustrations from the study

Theoretical elements	Main themes	Illustrations from the case study
Routinisation	<ul style="list-style-type: none"> • Traditional channels and SST 	Using the telephone to contact the health insurer was well entrenched in the day-to-day practice of members
Trust in abstract systems	<ul style="list-style-type: none"> • Design and operator failure 	Design faults diminished trust in SST
Reflexivity and identity	<ul style="list-style-type: none"> • Existential anxiety 	Changing identity of e-commerce team to front-end development team led to insecurity about work and new role as usability experts
Intended and unintended consequences	<ul style="list-style-type: none"> • Interactions intended by designers and actual interactions by users. 	Intention to become channel of choice ruined by users' use of multiple channels
Disembedding of social relations	<ul style="list-style-type: none"> • Disembedding of social relations from local contexts of interaction 	Use of wellness points to reward healthy behaviour results in unplanned use of the SST to earn easy points
Time space distanciation	<ul style="list-style-type: none"> • Enabling wellness interactions and transactions at a distance 	Wellness applications based on generic knowledge via impersonal wellness practitioner-user relations
Local-global dialectic	<ul style="list-style-type: none"> • The global reproduced in the local • Local appropriation of the global 	<p>The SST enabled transactions at a distance in an attempt to replacing co-present interaction (face to face) with call centre consultants and wellness practitioners</p> <p>The UKHC and USHC website are globally designed systems that are appropriated locally</p> <p>Designers draw on local knowledge and client interactions in implementing these abstract systems. Design changes to accommodate local adaptations of nutrition centre</p>

Table 7.4 presents a summary of the key theoretical concepts and illustrations from the study. So the question remains, how do you put a financial value on competencies and capabilities with complex computing and network architectures, object-oriented software technology (albeit relatively immature) development, security, and user interfaces? In other words, what emerged

from the introduction of H-World were strategic assets, which in a sense were not the intended goals of the SST, but valuable assets nevertheless. The irony is that there is now a danger that improvisation – which served this innovative organisation so well in the past – might diminish as the organisation continues to grow and seeks to become process-centric because its ally bureaucracy will strengthen.

7.3 Conclusion on structuration theory perspectives

This study drew on the premises of structuration theory to discuss the nature of SST implementation and its interaction within the organisation and social setting. Structuration theory appears to be well suited to understanding the linkages of the SST and organisational structures, as well as to understanding the interaction of SST within the wider socio-historical context. The study traced the eHIC experience to show how throughout the SST implementation structural rules and resources within the environmental, organisational, and IT contexts are produced, reproduced, and changed. The analysis illuminated the diverse social influences by which the SST evolved and the way in which the traditional channels that it aimed to defy survived. The way in which meaning was shared, norms and resources communicated, and human action was sanctioned and facilitated, sustained, yet at the same time changed, certain social structures during the process of SST implementation. At every implementation shift, there were distinctive transformations of the technology, the organisation, or the environment, and each set of changes provided a new context for a later set of implementations. Over time, as the firm struggled and experimented with the technology, different assumptions and diverse interactions with the SST both shaped and were shaped by new organisational forms.

Users drew on and responded to a multiplicity of rules and resources in this context of multiple channels. For the SST, this makes the relationship with particular sets of actors tenuous. Where contexts cross-cut and structural properties are diverse, users tend to draw selectively on rules and resources, instantiating some and leaving others (Orlikowski, 2000). Again, the users did not draw on every single rule and resource in the SST. In other words, for certain sets of users, certain rules and resources need not be turned into practices. It appears that the range of ‘interpretive flexibility’ of external users in the context of alternative channels is far broader when compared with findings of users of internal systems.

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It also appears that managers cannot apprehend the complexity and everyday life of the external user. These general and imprecise judgements about these remote sectors imply poor judgement. However, management do have complex and detailed information about the everyday life they deal with. This social stock of knowledge supplies management with a typificatory scheme required for the routines of everyday life, that is, servers, networks, applications, internal business processes and so on (Berger and Luckmann, 1967). The occupational worlds of the users, though, are sketchy, since there are too many. In attempting to please the mass of users, the organisation continually redesigned the SST. However, site redesigns were often a hindrance. Many users view this as a change in convention, whereas the telephone has remained a standard convention and a stable technology, whose inscribed conventions have been black-boxed.

The SST was subject to differing interpretations among users and designers and depending upon the social context and the process of implementation. As the SST technology was introduced and put into practice, differences in social meaning and their importance to the implementation and consequences of SST emerged. The structuration analysis drew attention to the links between social interpretations and the context and processes of implementation. Examining how different groups (such as designers and users) interpret the SST technology within their social frames of reference yielded valuable insights for understanding actual patterns of implementation and use.

As the study reveals, the design, deployment, and institutionalisation within the particular organisational context, as well as their ongoing uses by particular users in multi-channel environment, together determine the impact of SSTs on the social structure. SST's should be viewed both as enabling and constraining social practices. Furthermore, while SSTs show certain potential in mediating social interactions, this is much more varied and flexible. Based on a structuration analysis, one should perhaps remain cautious about the optimistic predictions of SST in the healthcare insurance context, as these prognostications ignore the domination and legitimization aspects that are always central in social structuring.

The healthcare insurance context is not some clearly bounded unity. The practices of the users and designers are vital in the reproducing the SST, but the media, software vendors, regulator, and other steering mechanisms are equally implicated in its reproduction as a service channel. To a large extent, SSTs are also an instrument for economic and social gains within the context of a market regime (Avgerou, 2003) as in this case – of consumer-driven healthcare. This particular

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configuration as a complementary channel, instead of the channel of choice, was emergent and unintended, but has maintained the SST for now. It may be more appropriate to conclude this part of the chapter with some parting advice for proponents of consumer-driven healthcare in their use of the SST in the eloquent words of Giddens himself:

No matter how well a system is designed and no matter how efficient its operators, the consequences of its introduction and functioning, in the contexts of other systems and of human activity in general, cannot be wholly predicted. One reason for this is the complexity of systems and actions that make up world society ... For all these reasons we cannot seize 'history' and bend it readily for our collective purposes. Even though we ourselves produce and reproduce it in our own actions, we cannot control social life completely. (Giddens, 1990:153)

Chapter 8

Interpretation of Case Study: An ANT Perspective

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8.1 The many translations of self-service technology: an analysis using actor-network theory

8.1.1 Introduction

To augment and enrich some of the structuration findings presented in the previous section, I now employ actor-network theory (ANT). In contrast to structuration theory, ANT looks at the world as full of hybrid entities containing both human and non-human elements. ANT is ideal for analysing a self-service technology (SST), since separating these elements in the SST situation is difficult. For instance, it is difficult to establish which part of the SST is just an inanimate object and which aspects are the results of human interactions. It is also difficult to differentiate the SST's technical aspects from the influence exerted by the socio-cultural background of the designers or users. Therefore, ANT will help to trace the innovation path of the SST as these various actors co-evolve.

Drawing on empirical data from the case study, throughout this section I suggest that the SST can be viewed as an actor. The series of three strategic shifts or translations of the SST will be used as scaffolding for the analysis. The selection of the three translations from 'channel of choice', 'dazzle the customer' and the 'complementary channel' will be used to retain a chronological order and thus provide a succinct analysis of the masses of detail involved in this study. These three translations also act as technological frames to link the translation process of ANT within broader social and cultural processes. According to Bijker (1995), a technological frame consists of 'all the elements that influence interaction ... and lead to the attribution of meanings to technical artefacts'. The concept of a technological frame will be applied to capture both the social and technical resources that are drawn upon to create the various interactions (Allen, 2004; Gash and Orlikowski, 1994). By encompassing technological detail as well as social conceptions, these technological frames will assist in structuring this ANT analysis.

8.1.2 Inscribing the channel of choice

Many researchers have criticised ANT for being too focused on the local and contingent aspects of socio-technical change, at the expense of broader social and cultural processes. To overcome this, I used three technological frames as episodes of translation, as suggested by the work of Bijker (1995) and Allen (2004), as a means of linking the enrolment process of ANT with

broader social and cultural processes. The frames were useful in overcoming the tendency to heighten Machiavellian perspectives by sensitising us to the fact that translations are a matter not only of negotiation and power plays, but also of redefining the technology by including and excluding different actor-networks.

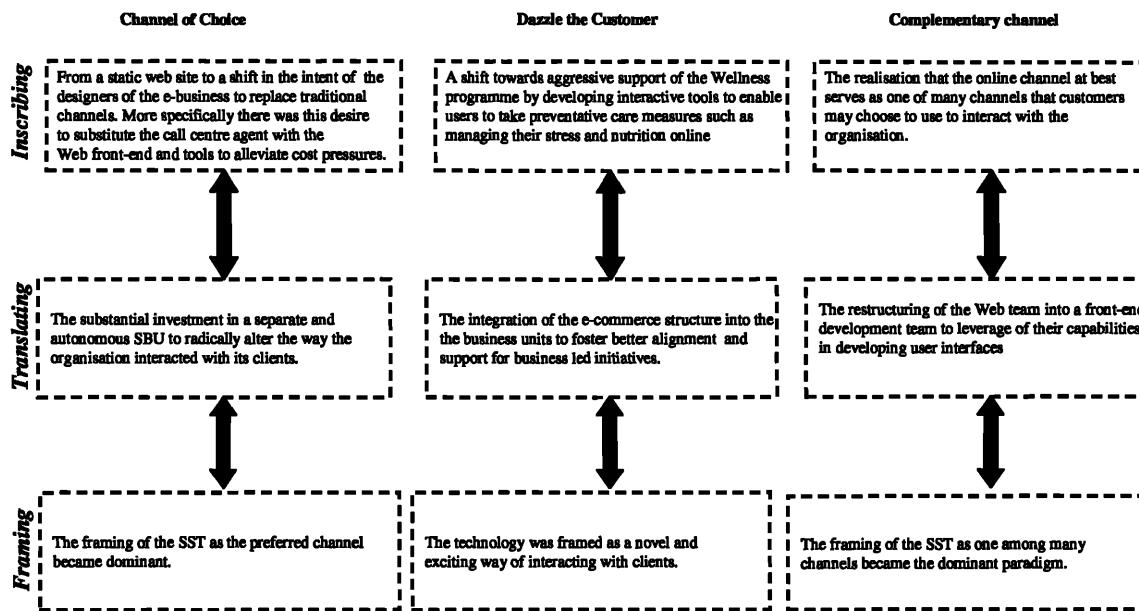


Figure 8.1 Self-service technology in practice: shifting translations by designers

Source: Adapted from Faraj *et al* (2004)

Inscription

Until 1999, the technological frame of disseminating ‘static content’ dominated website implementations. A new technological frame to become the ‘channel of choice’, or in other words, the preferred channel, was emerging at HIC as the ability to transact online became more plausible (see figure 8.1). Clearly, the first intention for the designers of the HIC e-business was to replace or substitute traditional channels. More specifically, there was this desire to substitute the call-centre consultant with the Web front-end. This major inscription to take on the role of the call-centre agent was based on the assumption that the self-service technology would save calls by having answers to key call reasons programmed and made available on the website, using the Web and related technologies. This deterministic approach stems from the organisation’s culture, which is dominated by an actuarial science perspective. The same inscriptions, founded on formal mathematics, that were embedded in developing healthcare

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insurance products such as probability, statistics, finance and economics, were being applied to the SST's performance. For instance, in the same way that the actuaries measured the claims value per thousand lives, the Web was being measured on the value of the call reduction per thousand lives. As opposed to involving users in the requirements analysis process, designers looked at call reason statistics and built online features around popular call reasons, such as submitting and tracking online claims, viewing statements, and checking medical saving account balances. Similar to actuarial models, this call-saving model would be soon prove vulnerable because of its assumption-dependent approach. At the time, the growing member base resulted in increasing capital expenditure on call-centre technology. Furthermore, the high fixed-cost base of the call centre, combined with the high labour cost attributed to the growing number of call-centre consultants, all gave strength to this internal inscription of improving service efficiency through automation.

This inscription was strengthened by the hype created by the other steering mechanisms at the time. For instance, the threat of a pure-play competitor may seem far-fetched now, but at the time it was viewed seriously by UAG's executive team. The Internet browser was also positioned as an obligatory passage point (OPP) because it was an 'open', 'electronic' platform that could deliver the paperless environment – vast amounts of paper had plagued healthcare insurers for years. The provider of the Dynamo suite of e-commerce applications, Applied Technology Group (ATG), offered the following 'objective information and practical guidance' to IT professionals during the dotcom boom:

For all businesses there is an unrelenting pressure to control costs. The pressure of competition and financial investors will not allow managers any relief in their efforts to drive down costs. (ATG Technology Guide, 2000, p 7)

An organising vision – emerging from a heterogeneous collective consisting of the academic world, media, consultant, software vendors, and dotcom start-ups – bestowed a lot of appeal upon this 'substitution claim' and other 'efficiency' inscriptions. Hannemeyr (2003) found that the popular narrative concerning the Internet during the dotcom boom possibly resulted from translations into carefully phrased restatements of fact to support a particular financial or political agenda.

In spring 2001, the *Journal of Healthcare Information Management* summed up how misconceptions were being propagated about the Internet at the time:

As we move through the millennium, the Internet is dramatically changing the way business is conducted on a day-to-day basis ... E-commerce is driving change within organisations across virtually all industries at an extraordinary rate. The unprecedented volume of Internet advertisements and start-up businesses demonstrates that e-commerce is the new model for business and is growing at a rapid rate. More consumers are going on-line, and their rapid acceptance of e-commerce as a way to conduct business and access information demands that organisations think and plan strategically in order to take advantage of the new Internet possibilities. (Megliola, 2001)

This excerpt, which is packed with sweeping generalisations, was more attuned to writings in a product brochure than an academic journal that is supposed to be subject to rigour. Yet Hannemeyr (2003) argued that these misconceptions about the Internet were able to ingrain themselves in popular academic and practitioner discourse because of our trust in, and reliance upon, media-constructed reality.

Translating

Swanson and Ramiller (2004) suggest that this ‘bandwagon’ phenomenon is especially prevalent where an innovation achieves a high public profile, as with the Internet and e-commerce. Planned action is typically dismissed by the urgency to join the stampeding herd, despite the high costs and apparent risk. This tendency in the case of HIC is confirmed by a remark made by the head of eHIC:

Initially it was just be part of the space. And no one really could draw a more rational reason than that. You have got to be part of this play. The whole world was going to go online ...
(CIO Health Systems, interview 36, pp 1–2)

Clearly the larger community’s organising vision was the embarking point for HIC’s sense-making journey with e-commerce. Based on buzzwords such as ‘cost advantages’ that the media presented about the new channel, the apparent ‘rapid rate of adoption’ globally, and the ‘first mover competitive advantage’ this would present at the time, HIC invested significantly in the development of the self-service channel. To show support for the new channel, the leadership of the organisation gave it autonomy to transform the ways in which members interacted with the organisation and were to be serviced. For this reason, among others, the self-service channel was structured as a separate company. Recalling the mood at the time, one of the senior managers of the initiative stated:

We had direct support from the very top. Andy, Ben and Jim sat on our Exco for the first six

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to nine months so focused were they on the Internet possibilities. HIC itself was flying having redefined health insurance in South Africa so all in all there was an abundance of goodwill and positive energy. Pretty much anything Tom (referring to the Head of H-World) and I wanted to do with H-World we could and we had the support. Our only limiting factor was capacity and time. We did not have enough time and actual people to chase all of the great ideas we had at that time. (Community head, interview 049, p 2)

The focal actor – in the form of the newly appointed head of e-commerce – enrolled the executives to establish an exco to support their activities. The exco could assist the newly formed e-commerce organisation to address the criticisms from a number of quarters that were unwilling to participate in this ‘new era’. Despite overwhelming support from the CEO and most of the senior members of the executive team, a number of executives, particularly from the marketing and the new life business, expressed a level of apprehension about the merits of eHIC operating as a separate entity. First, there were those who were sceptical about whether eHIC could succeed without closer engagement with UAG’s IT and business departments. Linked to this were concerns that incentives would be misaligned in the IT area if the dotcom start-up was conceived separately. In the second place, others in opposition did not believe that UAG’s health and life products could be sold over the Internet. For these detractors, face-to-face contact via financial intermediaries had been the hallmark of HIC’s success thus far, and was essential in selling financial products. Indeed, some of the key exco members felt that the role of the Internet should be limited to services only.

Over this period, UAG had substantially expanded the use of brokers and consultants as distribution channels for selling its health insurance. This approach led to the launching of the UAG Intermediary Institute, which provided intermediaries, such as brokers, with advanced education in healthcare financing. Apart from its innovation in health insurance products, what set UAG apart from its competitors was the way in which these products were communicated, distributed and sold through the broker channel. For this reason, there was great resistance by certain exco members towards any attempt to sell HIC’s healthcare products online. Criticisms relevant to the *problematisation* of the self-service were identified as: ‘Should the Web be used as a direct sales channel and servicing channel?’ or ‘Should the Web be used as a servicing channel only?’ The realisation would prevail that intermediaries were a ‘necessary evil’ and the intermediary channel should not be one to be ‘messing around’ with.

The *problematisation* in this scenario is overtly concerned with the power relationship between brokers and employers in the South African context. In effect, brokers sold health insurance

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directly to employers, and employees had to select from a group of health plans as part of their ‘employee benefit’. Employers typically offered plans from a single health insurer. There was no empowerment of the employee in the sense that employees would be able to select from a range of health insurers. So as not to jeopardise the relationships with these powerful intermediaries and hence future sales, the SST initiative had to realign with the interests of sales and marketing. For these reasons, the seduction of the Internet as a direct sales channel could not be used to coax some of the ‘grey beards’ on the exco committee. The obligatory passage point (OPP) towards a shared view of a service-centric online channel was established.

Despite the support and mandate from the exco members, political battles were being fought at other levels. After all, there were fears in areas such as corporate systems that the role of the SST was to squash legacy practices. The following extract sums up the environment during the early stages:

There was a lot of political wars ... you want to achieve your initial goals so to expose everything is sometimes not the best thing because you are selling something, when you are selling at that moment you are making a claim, and it does not mean that everything that you are selling is the best thing. It's a war in the beginning, it's a business war ... and like in any war the general cannot expose his strategy to the army at any stage, at least at the beginning ... especially in an environment like this if you want to achieve anything ... (Systems architect, interview 021, p 9)

Nevertheless, the level of optimism was so great at the time that the firm invested significantly in hardware and software, such as the state-of-the-art technology in the ATG Dynamo suite of applications, which was then the leading and premium Web server technology. Other leading tools such as Documentum for document management and Verity as a search engine formed part of the envisaged solution. The firm chose Java as the development platform instead of .NET as this was deemed to be the best technology for constructing Web applications at the time. Introduced by Sun Microsystems in 1995, Java’s ‘write once, run anywhere’ philosophy made it the ideal language for distributing code across the Internet. Inscribed in Java, among others, were the notion of reuse, shorter time to market, and increased connectivity. Over the next few years Java’s general-purpose programming capability would impose new inscriptions in the overall development environment. The newly formed company sought to recruit highly in skills in Java, graphic art and e-commerce generally. Despite its growing popularity and ease of use, Java skills were hard to find, given the exodus of skilled IT workers from the country and the newness of e-commerce at the time. The lack of skills and newness of these technologies would later impinge

on the team's ability to deliver on time, with as few 'bugs' as possible, and thus contributed to poor translations of eHIC. One of the senior members of the development team described the immature development environment:

When H-World was started everyone was in bloody real trouble. People were in real trouble. Everyone was new to all the technologies that were used, new concepts that were introduced, under huge pressure as well as everyone was just hired, everyone was trying to their best to keep their jobs and it was the job necessity itself that made everyone work so hard, they never did this in their lives before so it was a matter of survival. That kept them together and built strong relationships It was not the leadership ... it was the pressure, the struggle for survival that kept them together. (Systems architect, interview 019, p 2)

Poor translations also involved the internal systems. The predominantly batch mode of processing between internal systems, the use of a non-standard database platform, poor data quality and integration issues all made for weak (ties) inscriptions. The internal Magic-based systems, and a robust client-server application used by the internal operational areas for high-volume data capture were at odds with the Java-based application for developing Web-based applications. The Magic-based systems were not readily interoperable with the CORBA standard, which meant that a lot of the business logic was inaccessible to the Java-based applications. Furthermore, a number of the functionally driven Magic systems were built as one monolithic piece of code, and therefore could not be easily adapted for a component-based Web environment. This meant that business rules had to be rewritten, using maintenance-prone Store Procedures to access the data from the already unconventionally designed tables.

Apart from contributing to high maintenance levels, this obviously led to strained relationships. Because the current system environment was designed to support the internal processes, and was not designed for real-time e-commerce, this created a lot of animosity between the eHIC and the systems departments. The e-commerce SBU claimed that the current systems were antiquated and not supportive of e-commerce.

I think we were sort of seen as, call it the interloper, ja, that's what we were ... and I think we sort of came in and expected them all to drop everything to give us what we needed. We were dependent on some of these systems. It's like okay you have to deliver this for us. You know so we weren't part of Systems, and also the departments were also treated differently, like eHIC, in the early days we had our own chill room, it might seem silly, we did not go to the systems functions, we had our own functions, so if there was a general systems function we never went. We just did our own thing. And I think that also did not help. And we didn't sit near them, because we were in Eaton House and everything, so ... (Developer, interview 016, pp 6–7)

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On the other hand, the systems departments were unhappy with the manner in which eHIC representatives ‘bullied’ them for assistance. This approach was counter to the loosely coupled organisational form in the systems area that was characterised by semi-autonomous reporting relationships and was deemed one of the reasons for their past successes. In fact, the intense mood at the time is reflected in the name of one of the workflow processes developed for eHIC. The systems department reluctantly built a workflow to adjudicate member personal information that was updated online. The name of the workflow type was ‘GEB’. The workflow description of the GEB procedure read, ‘Get eHIC off our Backs’.

The introduction of eHIC also exacerbated relations between the business departments and eHIC representatives. As a result of the conflict between the two technologies, and the resultant unsteady support from both systems and business departments, the implementation of the project was completed much later than envisaged. In addition, the frequent system failures created a flood of phone calls to the call centre, which did not help the reputation of the online service internally.

As expressed by ANT, and apparent in this case, technical artefacts are not neutral. In this instance, the Magic development environment did not require a skilled systems designer or architect. This led to suboptimal design of the databases. On the other hand, the e-commerce department was a Java-based environment. Java is tied to object-oriented modelling and mapping classes to relational or object-oriented databases. Therefore Java developers tended to have a different set of skills. To add to this, the SST developers required a single view of the customer and a process view of the organisation. The current stovepipe systems environment and the need to achieve systems integration were at odds with the approach inscribed into the SST. These differences are explained in the following comment:

... There were many data issues which had to be resolved. One of the more complex areas was of profiling. What if a Broker was also a doctor? And a member? And a dependent on another policy? With Wellness? What could he or she see? How would it integrate? This was a significant issue that we had to overcome. It forced a redesigned of our databases from policy driven design to an entity architecture. Extremely challenging but in the end it was well worth it. Another major issue that H-World introduced was the transparency of our information to our communities. It's easy to hide bad information from your customers over the phone. But when they log in and view their statements in real time and you have data issues it's very difficult to get around that. I guess there were two issues here. The first was bad data and the second was the timing of information. Our data was bad, at least H-World forced the business to sit up and take notice of this and clean up the data. Secondly, many of

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the processes in the corporate systems were updated in batch. This didn't work so well when our users wanted to see up-to-date information. (Senior business analyst, interview 30, p 3)

On the other hand, Magic applications were used to sustain robust applications to support the call centre and the myriad functionally based administrative processes. Although Magic supported business growth and rapid changes, it led to suboptimal designs for Java-based concepts such as reuse. Over time, the idea of a database design on an entity model would only gain traction largely because of the SST's needs. At the outset, the collision of these two (Magic and Java) socio-technical assemblages constrained the way the SST functioned.

Moving to users, although *interessement* was positioned in the various promotions for convenience, secure and real-time information, from a user perspective the corporate standard to verify user name and password through a call-centre validated process was a major barrier to using the system. Since firms can be held liable for granting consent to users to access a member's information, trust is a concept that applies equally to the firm and the user. In supporting relationships via SSTs, the firm delegated trust decisions to verify and authenticate the identity claimed by the user to both human and technical systems. The SST was liable for any breaches of trust or negligence in its use. Therefore a policy for controlling access to the SST via new roles and profiles had to be established. These were stored in a database. Linked to these new identities were a variety of attributes describing specific relationships, so that the SST could grant the correct privileges to the user. Some users expressed their frustration that this process was protracted:

The only snag is the registration process. 48 hours is too long to wait for registration confirmation. Everything else, WOW! (Online feedback, June 2001, line 119)

On the other hand, the telephone was ready at hand. Instead of grappling with the cumbersome registration process or the cognitive effort of remembering a password and user name, the member could easily access the firm's phone number and his or her membership number, which was required for authentication. These details were already inscribed on his or her membership card.

Furthermore, servicing issues were directly associated with the claim processes. Given the younger profile of the HIC member base, it is not surprising that most members who represented

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a critical mass called the call centre less frequently (see appendix D, figure D1). In other words, these healthy members who had low claim incidences had a low need to interact with their health insurer. Despite this, following Pareto's principle, as a collective they represented the majority of calls. To make a significant impact on calls, the SST team would require the arduous task of enlisting these members. However, what would emerge over time is that those members with the greatest servicing need, using multiple channels – in other words high-frequency callers – would also be loyal users of the website. Whereas the intention of the organisation was to develop a channel that was to replace the traditional call-centre channel, different and unexpected patterns of use emerged.

Another reason that negotiating with the SST to become the dominant channel did not work is implicit in the role of the call-centre consultant. It soon became apparent that the call centre agent's role is multidimensional. In a typical conversation about the depletion of funds (illustrated below), the call-centre consultant can play multiple roles, including distilling the information from her system, interpreting it by quickly reviewing historical transactions, and, by combining knowledge of the product and member, offer reasonable solutions to the problem:

Member: *What is my current savings balance?*

Call-centre consultant: *R350,00, sir (information distiller).*

Member: *Why is my balance so low?*

Call-centre consultant: *I see that most of your claims by your doctor have been charged at private rates, sir (interpreter and product expert).*

Member: *But my son needs his spectacles changed.*

Call-centre consultant: *I am sorry to hear that, sir (empathy). Unfortunately you would have to cover this from your own pocket. In future, I suggest that you please ask your doctor to charge you at medical aid rates (adviser).*

So the call-centre consultant is also a financial advisor, product expert, and information interpreter, in essence a knowledge worker. In her dialogue with the member she is able to provide an understanding of the problem and opinions based on sound experience. In addition, she has the ability to display empathy, which provides that personal touch which is essential in dialogues that are both sensitive and controversial, such as a query over funds.

Davenport and Prusak (1998:5) define knowledge as follows:

Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating experiences and information. It originates and is applied in the minds of the knowers. In organisations, it often becomes embedded not only in documents and repositories but in organisational routines, processes, practices and norms.

From this perspective of knowledge, the embedding of the call-centre consultant's work routines was evidently more complex than the programming of Web applications that represented the key call reasons of members. Moreover, informational asymmetries are evident between the customer and the call-centre professional. The service user engages with the call-centre professional from a position of dependency, and the call-centre expert determines what is in the member's best interest, based on his or her professional judgement (Laing *et al*, 2004).

Furthermore, in using the self-service technology, the user is responsible for navigating the pages, finding the information, and expending effort to establish why his or her funds were depleted. In this way, the user interface provides a key contrast when compared with traditional services (Gummerus *et al*, 2004). However, the user interface is limited to displaying the functionality and content organisation. Thus it supports the look, feel and usability of the SST, and passively facilitates the interaction. On the other hand, the call-centre consultant's value is inherent in the ability to dynamically interpret the text. The Web relies on the user for this function and, given the technical complexity of consumer-driven healthcare products in general, this counts as a limitation.

In ANT terms then, the interrelated roles of the call-centre consultant cannot be easily defined and attributed to the Web actor for acceptance. Making the Web front-end function as effective as a call-centre consultant would result in a long and difficult set of negotiations – as future redesign attempts will reveal. Customising a message to address a specific user problem and packaging it into a personalised response is a complex task that human actors tend to dominate. This applies in particular to follow-up queries of a financial nature, such as unpaid or rejected claims, chronic medicine queries, third-party payments, errors with statements, and high-risk transactions, such as hospital authorisation or travel bookings, as suggested by users in a focus group session. As a result, it is not surprising that loyal users prefer to use the Web for simple transactions such as general product information, viewing claims, MSA balances, and benefit

information, and checking their wellness points.¹ This view is confirmed by the usage statistics in the management reports.

Opening the black box of the call-centre consultant reveals many more actors, many more roles, and many more associations that are not amenable to the Web technology. The telephone was inscribed in the membership card, and in the firm's correspondence to members in the form of the claim statements, magazines, fact files and so on. In other words, the telephone number was ready at hand. The rapid increase of cellphones in South Africa further strengthened the ties of the member to the call centre. Even while members were mobile, they had access to the call centre. It is therefore not surprising that the users still contacted the call centre. To add to this, the batch mode of processing meant that the call-centre applications often had information that was timelier than the website. For these reasons, the call-centre channel displayed properties of irreversibility.

Successful networks require that allies think and act in a way that maintains the network. In contrast, the online service was being negatively hampered by the poor ICT infrastructure provided by the monopoly service provider at the time. Although the firm invested in a virtual ISP arrangement with a leading Internet service provider (ISP) company, this did not appear to alleviate the 'speed' problem. One of the users noted:

Even with a dedicated 64K ISDN line, I have not managed to get to any page I tried to access. Please ensure that there is either more bandwidth for access or the system does not bump you off in too short a time. Note: Most people access with a normal Telkom phone line at 14,400 K and must find it impossible to access the site. (Online feedback, October 2001, line 533)

The comments from frustrated users suggested that the site had been designed for broadband users. For those home users with a 28.8 k modem, the site would be difficult to access. The typical webpage size was only about 150 k. However, 150 k + the additional 128-bit encryption, made the pages sizeable. Secure Sockets Layer (SSL) would set up an encrypted session between a client and a server using 128-bit session keys once the user logged on. It was assumed that the users would feel more secure in their interaction once the yellow padlock appeared on the bottom of their browser. However, security concerns would exacerbate speed issues. For this reason the business analysts and developers often suggested that a no-frills website should be designed for

¹ Feedback from focus group session.

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the many users with poor bandwidth. Other suggestions included limiting the encryption to areas containing transactional information. However, the custodians of branding and corporate security policy standards – represented by marketing and internal auditing – curtailed these options. The irony is that as computing and networking power increased with the advent of the Internet, there was a pressing need to increase security measures and censor information.

For the most part, even in the context of slow and costly access, the majority of HIC's members simply did not have access to the online service from home. At work, most employers were imposing restrictions on employees against using SSTs in order to alleviate productivity and security concerns. By design then, the online service was accentuating further the social exclusion of marginalised and impoverished members by creating 'information haves' and 'information have-nots'.

And even for those members who did have access to the Internet, the openness of the Internet standard was contestable, as members using different browsers continued to undergo varied experiences. As has been shown, the SST can be described as a heterogeneous network consisting of varied technologies, networks, and standards to support a diversity of application areas over time and space (Hanseth, 2000). At the time, Microsoft and Netscape, the two popular browsers, were in a 'battle' to become the browser standard setter. So while eHIC was attempting to become the dominant service channel, these firms were attempting to grow their install base. Their lack of consensus was creating confusion among HICs consumers as well as software developers. In these early stages many users expressed disappointment that the site was not compatible with their browser versions. For example:

I was disappointed to find the limited number of browsers available for Linux, but dutifully went ahead and started downloading Netscape 6.2, but lost interest when I discovered it was 27MB, stiff for a dialup ... I don't quite get what's wrong with, say, Konqueror, Galeon, etc, all excellent browsers capable of SSL2 and 3, Java, etc. Anyway, I poked around looking for a SA copy of Netscape, hoping for a quicker download. On the off-chance I tried Mozilla, and hey presto, it works like a bomb. Guess I shouldn't be surprised, since Netscape lives off it, not to mention a few other 'famous' browsers. Enough blurb I guess, you may want to advertise Mozilla as an option, since it's included with many recent distros. More to the point, its Mozilla 0.7, for a 2.4.2-2 kernel, Gecko 20010316. It's great to be able to browse with 128 b security, and an operating system pretty immune to those naughty trojans that email your details anyway. (Online feedback, July 2001, line 558)

I use a iMac with Internet Explorer 5. Given that IE5 for the Mac and IE5 for Windows support the exact same features with full java support etc. I fail to see why your site disallows my browser. The only reason I can think of is that your programmers never

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thought it possible that someone with a Mac would want to use the site. I trust that this can be fixed quite quickly. (Online feedback, July 2001, line 558)

Initially, operating systems such as the Apple Mac (Macintosh) platform, by virtue of the design, were ignored in the H-World online strategy. By dismissing Mac users as insignificant because of their small numbers, they were in effect keeping valuable services out of their reach. Over time, and given increasing member demands, the development team had to ensure that users with different browser types and versions were accommodated and that the website was therefore compliant. This obviously had an impact on development timelines, and increased the amount of testing for the business analysts and graphic artists. On the other hand, while browser standards constrained the user, the open standard for telephone interconnection gave users the assurance that despite the type of phone they owned, they could still interact with the health insurer. But over the years Microsoft and Netscape would learn to cooperate more extensively with each other to facilitate the widespread use of e-commerce and thereby better serve their mutual interests. Soon these companies would decide to settle on a truly open standard. Consequently users would not have to worry about their browsers not working at a particular website.

Meanwhile, for the majority of users, the SST was not being viewed as a substitute channel, as the business had defined. First, for most members, access to the Internet was simply lacking, so by design they were not part of this system. For those who did use the SST regularly, statistics revealed that most of these users called the call centre soon after using the website. This finding suggests that for most of the loyal users, the translation of the SST that resulted was that of a technology that offered them a means of arming themselves with their health plan information, so that they could be well prepared when engaging with the call-centre consultant.

These examples make it clear that the ICT infrastructure, browser and operating system standards interacted with internal system differences between Magic and Java – and the various beliefs by actors such as management, designers, other departments and users about the role of the Web – to affect the extent to which the SST could become the dominant channel. In this episode and in contrast to the traditional channels, stable networks or aligned interests with allies of the SST could not be maintained.

Framing

From this discussion, it might be concluded that the translation of the actors in eHIC, the OPP, failed to achieve the desired outcome as the preferred channel or the channel of choice. As described, H-World was an association of human and non-human actors. The inscriptions internally among management and eHIC representatives were certainly stronger than those displayed by the external users. The initial network and its loosely formulated OPP – ‘to become the channel of choice’ – were readily accepted internally by a few of the key senior executives, but remained too weak to mobilise a sufficiently strong network to become the dominant channel. Inscriptions were strong among the management team, given the investment in people, hardware and software. In addition, exploiting the Web capabilities was in line with increasing the innovativeness of the company. After all, potential joint venture (JV) partners, the media, software vendors, and other major industry players were supporting these notions. One of the reasons for this outcome was that the advocates of sales via an intermediary were aligned with powerful networks inside and outside the organisation, so that the vision of direct sales had to be reformulated.

Naturally, a loose formulation of goals such as ‘the preferred channel’ was not sufficiently convincing for those managers and staff that represented the channels the SST was attempting to substitute. More specifically, during this long implementation journey, the interactions with human and non-human actors supporting the traditional channels would be more contentious than collaborative. In this spiralling innovative climate, and increasingly demanding service environment as a result of rapid membership growth, achieving synergy between departments would prove particularly problematic, largely owing to the various actors having to facilitate multiple and conflicting agendas. As a result, negotiations were often beset by ‘clashes’ of interest, and these conflicts often became irresolvable.

Successful translations also depend on how faithful key actors are towards their alliances. Certainly, the local ICT infrastructure was not supportive of a self-servicing environment for a majority of the members. Furthermore, standards and security were impeding the Web channel, compared with alternative channels. In addition, the poor interoperability with internal systems designed to support internal processes, and the lack of technical skills of the newly appointed development team, translated into unsuccessful and unstable translations between internal actors.

While some of the key human actors internally were convinced of the value of the SST, most of the external users were not. Attempts to mobilise, expand and stabilise the majority of users turned out to be complex and frustrating. For the user, the telephone clearly had a better inscription than the web. Allied to the telephone was the membership card, with a membership number and telephone number, which could easily fit into a member's wallet, while a user name and password remained a cognitive challenge. There were simply too many things attached to the use of the call centre. The competing call-centre channel in alliance with the frozen network element of the telephone was now being acknowledged as a black box. On the other hand, weak inscriptions demonstrated by the allies of the SST and their inability to act in ways that maintained the network led to many members persisting with the use of traditional channels. Given the properties of irreversibility demonstrated by the traditional channels, there was a realisation among the senior management team that the 'substitution claims' may have been far-fetched. These views are noted in the following comments:

When the dot bomb started happening, you know, the realisation of what happened is that, maybe it really wasn't this tsunami ... (CIO Health Systems, interview 36, pp 1–2)

From a landscape point of view we may have been a bit blind to the fact that connectivity levels and even on dial-up at that stage were abysmal ... (Community head, interview 49, pp 1–2)

When the dotcom bomb started, the role of e-commerce in the organisation was subject to further internal evaluation. The inability to deliver the initial projects on time, as well as the inability to convert a majority of the members to the online channel, meant that the intention to substitute the call centre and become the channel of choice was compromised. This led to a shift in strategy as well as a change in the way that the e-commerce organisation was structured to improve internal alignment as well as inter-departmental relationships. While there was still a focus on efficient servicing, major emphasis was being placed on a new paradigm that was emerging, one where the organisation sought to 'dazzle users' with online tools designed to support its Wellness program.

8.1.3 The channel that dazzles

Inscribing

Ironically the same media that had once supported the ‘hype’ around the Internet conveniently reassessed their views after the spate of dotcom failures.

It grew to be known by many names – the Information Superhighway, the World Wide Web, the Internet, Great Supreme Digital Being – and its promise spread its wings the way promise is spread on a really large piece of toast. This new thing was so deeply wonderful that it would boost planetary wealth and alter the business landscape with all the impact of an asteroid. Startups rise. Giants fall. Hope survives. What a cruel, cruel illusion it all turned out to be. Stoked by the false promise of office foosball and a lot of irrational exhibitionism, the dot-com phenomenon proved to be shot through with phoniness – an apparition within a hologram wrapped inside two spectres of a mirage, with some tulip mania to boot. As for why anyone ever thought doing business on the Web was a good idea, search us. (*Fortune*, 2000)

Meanwhile, to get acceptance internally and externally, a stronger form of enrolment was needed. After the ‘dotcom bomb’ the e-business was reintegrated into the IT division, and was now operating as one of the many systems departments. Senior management were hoping that the closer relationships with rival systems department and a location change would resolve some of the alignment issues experienced during the previous phase.

The ‘dazzle’ metaphor describes the shift that reveals the second major inscription of the online self-service technology. The role of the self-service technology was fundamentally driven by the firm’s focus on the wellness offering. Within this technology frame, the emphasis was on hedonic aspects, as opposed to merely health plan transactional features, as during the ‘preferred channel’ era. Members were now being incentivised to stay healthy, and the wellness team were interested in whether the Web could be an appropriate mechanism to promote a healthy lifestyle. After all, interested members could now earn loyalty points and receive rewards for following a healthy lifestyle through online tools.

According to agency theory, incentive benefits can align the consumer’s behaviour with support of the firm’s goals (Bhattercherjee, 2001), in this case leading a healthy lifestyle and thereby reducing the claims. These programmes are developed for a variety of reasons: to increase the loyalty and value of existing customers; to gain access to richer customer information; to manage

consumer behaviour; to combat competing schemes; and to counter shifting sales (O'Malley, 1998). These incentives can be offered in the form of cash, prizes, coupons and redeemable points. According to cognitive-learning theories, the value of a loyalty program for a customer can be identified by five elements (O'Brien and Jones, 1995):

- The cash value of the incentive as a proportion to spend or effort
- The range of rewards offered and the redemption options
- The aspirational value of the loyalty program
- The feasibility of attaining the aspirational value of the program.
- The ease of participating in the loyalty program

The same literature offers mixed and somewhat sceptical views on whether these programs can meet some of these objectives. Nevertheless, the Forrester Report estimated that US online retailers alone would spend \$14 billion on online promotions by 2005 – a large part of these promotions will be in the form of loyalty incentives.

Meanwhile, clicks and mortar firms like UAG were also differentiating their loyalty incentives by integrating offline and online loyalty programs to attract members. Apart from incentivising members to lose excess weight, quit smoking and boost their fitness, UAG used its Wellness program to enrol members to utilise the online channel to track their claims, conduct hospital pre-authorisations, view their saving account balances, book their flights, and so on. The rewards included discounted gym fees, lifestyle magazines, movie tickets and airline travel and hotel accommodation. Members were being encouraged to achieve the aspirational as well as the intrinsic value of moving from 'blue status to gold status' by participating in offline and online programmes to improve their health.

Translating

The philosophy of improving the lives of its members by providing them with lifestyle benefits and rewards for maintaining their health is captured in the following comment:

The problem with human beings is you need to give them some reward for their effort. And the whole concept of Wellness is that you get a reward or an incentive, but by then you would feel so good that, that it is sort of, you know, an added bonus, 'the reason why I am doing it is because I am actually feeling good by exercising or if I meditate twenty minutes

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every day'. So you catch people, either with, you know, scaring them, showing them the huge risk, or you catch them with the incentives, which are just so attractive, that in the end, you have them stick with it long enough to feel it in their bodies and mind that they are actually benefiting. (Stress expert, interview 35, pp 15–16)

This extract points to the conflict of interest between the member and insurer, and the use of power by the firm to resolve these conflicts. Economist John Kenneth Galbraith (1984) distinguishes between three kinds of power: coercive power wins submission by inflicting or threatening sanctions; compensatory power by offering incentives and rewards; and conditioned power by changing beliefs through persuasion or education. The firm was attempting to inscribe the right mixture of these forms of power in order to resolve conflicting interests between itself and its members.

Power can be socially essential, but it can also be socially maligned (Galbraith, 1984). After all, inscribed in the Wellness program is the view that consumers follow the mannerisms established in behavioural psychology theories. In particular, humans behave in the same manner as Pavlov's dogs.² The organisation was attempting to obtain compliance through the principle of association (Cialdini, 2001). Similar to Pavlov, the organisation was attempting to get its members to attach pleasant feelings and a positive attitude towards a healthy lifestyle by making these behaviours closely associated with rewards. In doing so, the organisation was able to attract many members by connecting its healthcare product to the current cultural rage of 'healthier lifestyles'. To increase familiarity with the Wellness program, UAG became a major sponsor of popular sporting events, including rugby, soccer, cricket and wheelchair basketball. Unlike other healthcare insurers, UAG spent a substantial amount of money on advertising, specifically during recurring sporting events on television, such as the English Premier Soccer League.

However, on perusing the internal reports, while more than two thirds of the health member base were also wellness members, less than 1% of wellness members achieved gold status (highest status), while more than 70% remained on the blue status (lowest). Clearly, while members liked to be associated with the Wellness programme, this did not necessarily translate into habitual

² Ivan Pavlov was a famous Russian behavioural scientist who showed that he could get an animal's typical response to food (salivation) to be directed towards something irrelevant (a bell) by simply connecting the two objects in the animal's experience. In this famous experiment, Pavlov demonstrated that when food was presented and accompanied by the sound of a bell, over time the dog would salivate only to the bell, even when no food was presented.

behavioural changes for a majority of them (if one were to assess this from a change in status perspective).

Nevertheless, the ‘regime of truth’ that ‘prevention results in reduced healthcare costs’ was perpetuated on the results of the minority of members who were on gold status. Internal research indicated that members on gold status had a lower claims ratio than members on lower statuses, and significantly low in-hospital claims. How much of this was due to correlation as opposed to causation was not explicitly communicated. After all, the gold status of wellness members might be attributed to a prior or already habituated healthy lifestyle and not to the program. In other words, it is not unlikely that for the most part these members were already living a healthy lifestyle and easily ‘fitted’ into the Wellness program. Another perspective is that gold status and low claiming may be primarily associated with the age profile of the person, rather than the program itself. After all, the incidence of in-hospital claims among younger members is naturally higher than older members, despite lifestyle changes. One would need to study the lives of these ‘gold status’ individuals to understand this more closely.

At the time, WSC was powerfully positioned, and was becoming a major part of the network. There were definitely strong ties between the head of e-commerce and the head of the Wellness Program. Consequently, the online channel was being viewed by the business proponents of wellness as an important ally to their success. The two leaders shared similar views, using the ‘cost savings’ argument as the rhetorical device to enrol users to self-service wellness applications, as opposed to wellness practitioners. With these redefinitions of the SST concept came shifts in the enrolment strategy of H-World. A set of deliberate decisions were made to ensure that the best – and formidable – team of developers and business analysts were available for wellness projects. H-World had now become UAG’s spokesperson for wellness.

The ‘dazzle the customer’ technological frame became a significant source of new online tool ideas. Two noteworthy online applications were the nutrition centre and the online stress centre. Based on their belief that the Web could add value in preventative healthcare, the nutrition centre project team aimed to establish an integrated nutrition programme, using scientific guidelines, periodic reviews, and data collection, all supported by a nutritionist co-ordinator. Unlike in the past, when H-World team members drove the project, the approach H-World took during this phase was more consultative. Meanwhile, the clinical team who were now driving the project

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selected a panel that consisted of three nutrition academics from universities around South Africa. This panel was tasked to review the design of the application and provide guidance. Panel members were also involved in a number of workshops with the development team. The design of the tool had to get their stamp of approval on the ‘scientific basis’ in particular as well as the ‘user friendliness’ of the design. Here again H-World was the obligatory passage point linking and translating different actors, such as self-service concepts, information technology, clinicians, dieticians, academics, developers, business analysts, and users. The nutrition expert described the various interests implicated in the design of the online nutrition centre:

Although they are not technical people [referring to the panel] they obviously have experience in their academic and dietetic practice scenarios. This is how we kinda got the rubber stamp. There were a lot of challenges I mean within any panel you are going to have differing opinions. Although they are all excellent academics in their own right there was of course a certain degree of not necessarily conflict but differences of opinions in certain aspects. You could certainly pick up the different slants in their particular field of interests and or passion. So for example one would constantly be harping about fibre or lentils and the other one would be harping on about you know various different angles. That is one of the reasons you have a panel I suppose but when you got a specific task to perform you don’t really want to have to deal with too many opinions. The other challenge was also getting them to understand what HIC wanted to do with this scientific information which they are often used to working with and why it wouldn’t necessarily be possible or feasible in a Web environment. So taking the science and translating it into an interactive tool was quite a challenge. (Nutrition expert, interview 46, p 11)

The team worked very hard to establish specific goals about what the tool was and parameters for what it was not. Some of the key individuals felt that this was one of the areas where they stumbled a bit, because they were almost aiming towards something that was too complicated, whereas they should have been focusing on keeping things simple.

At the time the nutrition centre had not put in any specific programmes that enrolled registered dieticians. While members could go to see a dietician, there was nothing in place that ‘pushed’ members to dieticians. So the only way that members could obtain nutritional information initially was via communication through the magazine, email and the weighless programme. However, the weighless programme did not appeal to everybody. It was obviously seen more as a programme specifically for people who wanted to lose weight, but the objective of the online nutrition centre was ‘to catch the entire population’. The panellists had the view that the team needed to create an online dietician and the development team were transfixed by this conceptualisation.

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Upon reflecting on this inscription and the ability of the Web to translate this inscription, a senior member of the team viewed this as a mistake.

... trying to figure out everything a dietitian would want to know from a person and trying to put that in some kind of tool was actually a mistake because we really didn't intend to become or replace the services of a registered dietitian, there is absolutely no way that we could possibly do that and yet we were trying so hard to get to that point of being an online dietitian. (Nutrition expert, interview 46, p 11)

Having been a practising dietitian, the nutrition expert suggested that because food and eating are very emotive issues, the 'real-world' dietitian often has to play the role of psychologist, part-coach, part-friend, and part-dietitian. A dietitian also spends an enormous amount of effort in motivating a patient. And even during the follow-up sessions, the dietitian becomes the motivator and the counsellor. The limitations of delegating the role of the dietitian to the self-service tool are succinctly described by way of example by the nutritionist:

I mean online, on the tool I could have had two men who were trying to lose weight and exercising three times a week. One could have been a bachelor who was a complete perfectionist and working very long hours and travelling a lot. One could have been a retired man who had lots of time on his hands and had his own vegetable garden in the back and lived out on the coast. You know or something like that. Those are the kind of things, the small nuances that are important, to bear in mind because of the fact that this eating is something we all do every day and it is highly emotive and so highly affected by the type of life that you lead. So there are so many factors and not even necessary really to be written down. You know, you just pick these things up. It's really about gathering information and then tailoring it. Because we know with compliance, with any kind of lifestyle change, the more you personalise it, the more suitable it is to the person's lifestyle, the more success you going to have. (Nutrition expert, interview 46, p 15)

In attempting to emulate the interpersonal ability of the dietitian and the resulting interactive nature of the application requirements, Java scripting was enlisted to construct the front-end. However, this design would soon prove to be prone to maintenance issues as most of the rules were hard-coded and not variable driven.

One of the key features of the tool was assisting users to track their progress on the programme. This was largely in the form of self-reported measurements. However, there was no mechanism to establish whether their measurements were accurate, and therefore these measures had to be trusted. Furthermore in the online environment, it was difficult to counsel users at the point that they might have slipped or diverted from the programme. The SST was prescribing a particular approach to dietetic practice. To support this approach, the development team enlisted the aid of

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other non-human delegates such as frequently asked questions (FAQs) to address common issues people faced when they follow a dietary programme. Users could select from a list of common issues and the system would automatically provide the user with generic feedback on those issues. Apart from coverage in the UAG magazine to enlist and keep users interested, users received monthly electronic newsletters.

Over time the application was extended to include an ‘email a dietitian’ facility and the team viewed this as taking one step further towards translating the tool into a real dietitian. The dietitian coordinator for the online nutrition centre was responsible for answering questions posed by the users. However, the following comment suggests that responding to these emails was extremely challenging:

... I would get an email saying ‘Dear dietitian, How do I lose weight’. Not signed. I don’t know the gender I don’t know how much exercise the person is doing. I don’t know anything cause what they do or don’t eat. So they would have to get a generic response because the generic information I received could only be translated into generic recommendations and I did not feel that was very fulfilling because it was almost like, what is the point then, they could have probably just as well searched an FAQ database. (Nutrition expert, interview 46, p 11)

On the other hand, some users would email with elements about themselves and in significant amounts of detail. But this information was still insufficient to create a proper individualised meal plan. As a result, the online dietitian coordinator found that she was providing generic recommendations. To counteract this, in her email follow-up responses she began to tell users how to get hold of a registered dietitian, and referred them to the registered dietitian association’s website so that they could search for a dietitian in their area.

The realisation eventually emerged among the development team that designing a diet on the website was not going to be the ‘be-all and end-all’.

In July 2003, HIC enlisted a medical doctor who specialised in stress management and wellness to assist in developing an interactive online stress centre. Despite being an author and an avid user of the computer and the Internet, the stress and wellness expert had not previously been involved in the development of a self-service application, and found the experience to be quite a learning curve from the outset. The team had to launch the first phase in December 2003, so there was immediate pressure to complete the project in a very short period. No similar application was available online, so in many ways it was pioneering work. Even the

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organisation's prior experience with the nutrition centre was not remotely the same as the envisaged stress centre.

However, the high-level layout of the nutrition centre, which is based on following four or five 'easy' steps, did offer some direction. Nevertheless, the content and the mechanisms for interaction had to be different. So the first hurdle was designing the user-assessment templates, and then adapting these, so that they could be used on the Internet. The assessments were designed to assess personal stress. Personal stress aspects included personal, relationship and lifestyle stress-related issues. Also inscribed in the design was the ability to demonstrate to users the strong link between stress and medical ailments. For instance, users could be shown that there was a strong link between their stress level and their risk of high blood pressure. There was also a major emphasis on stress in the work situation. The design of work-stress assessment was influenced by the fact that most users of H-World accessed the Internet during work hours in the work situation (see appendix D, figure D4). So it was assumed that work-stress assessment can be targeted successfully at that large segment of users.

The stress management tools were aimed at addressing specific stress triggers. Once users had completed the stress assessment form, they could save their input. When they had completed the assessment, they would get feedback on their personal stress triggers in their personal stress form, which they could either print or save. Users would also receive guidance on the stress areas they needed to pay attention to. And then they were directed to a list of tools that were effective in managing the triggers that they had experienced. Some of these popular tools dealt with work-related stress, personal relationship issues and financial strain. Users could then select two or three tools that they wanted to work with. They could also reassess every three months to see whether their 'stress scores' had improved as a result of using the tools.

However, stress is difficult to observe without the physical presence of the patient. A lot of energy was devoted to personalising the interactive stress centre and interpreting user feedback, as described by the stress expert below:

... the way the questions were posed and the feedback was developed, so that people feel this is now really me, this is my stress triggers, this is my personal feedback and this is what I can do about it. So I have tried to make it you know, a bit more personal than what one would often get on an Internet site, with the language I used, in the first person, like 'you' and 'I' and so on. Instead of saying a person should be doing this, rather say, this is what you

can do, this is what I would recommend for you, so keeping a little bit of a personal feeling there. But, otherwise, it is very similar. It is your medium of communication and to write this, and you write for journals and magazines, and you have done something for Websites, it is not that much of a leap to doing it on an Internet site ... it is a sense, especially when I do the expert queries, but that is also something that you can sense. You can sense a lot of the person's, you know, how they are feeling at that stage, from the words. And even things like, you know, if they write the question and it is just like one long paragraph without any full stop and without capital letters, there is a sort of sense that you get that this person is quite disturbed and in stress and in need of help. And also, the length of the description and if, is it by point by point, or is it just one long rambling story. So, one does sense, you know, that sort of sense that you didn't pick up on body language but the way they write, and what they say, and the words they use, it gives you a bit of a sense. (Stress expert, interview 35, pp 5–6)

One of the inscriptions in the design of the stress management tool was that people think and conduct themselves in very similar ways. To a large extent, despite attempts at personalising the feedback, this feedback was impersonal, because it would generally be the same for anybody with that stress trigger. The process of responding to user queries about stress was described by the Stress Centre expert:

So I have got some standard responses for financial stress, relationships, for aggression ... So, from sort of the whole file of responses, I can copy and paste and then adapt it to that individual's specific question. (Stress expert, interview 35, p 21)

The feedback included the disclaimer that it was a general response.

The online Stress Centre was intended to help users address day-to-day stress triggers. Users who experienced 'painful memories coming to their conscious mind' were referred to a healthcare practitioner, or mental health expert, from a reference list. So the tool was by no means a diagnostic tool for serious mental health problems. The examples below clarify the distinction between day-to-day stress and serious stress issues. An example of a day-to-day stress trigger is the busy traffic that people who drive into South African cities for work have to deal with every day. So the tool would offer generic advice such as stagger your work hours, come in late, leave later, or try an alternative route. If people did not manage stress triggers such as traffic on a day-to-day basis, the assumption was that this would eventually escalate and become a point of stress that could lead to disease, for instance high blood pressure. An example of serious stress would refer to major events such as divorce, losing a loved one, or post-traumatic stress after being hijacked or attacked during a serious crime. If inputs or queries suggested that the user might be experiencing depression or post-traumatic stress disorder, he or she was referred to a mental healthcare practitioner.

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Apart from engaging with users online and responding to their queries, the interactive stress centre sent out monthly electronic newsletters to keep users' interest alive. Not surprisingly, both the online stress and nutrition tools would become an important ally in selling the wellness concept to potential clients as well as current clients who were still sceptical about it.

... and then PB, she was at that stage Marketing Manager for Wellness, she realised that this was a very important value added tool for our clients ... Because, often you would find people saying, well, you know, 'I am not that keen on Wellness', because they don't really see the value ... or they live too far from the gym, or whatever. So that they can now see there is value in the Stress Centre and of course in the Nutrition Centre. Because that is something that most people have an interest in, you know, sort of throughout the world.. it is worthwhile paying that R84, or whatever it is at the moment, for Wellness membership. So the aim was in the end to increase Wellness sales, to show them that the Stress Centre actually provides value to people who might not see the benefits of gyms and movies. (Stress expert, interview 35, pp 5–6)

In other words, the SST had received yet another inscription as a sales tool for wellness.

As noted, these online tools are about the separation of practitioners and patients, and the development and employment of technical artefacts to mobilise representations or information about the patient (Smart, 1985). Importantly, this representation must be adequate to 'speak' for the patient across time and space. By their nature, stress, wellness and nutrition may seem to be ideal focuses for an online self-service. For instance, nutrition takes as its business certain measurements such as body mass, age, gender, height, and waist circumference which appear to serve as a suitable 'diagnosis'.

However, in this process the user is transformed into a patient, the patient into measurements, the measurements into numbers, and the numbers into variables which represent easily transportable, understandable, and usable pieces of data for a computer program. The dietitian is reduced to a computer program that is able to compute pieces of data. In a sense, both the user and the dietitian have been displaced (Callon, 1986). They are transported across the Internet as a series of transformations. The user has been mobilised. That is, the user has been displaced from her seat behind a computer into a virtual world. The user participates through these mediators in negotiations over her 'new meal plan' for example, and aligns with the interests of the dietitian and the health insurer.

The dietitian has been rendered a multiple. Her reach has been extended to a mass of such users.
The enrolment is transformed into active support by a host of users. These users choose the

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online wellness tool as an ally and are proponents of the Wellness program, or so it appears. Unfortunately the negotiations do not end just yet. First, some important controversies must be dealt with. After all, the mobilisation can only be deemed successful if there are behavioural changes in the user, as inscribed by the designers, and not by the mere use of the online tool.

Certainly the possibility of remote diagnosis via online assessment tools captivated the panel members and the wellness team. As a result, this was deemed an appropriate area for development. However, by detaching the diagnosis from the traditional interpersonal approach to dietetic practice, these measures stood alone to represent the patient. Against this reduction of the user and then patient to a set of numerical measures, the dietetic practice itself was reduced. The nutrition centre's role was confined to a generic diagnostic reasoning algorithm that used a set of measurement inputs from the user against programmed guidelines or coded diagnostic rules provided by the panel. In a sense, the panel and the development team were attempting to 'black-box' the contents of a 'real-world dietetic' practice. The complexity in wellness practice includes personalising a programme from the way the dietitian 'reads' the patient and motivation, so that the patient perseveres with the suggested behavioural changes. In the design, there was failure to understand the pivotal role that the dietitian plays in interpreting the needs of the patient and motivating a patient in a face-to-face encounter.

Maybe the conceptions of the technology needed to be widened. To supplement these roles, the development team enrolled an ally in the form of email, so that users could correspond directly with the dietitian through the e-dietician facility, and used regular newsletters to keep the user interested. Typical issues were also managed with the aid of FAQs to make the tool more interactive. Furthermore, points were awarded to users to interest them in using the tool continually. However, even with these allies enrolled, most users did not appear to be mobilised to make real behavioural changes.

Furthermore, only a minority of H-World's total registered user base was enrolled. The role of the dietitian, it was soon realised, was multi-skilled and complex, and changing patient behaviour even more so. As a result, members were referred to dietetic practices near their locations.

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In a Foucaultian sense, the SST had the effect of organising wellness into a classificatory scheme (Mort, May and Williams, 2003). In this system of knowledge, the human body constitutes merely that object or space in which the ailment (or in this case the diagnosis of stress or malnutrition) may be located. The SST ‘subtracts’ the patient by focusing on the measurements and symptoms. In this way the SST reduces the patient to merely an external fact, a space occupied by an ailment. As a result, the SST appears at best to provide an overly standardised approach to wellness, as implied in the range of generic solutions offered to the user.

Nevertheless, the website was gaining popularity among internal actors for keeping members informed and engaged in UAG’s Wellness program. After all, members were now being informed about their current wellness status. They were also encouraged to proceed to the next status level on the program, and offered guidance on the actions to take to get there. Furthermore, the website was showing members the kinds of rewards and benefits that they could aspire to. In addition, for proponents of online wellness, tools like the nutrition and stress centres were viewed among the internal allies as demonstrating real value add to WSC’s members. In this manner, the electronic channel was seen to be keeping users continually engaged in their healthcare. Also supporting these views were the internal management reports.

There is no doubt that H-World gained a lot of traction through its alliance with the Wellness program. After all, it contributed considerably to the growth of the SST’s registered user base. The reports indicate that 90% of the SST’s users were members of the Wellness program. Meanwhile, based on this rapid growth, statistics such as the size of the registered user base and the count of the daily logins to the self-service technology supported another ‘regime of truth’, that is, the success of the SST internally. Statements such as ‘We are the largest online health insurance website in the country’, ‘We have the largest amount of pages on a website in the country’, and ‘Forty per cent of all interactions with the firm are via the SST’ were the kind of rhetoric that was used to align interests internally. An income statement (not one that was based on strict accounting principles) that was vetted by the actuaries was used to demonstrate costs savings as a result of call reductions, based on the SST use.

Enrolment of users also occurred through the use of electronic newsletters, magazine articles, and site awareness created by the various wellness offerings. Wellness points were used as an *interessment* device to persuade users to use the online channel. Call centre agents were also

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incentivised to enrol or persuade callers to use the online channel during a number of awareness campaigns. Viral campaigns and a host of online competitions that were tied to rewards and points were some of the other elements used to raise the interest of the user.

But while these allies were strong enough to attract users, they were ineffective at retaining them. Usage for registered members continued to hover around 25%. Even though the majority of users discontinued the service, there was no measure of lost users in the standard management reports. And even when management were provided with sophisticated representational systems in an ad hoc report that indicated the loss of users, they rearticulated this to mean that the current user base that had emerged was the intended one.

H-World had enlisted, through its design, those users that claim a lot as well as those that are faithful to the loyalty programme. The majority of members were neither high claimers, nor loyal followers of the Wellness program, and H-World seemed unable to impose the latest inscription onto them. Meanwhile, many of those users that were enrolled were later identified as 'points chasers'. These users were dissidents. Points created the interest, but did not 'black-box' the network for most of the users, as suggested by the high lapse rate of users. Many users used the points for online use in an unanticipated way. Rather than follow the assigned way of using the online channel as an obligatory approach to 'improve their health', the anti-program of 'points chasers' emerged as a result of the incentives. 'Deal loyalty' transpired where users were more interested in moving statuses with minimal behavioural changes to their lifestyles to obtain higher discounts. The designers had been betrayed by the users they thought they were representing. The online feedback below demonstrates a user's interest in obtaining points as opposed to the content.

I have been trying to complete the four exams for the nutrition section of the web site to get the 500 Wellness points. I passed the last three but can't get the 1st (basic) exam to display. My girlfriend logs on and sees (and completed) all four so it can't be my PC it must be something to do with what happens when I log on to the web site. Please advise how I can get the 500 points. (Online feedback, February 2003, line 2464)

Clearly for this particular user, like many others, the points were of more importance than the inscriptions of wellness designed into the system. Using the website was an easier way of gaining points. After all, instead of difficult behavioural changes such as quitting smoking or going to the gym, wellness members could simply gain points by registering on the online

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channel and by ‘reading’ articles or ‘using’ the wellness tools. Yet again, despite the creativity demonstrated by the designers, many users were shaping the innovation towards their own ends.

Incentives also created anti-programs for the internal staff, who often colluded to protect their own interests:

We hide back what is happening from management, from everyone, and trying to sort it out as colleagues. Now it is happening on the UK side. X said don’t mark the site down, because if the site is marked down all the management will get the email the site is down, then we will be penalized. But at the same time the site is not functional, it is broken, so very much to protect their own skin, to get promoted, to get good incentives and whatever, the customer, self-service is suffering. (Systems architect, interview 19, p 1)

Meanwhile, there was constantly this internal challenge by the corporate systems (Magic) environment on the role of H-World (Java). While the roles of Magic and Java appeared to be a neutral discussion and simply a matter of a technical debate about what technologies fitted the organisation’s needs the best, it was clear that the system heads were using these artefacts to manoeuvre themselves into alternative obligatory passage points. As Hanseth and Monteiro (1997) point out, appealing to the symbolic character of technology makes it possible to disguise non-technical interests as technical arguments. In the H-World case, it was certainly true that the two heads of departments had enrolled technology into their own actor-network as their ally. Therefore, when the role of the head of H-World was extended to manage the health systems portfolio, another competing network emerged.

From a technological standpoint, the SST initiative had led to the organisation breaking away from Magic, and taking to new technologies which were much more progressive, and introducing them into the organisation. During this time, most of the corporate systems developers were skilled in Magic, and any new technologies were seen as a threat to their future employment. There were growing concerns that while Magic was playing a pivotal role as the internal user interface, its role in the back-end interfaces did not necessarily work that well, from the point of view of performance and acceptability. While Magic was often lauded for enabling the speed of internal user inputs, allies within the health systems environment were questioning whether Magic was the most appropriate mechanism to speedily process what were now 1.8 million lives.

When the responsibility of the head of H-World was extended to the health systems area, there was a race – predominantly in the health side of the organisation – to transform the Magic environment into a Java/C-type environment. He authored a strong narrative as to why all core processing should sit outside the Magic system. This move was also aligned to a service-oriented architecture (SOA) design. As strong allies of the focal actor, some of the key architects from H-World sought to become indispensable to other actors in this drama by defining the nature and the problems of the latter and then suggesting that these would be resolved if the actors negotiated the ‘obligatory passage point’ as painted by them. This excerpt provides evidence of this move:

Just take JEE, EJBs, they are very good standards but it's not easy to work with standards because you must first know them, and when you know them you need to apply them and for you to know them and apply them, you must be trained to do that ... (Systems architect, interview 19, p 2)

Aligned to SOA at the time was the Java and JEE platform, with the industry claiming that this was fast becoming the industry standard for developing portable, robust, scalable, and secure server-side Java applications. The new JEE platform was providing Web services, component-based modelling, and communication application programming interfaces (APIs) for implementing SOA and ‘next-generation Web applications’. In other words, the focal actor favoured enrolling these technical allies for the recoding of existing and new functionalities into atomic services that could be reused by other services. More specifically, his new vision was to integrate the communication channels across the organisation by reusing software components. From the initiator’s perspective, the development teams’ focus should be directed towards enabling the capturing and leveraging of member information in real-time to ensure that service encounters were up to date across all the member touch points. While the rhetoric of ‘service-oriented architecture’ – a technical interest – was quite effective at aligning commercial interests, certain other non-technical interests were evident. For one, the attempt to adapt Java from purely an application for Web development to core processing was a way of associating the software to multiple interest groups within the organisation. Attention must also be drawn to other social agendas inscribed in the Java/SOA concept, as suggested by the following comment:

... There was competition between the two teams on many levels. At the top level, Tom and Luke both were competing to be Jim's (Group CIO) understudy. Luke was the more conservative, hands-on, cost conscious IT manager, whereas Tom was a big ideas, big budget, silicon-valley type of persona. Which leadership style would prevail would determine the future of UAG's technology platforms? (Senior business analyst, interview 30,

p 3)

As argued by Morgan (1986), the notion of rationality is always interest based and political. The excerpt above supports the notion that managers often use the idea of rationality to pursue their personal aspirations. Nevertheless, the key to translating the interests of a service-oriented approach rested with the technical superiority of a Java/C environment, and as such, the ‘old’ Magic technology was rendered as being inferior. As a result of the introduction of Java in the health systems area to redesign certain core processes, many developers in the Health Systems began to support Java, mainly on a personal basis. After all, Java presented a new set of skills for them, because Java was more broadly acknowledged in the IT job marketplace than Magic. Even within the organisation, component-based design and principles of object-oriented (OO) programming such as reuse were expanding, and these events ‘interested’ the developers. As Java was becoming pervasive in the organisation, so it became easier to enrol allies among developers to gain acceptance for concepts such as entity relationship modelling and SOA. At the same time, many developers in the traditional systems area were starting to accept that the classic client-server approach inscribed within the Magic software was antiquated. The newer thin client technologies had the advantage of low maintainability and the much-desired ability to interconnect to a broader set of IT assets. Furthermore, services could be encapsulated and made easily accessible. Therefore Java was not neutral in its effects on developers. Inscribed in Java was a better ‘cv’ for the developers. It also represented current technology and therefore current exposure. The excerpt below demonstrates how the shift towards a new platform was aligned with the interests of developers.

H-World is probably at the forefront. We offer latest technologies to our developers, trying to keep their minds active. I think the fact that we are on Dynamo ATG, a product which is not well known amongst South Africans, that is a bit of a drawback for developers so we can go with something more mainstream that will benefit developers more. Unfortunately developers view Web Logic has a mainstream technology or J-Boss or something like that. They offer a product based on standards. (System architect, interview 30, pp 2–3)

As a result, new standards for systems development would emerge over time with JEE. Furthermore, as time would go by, the current systems methodology would be enhanced to include minimalist concepts from UML that are aligned to OO development methodologies. In effect, Java imposed a new way of working for the back-end systems developers. They started to play an increasing role in developing components, instead of the monolithic code associated with

the Magic era. And since these components were portable, they could easily be reused for the Web. The developers were aligned with the focal leader's vision that a Java/C environment was technically superior as well as more suitable for the back-end processes, at least for health systems. Having enlisted these allies, Java was now in an ideal position to forge a durable and dominant place for itself in the systems environment.

Framing

As the SST started to play a major role in the Wellness program, it was slowly being validated as a novel and exciting way to interact with the clients and promote wellness. However, although UAG is known in the marketplace for offerings that are inventive, attempts to engage people in managing their health through the online channel, when compared to the size of the user base, showed only moderate success. It appears that translating the wellness innovation and engaging style to the online world appealed to only a minority of users and not the numbers had been envisaged by the designers. There was this realisation that at best the self-service tool was a complementary channel for a small captive audience. The Wellness program itself, while proving to be an effective product differentiator for the health insurer and attractive selling point for brokers, was not effective at enrolling a majority of the member base in terms of behavioural change. With the appointment of the new head for the Wellness program, there was a 'push' to drive members towards the organisation's wellness partners. In the end, despite moderate use by end users, the SST was an oversimplification of what wellness practitioners do. It appears for now that only 'real world' wellness practitioners can deal with the full complexity of the wellness practice.

At the same time, alliances between H-World and the health systems department played a key role in the new way of processing claims data, and had significantly enhanced HIC's claims-paying process. The organisation's ability of same-day processing of claims meant that there was marked improvement in payment times. The success of electronic claims processing was also as a result of the new electronic interface that was developed between the healthcare funder and the major hospital groups. As a result of mutual interaction, the traditional systems area and the once-formidable e-commerce actors (actor-networks) joined to achieve these broader aims. However, one of the side effects for the SST was that as the organisation's claim payment turnaround times and reliability increased, once-popular online applications like claims tracking

became less and less critical to the member. Furthermore, significant system enhancements were being made to the call-centre environment, further developing the telephone as the dominant device in interacting with HIC.

Meanwhile, internal research to evaluate the performance of the call centres suggested that the call rate increased significantly soon after a site visit. Paradoxically, the calls made by loyal users of the SST were markedly higher than non-users. Significantly, there was also a positive relationship between calls and wellness status, which suggests that the greater the wellness status, the greater the servicing need via the traditional call-centre channel (see appendix D, figure D1). eHIC's income statement, which assumed that it was reducing calls, was being challenged. The e-department was entering another episode of scrutiny. Various actors began demanding proof of the claims reflected in the SST's OPPs. After all, inscribed in e-commerce is the actuarial discourse of minimising risk while maximising returns for the firm. The burden of proof was sidestepped with rhetoric. Instead of addressing the facts, a new OPP was articulated, one that suggested that the type of service provided by an SST is something that 'customers expect from a firm like UAG'.

8.1.4 The complementary channel

Inscription

The previous head of Wellness was reassigned to improve the call-centre service performance. Meanwhile, his successor was sceptical about the efficacy of the Web in improving a member's health, and showed more interest towards the network of human actors in the form of healthcare and wellness professionals. Being less attuned to the value of the SST in wellness offerings than his predecessor, there was accordingly a notable shift in alliances with the Wellness team from the Website to networks of healthcare professionals.

And Wellness is kind of moving away from just the Web, you know. I think we have been fairly Web centric. Now they have said ... no, for nutrition, you have got to go and see a nutritionist, which I agree with. There are certain things that we are not very good at, for the Web. You are not going to go to the gym on the web. You are going to go to the gym near you, physically, you know, physical ... (System architect, interview 30, pp 2–3)

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Despite attempts by H-World management to persuade key actors that wellness online ‘worked’, the third major inscription that emerged was one in which the self-service channel was regarded as a complementary channel. A missing spokesperson for H-World in these debates was the previous head, who was now focusing on his new portfolio as chief operating officer (COO) of international operations. Some of the H-World staff believed that the new head of H-World was unable to ‘drive’ H-World the way the previous head had. A number of reasons explain why she was unable to become an effective spokesperson for H-World. Some are captured in the following excerpt:

I don't think it's humanly possible for people to deliver what he delivered and worked like how he works. She's at least a couple of points behind with that. And maybe it's kind of expected. I think he carried the can. He worked so hard, he earned those people respect. When he walked in he wasn't liked. When he arrived here five years ago he wasn't popular. They thought he was this young chap who thought he'd walk in here and sort of run the place And I think he learnt a lot along the way, I think Sally's got very big shoes to fill. I feel sorry for her, I think it is tough. (Staff, interview 38, pp 5)

Meanwhile, of the two networks, face-to-face consultation would prevail over the use of virtual diagnosis and consultations mediated by a stress and dietician practitioner. This current technological frame emerged as contemporary social, technical and political contexts made the inscriptions for other channels stronger. In this case, the prevailing network appeared to be mobilised by one actor, the new wellness head, who became its self-appointed spokesperson. As a result, there was a change of heart over the role of the SST channel. The strategies to achieve the next translation required the skill of rhetoric, using conversation, argument, persuasion and justification to create a ‘heterogeneity of alliances’. The new inscription that depicts a complementary channel is an example of such an articulation:

Our members can continue to use the call centre and rely on our regular postal mailings, but if they find the Web more convenient, we wanted them to have that option as well. We also recognized that many members would want to communicate with us across multiple touch points, including Web self-service, phone, e-mail, or even mobile devices. So making sure that the experience was seamless and consistent across all those service points was critical. We want to be able to recognise our members as individuals on contact and ensure that we are using everything we know about them to deliver the most fulfilling service experience possible. (CIO Health Systems, December, 2005)

This redefinition called for different enrolment strategies. With this redefinition it was acknowledged that the SST would continue to have many identities. Furthermore, by drawing upon the inclusion of previous technological frames in this broader ‘complementary redefinition’, the SST was able to resist many of the commonly held beliefs that the SST had not

delivered on previous technological frames. For instance, it was now acceptable that a user could use the phone as well as the website. The new frame provided the SST with more flexibility and in this way became a key OPP for significant organisation events. In fact, in its latest conception, the SST was becoming a proxy that tangibly represented the firm's 'innovativeness' and as such, would assist in enrolling JV partners willing to form an alliance with a 'progressive health insurer'.

Translation

The path of translation is seldom smooth. When there was a change to a new head of the rewards program, points for using the website were immediately reduced. The new head was not interested in users who were 'points chasers' and therefore there was a shift to fewer points for clicks and more points for physical activities. Furthermore, there was a shift towards a physical network of partners for fitness, nutrition and stress. In a sense, wellness, led by health practitioners, became 'black-boxed'. The self-service technology had lost a key ally and had to alter its conception as a key driver in the Wellness program to the new head's interests and began to play more of a supporting role.

As a result, there was a definite shift in how the online nutrition tool fitted into the bigger picture of the Wellness programs. For one, there was this 'figuring out' that the tool could not operate as a 'real-world' dietitian. There was still a need for a dietitian, even though a tool was available on the web. There was a prevailing view that the self-service channel was only one of many ways of communicating with people. As a result, even the contact with the e-dietitian service for South African members was removed. Today the Wellness program has a network of dieticians, and members seeking guidance in this area are referred to those dieticians. They are in place to service wellness members, and they have been trained on an assessment which HIC clinical staff and panel members devised to ensure that wellness members are getting the latest science in dietary care in a professional and consistent format.

Even with the online stress centre, there was the realisation that there was a need for more personal interaction. The stress-centre team started to work directly with corporate clients through marketing, the brokers, franchise directors, and corporate relationship managers. A stress course was also under way for health partners. Apart from general stress management, part

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of the course explained how the stress centre worked. By working personally with these groups and individuals, it was envisaged that this would encourage the use of the online stress centre.

Meanwhile, internally senior management used the SST as an ally to convince joint venture (JV) partners of their ‘innovativeness’. The attention of the development team shifted to the international operations and their online requirements. The initial assumption was that the team could just ‘plug and play’ local services into the UK context. However, in many areas, the local inscriptions did not apply to the international initiatives. Some interesting challenges were associated with creating a UK-friendly Nutrition Centre. For instance, it soon emerged that the dietetic products available in the UK market far exceeded what was available in South Africa – for example wheat-free and soy-based products.

... A major nutritional issue in the UK is intolerance or allergy to wheat and there are many more vegans than in South Africa. We had not catered for wheat-free and vegan meal plans on the SA Nutrition Centre and the UK office requested that we design such options to suit their market. This involved the UK dietician supplying us with the names of products available in the UK that could be used as substitutes for wheat and animal protein foods.
(Nutrition expert, interview 46, p 15)

The other issue that came to light was that although South Africans and UK members might share the same physiology, the content and educational articles needed to be checked and modified for the UK market, owing to certain differences in how the UK national dietary guidelines and health systems operate. Furthermore, while the South African dietary guidelines were designed specifically for that nation and its nutritional issues, the UK had its own set of dietary guidelines. The team had to change the content to reflect these cultural practices instead of the South African recommendations. In addition, any reference to contacting a registered dietician in South Africa was updated to reflect the process in the UK, which is completely different, because of the way the National Health Service (NHS) works there.

The design of the UK nutrition site initially had the South African nutrition rules embedded in it. In a sense, the UK system of nutrition was an OPP that was ignored by designers. Various UK actors came together to align with the interests of the UK users, such as UK nutrition standards and guidelines, UK nomenclature, a qualified UK nutritionist, and the UK language and metric system. This narrative demonstrates the tension in developing SST systems between wishing to standardise applications for efficiency and imposing the same applications on local contexts.

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During the ‘dazzle era’ there was this notion that improvements in the redesign of the website would facilitate call reduction and improve user interaction with it. The redesigns always had a front-end focus, although most of the major issues –at least from a systems perspective – appeared to be back-end related or more of a social nature. Somehow the user interface design was reduced to the panacea for transforming service on the Web. One regime of truth suggested that the site should be ‘crisp, clear and transactional’, a notion borrowed from banking sites. There was also a school of thought that the site should distinguish between lifestyle, content and health plan-related issues as separate areas. Redesign projects for some reason were always high-profile, despite being a process of merely ‘changing the skin’ of the website. In other words, for the most part they involved changing the look and feel of the site, the colour, the layout, the navigation, the imagery, the branding and so on. Given the high profile of these projects, redesign episodes were not without their politics. In the most recent redesign, one of the senior team members describes how he positioned himself as the spokesperson for the process.

I made an appointment with X (Group CIO) and I went to his office and said look, I can change your Website around. And he asked me a few questions and ... he said go for it. (Graphics, interview 26, p 2)

However, marketing’s strict control over their ‘super brand’ meant that the design of the site was somewhat constrained. For instance, certain images were too large for the landing page, and there often had to be a negotiation process or a compromise reached to do what was in the interest of both parties. Furthermore, there was often this criticism that marketing services did not write for the online channel, but simply applied traditional brochure-ware to the online environment:

You know, you just get the most ridiculous concepts. It is like, marketing will produce this beautiful brochure, and it is fantastic when it is sitting on your coffee table. And they would say, stick it on the Web and now when you have to interpret that onto the Web, you know, the concept of bolding text so that users could skip read was unknown. As I say, I am always pushing for that. (Graphics, interview 26, p 11)

Even within the teams, the software developers and business analysts were not immune from conflict during these periods. A business analyst discusses some of the challenges when negotiating with a developer:

For me sometimes the challenge is if you are dealing with a difficult developer sometimes you are just not sure if the person is bullshitting you, because obviously they have better technical knowledge than you do, they are doing the actual work, So if you say to them listen

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I think this is a better way of doing it from a user perspective and they say no well that will take forever to do or we can't do it, it is difficult to challenge that because you don't necessarily know if they are telling the truth or not. You need to either try to find developers or almost try and code that kind of culture where the developer themselves have a different perspective, they don't only look at it from their perspective, they look at it from a members perspective as well, and you find some developers are better than at it than others, there are some developers that I have worked with, and this is after its (referring to the specification) gone to Marketing, Graphics, even myself who really theoretically should have the user more in mind than the developer does. I see some developers when they get the actual spec say gee if I was a member it would never work for me. And I think that's really great feedback, were some developers whatever you give them that's what they will develop which I think is a really old-fashioned way of thinking and it does not add any value ... (Business analyst, interview 14, pp 3–4)

While redesigns eventually mobilised the organisation into action, users were often varied in their responses to the outcome of the user interface changes. One view was that the user interface change was a hindrance, while the other was more supportive.

This website must be one of the slowest in the World. Honestly, it is far quicker to do a booking via telephone. I realise that you have a lot of users, but surely there must be a way to encourage people to utilise the otherwise very informative site. (Online feedback 2, July 2005, line 17)

It is a bit awkward to have the details windows popping up half off the screen. Can't you have them smaller with their scroll bars all visible when they pop up and then one can resize if necessary. Also the details pages do not print very well. In landscape, some details are just chopped off, and in portrait the pagebreak is very messy. (Online feedback 2, July 2005, line 97)

The site is very user friendly and easily navigatable! Well done!! (Online Feedback 2, July 2005, line 152)

Despite several attempts – which appeared to be trial and error, as opposed to identifying a concrete solution – the redesigns were not addressing tangible issues like the speed of the website. However, apart from the broader concerns of bandwidth, implicated in the speed issue were many other technical actors, as this excerpt describes:

... we are now using the XML HTTP request mechanism for data retrieval. With that you can put your XML with your XSL to transform it or you could put your XML pages or segments of your XML page request, like if you doing a search you got a whole lot of lists and if you want to change the order of your lists instead of changing request to the server to send page back with all the navigation, you send the request to the server to bring back the results in the new order. That's something that might just speed it up, and then there are other problems you know there is the problem with the proxies, you know we are even more reliant on the proxies now, and reliant on java scripts ... they are trying different technologies, even moving to different hosting companies. (Graphics, interview 25, p 16)

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However, the designers continued to reinforce the claim that focusing on the user interface had led to improvements in the user's experience. The designers in effect were systematically prioritising technical issues over the social, although the Web interaction touches on both the social and technical. XML, XSL, Java scripts, jpeg, left nav, right nav, and landing page dominated discussions on how to arrive at the best user interface design. Research was used merely as a form of rhetoric to lend credibility to the redesign process.

And with the latest redesign, there was a fair amount of research that went into that. A lot of ideas went into it. Usability studies, a lot of it went into that. The results of the customer survey were fairly positive in terms of usability. So there has been a, how should I say, a marked improvement in, in the usability of the site since the last redesign, which was backed-up by fairly solid research ... external companies, clients, listening to calls, coming up with ideas. So there was a lot of research. (Systems architect, interview 43, p 14)

It was simply easier to focus on the technical than to negotiate with the findings of the research. After all, the research, including focus groups findings, meant facing up to the conundrum of having to develop a user interface that met the varied needs and opinions of a mass of users. But alas, the users were a mass and were therefore rendered invisible, at least in the re-design of the user interface.

To counter this mass, the senior management called for the use of ATG's personalisation and scenario server. Within this climate of techno-centrism, even those team members who were proponents of customer relationship management (CRM) had a bias towards the use of technology and readily accepted technology to be the panacea – the human element and the social context appeared to be afterthoughts or not dealt with in depth. The use of scenario server and personalisation server were touted as another 'regime of truth', a silver bullet. In other words, by focusing on the users and their scenarios or events, H-World would be able to engage with its mass of users at a more 'personal' level by delivering 'the right message to the right customer at the right time'. With the latest 'regime of truth' of customising the SST for segmented audiences, the designers assumed that users would be more willing to use it. After all, the SST would be tailored to their precise needs. For instance, an event like a claim submission would be used as a trigger to personalise the user-SST interaction. However, the developers on the project were very cynical about the potential of Dynamo.

He is driving an ATG technology, technology you couldn't even purchase in South Africa, right? Let alone have any support. He went in there, convinced business of the idea and they have been running it ever since. And I believe that H-World has been on the back foot ever since, because they have been trying to fix and catch up with deadlines since they started six

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years ago. (Graphics, interview 54, p 9)

The team had established that Dynamo was more suited to the pure online business environment, and not the bricks and mortar environment of UAG. Data revealing scenarios and events were stored in UAG's back-end systems, and Dynamo in their opinion was not architected to integrate easily with back-end systems. However, there were rumours that certain members of senior management were trying to justify 'the spend' on Dynamo, in an environment that was becoming ever more cost conscious. Furthermore, there was growing talk that the systems area was looking at standardising on application server platforms, either to Weblogic or Websphere, and that the fate of Dynamo was therefore tenuous.

Redesigns were often followed with elaborate campaigns to attract more users. In the short term, many more users were attracted to the 'new and improved' website. Nevertheless, the overall effects were negligible externally as, despite these major user interface changes, the patterns of use remained the same. More importantly, the redesigns which focused on the 'fluffy stuff'³, like navigation and ease of use, did not appear to change this pattern of discontinuance among users. The redesign had also failed to deliver inscriptions that would enrol a critical mass of users to the same magnitude as that of the call centre. Neither would the redesigns create strong inscriptions of the Web as a channel to support the Wellness program. While it was assumed that users would take these notions that were concealed in the SST for granted, it was 'mobilised', but only for a minority of users.

More recently, another assumption was that the website would be more successful as a direct sales channel in the UK. After all, the general discourse among the proponents, mainly among senior management, was that while South Africa was still 'lagging behind' the UK, online interaction in general, as the primary means of communicating, was more widely accepted in the UK. However, what emerged over time was that significantly more and more applications were being submitted via the brokers, rather than customers via the website.

... I think, a person sort of, does not want to join a health care plan on the Website. You want to go and you want to see a physical person, like a broker. And say, 'but I like this, it sounds good, I like this plan, give me some affirmation for what I have come to', you know... And I think, also, yes, that feeling of, you know, I am going to, like now, give away my credit card

³ 'Fluffy stuff' was a cynical term used by the development team to describe those aspects on the website that had aesthetic appeal, but did not necessarily create value for the user, typically 'stuff' that was proposed by senior management.

details, you know, sign up for something that I sort of need to have my thoughts affirmed by a person, either an independent broker, or someone that, you know, is involved in the healthcare industry. (Business analyst, interview 47, pp 6–7)

The novelty of this virtual practice, even in the UK, and despite the solid reputation of the UK JV partner, was not convincing enough to get many users to use their credit card details online. Clearly the use of the Internet to purchase health insurance was at odds with societal concerns such as privacy and security. This reluctance to purchase ‘direct’ may have also been exacerbated by the high value and complexity of the product. In structuration terms, the inability of novel practices to gain momentum, points to the importance of routinisation in sustaining trust in social practices. When the realisation that ‘selling direct’ through some of the international initiatives was proving quite challenging, a new translation emerged.

The latest discourse argued that the Web does not work well for the highly differentiated products supplied by HIC. What emerged was that in the sales of highly differentiated products, people need more personal interaction at sales time. There was the realisation that ultimately brokers had been more effective than the online channel. There was also a prevailing view that the majority of users had problematised the SST as research tool. As such, the role of the Web in the sales process was not totally dismissed. Instead it underwent another smart retranslation as a ‘sales research tool’.

... we have seen strong evidence to support the notion that the online channel used in conjunction with the interactive channels probably results in the highest levels of success. So, even if you are buying very high-end products, and very complex products, you will use the online channel to do research and understand the products, and do the evaluations even though you might not execute in that channel. (CIO Health systems, interview 36, pp 3–4)

In other words, the SST was rearticulated as playing an effective role in supporting the sales process.

Meanwhile, the advancement in the use of technologies to support SOA rescripted the initial OPP of e-commerce. Since SOA would unify the systems departments by structuring larger applications into smaller services modules, two new OPPs emerged. It was an opportune time because senior management were looking at ‘streamlining’ the IT organisation in order to improve performance. In the past there had been a lot of duplication of effort, lack of alignment and difficulty with priority setting. Furthermore, maintenance costs continued to grow rapidly. This comment captures the point that performance of the IT team was under scrutiny:

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I mean, from the business side now, the guys would really question, you know, 400 software developers. What do guys actually deliver? Why don't we often get to do all the stuff that we commit to upfront? (Business analyst, interview 002, p 9)

One OPP suggested that a single team of developers and business analysts could focus on the delivery of specific functionality. Proponents of this angle used the wellness systems as a model that emerged where systems staff from all the areas worked as a more cohesive unit, compared with the fractured manner in which the other systems area operated.

An opposing OPP proposed that a distinction should be made between front-end development and back-end development. As such, technology allies were enrolled to control 'back-end and front-end' systems. By positioning itself as the front-end expert, the new head of H-World attempted to make H-World an indispensable actor in this regard:

I strongly feel that that would be a mistake for H-World, because at the moment we bring all the product elements together to service that community ... for getting into the mind of that consumer and what do they need. Whereas the other areas (referring to other systems areas) are silos. So, you have health systems and then within health systems you have got claims and you have got MMD. You have all those other components. And I think that that is why for the internal systems the user interface is not geared around what is the interaction that is taking place, and how do I need to present things. It is rather about, here is the product stuff and then make it work in terms of your interaction. And so I think that there is a significant value-add in terms of having your focus communal as opposed to product. But it is a hot debate at the moment ... (New H-World head, interview 30, p 9)

This view was endorsed by the previous head of H-World, who was now leading the international operations.

One of the things that H-World does particularly well, which maybe more an art than a science is the softer elements of the channel. How to position, how to message, how to design the user interfaces. Now all of those are steeped in something that is not well understood by the traditional environment. And I think maybe as a natural consequence of that there is almost a resistance or true prejudice against them for this and they understand and deduce that either it is not necessary, or potentially there is a threat associated with it. Or they just question it almost out of sheer confusion. I think that, that probably does play out to an extent. But I think it we have also seen inside the organisation that there is a stronger need to get more user interfaces. Therein lies a very large opportunity to leverage of the huge intellectual capital that has been formed. (CIO Health Systems, interview 36, pp 6–7)

The proponents of the 'front-end focus' started to define roles for other actors in the network so that they would also align with the problem definition and solution. In this vision, a customer interaction systems (CIS) department would be formed to develop front-end applications for

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UAG. It would be responsible for usability of all the systems and the customer experience, be they internal or external customers. In other words, the call centres, who were the biggest users of the internal systems, would also be interested in this kind of focus. The head of the call-centre channel was enrolled as a key ally in this process:

What actually happened was that business, X, and the rest of the call centre people really said, ‘look, but, look what is happening on H-World. You log on and without clicking, you are actually seeing the entire profile. You see the guy’s health plans, his life policy, Wellness, all of that, Cards, all are on-stream’, you know. ‘Why can’t we have the same kind of stuff in Paradigm [the call centre application]’? (Systems architect, interview 43, p 14)

During this time the legitimacy of ‘back-end developers’ doing front-end work was challenged. For the proponents of the customer interaction focus, these developers were not regarded as being effective at developing front-end tools.

I think you need to be able to develop not with a focus on your functionality, but on the focus of how the functions would be used. And I think the typical systems developer, doesn’t give a, two hoots about how to use it, but for the fact that the component works. (Community head, interview 26, p 11).

While leaders from most of the systems areas were aligned with this view, this articulated vision in which actors such as the architects, developers and business analysts would play specific roles in front-end development did not materialise. It appears that the best interests of the development team were not aligned with the interests of the managers. The following excerpt describes why some of these key allies could not be enrolled:

The BAs don’t know what the most intuitive way to structure a page is cos’ they never had to deal with that. That is what the graphics team did ... They all left except for one. Off the Wellness team all the BAs left. Because of this change they chose to leave. They were, it’s quite funny (laughter). They were given a choice and then they all wanted to leave but then the choice was retracted. There was a big fuss and eventually they left .. For them it’s a bullshit job, it’s something that they are not capable of doing. They don’t know that, you know the yellow button is better than the blue button, because the heuristics model say so. You know, I mean they do not want to do shit like that. To them they don’t want to that. They want to do business analysis, so they left ... I don’t know what the hell’s going on. They are nine teams excluding the Usability team so I don’t know what they hells going on there. We are short six developers and seven BAs. So out of all this movement we gained departments which is amazing and we are short a shit load of people. So I don’t know, I actually don’t know what CIS does ... (Systems architect, interview 053, p 6)

Although the restructure was communicated to the team by the Group CIO, many of those who were involved in it believed that insufficient change management interventions had been applied in the process.

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I mean, all the affected systems areas were called together in the auditorium and he [Group CIO] did like a 20 minute presentation, highlighting, you know, how this model would benefit the end user of the system. And sold it well. I mean, there was good reasoning. But that was almost like an announcement and then you are expected to change. So, that type of change is viewed as like a, you know, like something has gone horribly wrong, we are turning this thing on its head, and we are going to move forward. That is how I would see for someone understanding it. But if you say there's a good reason for change, we have not like absolutely failed our systems' recipients. So, like the business have, you know, we delivered on our functions, we delivered some good stuff, yes, there he has been some poor delivery, but I think it happens even in the best of organisations. But, if you announce a change, and actually say, we understand that with this change will come certain questioning, so we will need some workshops, and adopt it in that fashion, then people might have been more ready for it. And they might have said, oh, okay, we see that we are undergoing a process of change, not an overnight change. (Program manager, interview 042, p13)

Some were surprised that human resources (HR) had been excluded from this process. IT personnel, mainly architects, developers and business analysts from all areas, appeared to be unhappy with the change process. Even departmental managers were not effectively enrolled in the restructure, and expressed mixed feelings about the changes. One of the departmental managers summed up the reactions of her peers:

... it's about losing power, it's about losing resources and feeling that your power base is dwindling. A lot of individuals measure the power base by the number of people they have reporting to them, not necessarily by what they are doing to deliver. And as a result we have architects whose teams have been slashed by half, I mean my team has been slashed by half, we've had other areas where the teams have been slashed by 70%, we've had gains and losses but the overall results has been loss of resources, but it should not be seen as loss of resources because you may be losing resources but you are also losing the responsibility to deliver on what those resources used to deliver, so you now have the opportunity to work at a different level. I don't think that even the senior people here have bought into that concept. And until they do how can you communicate a positive attitude. (Community head, interview 044, pp 7-8)

Meanwhile, the JVs also became actors in this 'corporatisation' process. After all, notions of formal testing had always been part of the organisational discourse. However, this OPP was mobilised only after the COO's visit to the international JV partner's IT department. In a sense, the JV became the spokesperson for formal testing approaches. To keep faith with the JV partners, a more disciplined approach to testing was being enforced.

Most of the teams were quite negative because the formal testing approach impacted on the number of go-live cycles. Management had decided that the scheduled go-live day would take place every second Friday. This meant that if there were technical problems, the staff would have to come in over the weekend to resolve them. It also meant that the team would have to spend a

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little bit of extra time by coming in early on Friday mornings, and if there were issues, probably stay late on Friday nights. While this may have been creating a more stable environment for the organisation and more synergy among the development teams from the different systems areas, it was interfering with their personal lives. Furthermore, the project teams had to plan more carefully: if the cycle was missed, the team would effectively have to wait two weeks for the next go-live cycle. Furthermore, the BAs had to play a large role in coordinating the testing activities, which included submitting their test scripts to the new testing team.

New actors by way of a change in leadership also adversely impacted the change process. This is expressed in the comment from of the older team members:

... I get the impression X to me has come from a banking environment. That she is trying to out of habit trying to implement some of those style in H-World, and especially for the people that have been here for a very long time, nothing really works you know because we are used to a completely different way of things working. It's a lot colder, she not as relaxed as Y was, She seems as lot more formal then Y was. Y was a much more informal person You still knew he was in charge but it wasn't like ... X is almost unapproachable. If you pass her in the passage you need to really get in her face to make her realize that you are trying to say hello to her you know. Most of the time you do not bother saying hello because she will not greet you unless she wants something from you, then she would come talk to you. She's more in with the community heads then she is with people a little bit lower down the scale, you know so just my impression. I am personally not happy. I used to love H-World, I used to love coming to work! Now I hate coming to work! I hate it! (Graphics developer, interview 030, p 10)

Rather than mere gripes with leadership, this excerpt demonstrates the strength of the self-image of the more informal dotcom start-up environment that had remained in some of the minds of the experienced H-World team members. The attempts to formalise or professionalise existing work practices and their associated shift in social values created a huge amount of controversy. The view of management towards this kind of reaction by staff is captured in the following statement:

That is a function of UAG being a different organisation. That's the function of UAG having to account for close to 1.8 million lives. You can't do things, the analogy, you can't have kids running around a nuclear reactor. And then if it's not bureaucratic then it tends to kill people. And likewise, if you do stupid things and don't have the appropriate discipline, and yes they can be interpreted as a bureaucracy. So in the client face, the needs have shifted, the needs have shifted to stability and robustness and as a result the process and the ways of doing things had to shift. (CIO Health Systems, interview 36, pp 1–2).

The excerpt demonstrates a more intense shift from self-regulating towards auditing, monitoring and regulating the development teams in order to increase the quality of the work. Clearly, the heads of the organisation were emphasising a higher degree of preciseness in the way tasks were being conducted. The rationale for increasing discipline was tied to political and economic

interests. However, the key to translating the actors in the workplace to be supportive is to align with their interests. Certain members of the development team were in despair, as they felt their individuality being stripped away from them. As a result of this misalignment, many team members resented this new approach. And because management had not aligned with the interests of these actors, there was a massive exodus of both the traditional systems and eHIC staff. Given the scarcity of IT skills in South Africa, staff were able to make this move without too much difficulty. The restructure of the systems areas into back-end and front-end systems had proved dysfunctional. In the end, the objectives were not agreed upon, and became the subject of considerable disagreement and debate. By choosing to restructure, management had emphasised resource, not social elements (such as the quality of the work experience and the impact on staff psyche). In becoming a ‘corporate’, it was the quality that the subjects offered the business that was important, and not the quality of their lives that was critical. Fun at work was being defined in new ways by the leadership:

No, I mean, I do not see that [referring to fun and bureaucracy] as being mutually exclusive. If fun is defined by being flippant about how you manage a very big, complex environment, then I would say yes, fun is going to fall by the wayside. If fun is defined as achieving a major milestone and you are continually pushing the boundaries, doing new stuff, doing new and interesting things, meeting new requirements. I don't see, I don't see any trade-off. (CIO Health Systems, interview 36, pp 1-2).

Framing

The initial organisational metaphor guiding the development of the self-service channel was that of a ‘substitute call-centre agent’. Given the early furore about the Internet, it was conceived that H-World would replace the call-centre consultant with a broad population of the organisation’s members. When contradictory social facts emerged, this metaphor was retranslated to ‘dazzle the customer’, where the technology was used for more hedonistic purposes. Internally the drive was towards novel ways of interacting with the users to promote their wellbeing. In its most recent translation the SST was framed as a complementary channel.

A seemingly endless improvisation with its role characterises SST applications. It appears that no particular role is permanent, specifically in an environment of alternative channels, so ongoing negotiations characterise SSTs better than the black-box metaphor. Although it sounds contradictory, the most recent translation as a complementary channel is likely to remain an

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immutable mobile. After all, with this broader conception, the interests of other actors could fall in with the SSTs schemes without too much controversy.

This ‘complementary’ translation has shown itself to be emergent and not planned. There was no doubt that the initial metaphor as a ‘substitute call-centre consultant’, and thus reducing administrative costs, was the planned perspective, but many actors did not come together to make this possible. While excerpts like the one below point to the human actors that must coalesce to make the SST ‘work’, perhaps in this instance non-human actors were more crucial:

You will always have more naysayers and prophets of doom than supporters. Identify the key stakeholders early and engage them. This does not mean become their friends but stay close to them understand their fears, their drivers and their influence and how they can possibly use this to interfere with your plans ... (Community head, interview 30, p 9)

Technical issues such as database structures, communication protocols, software development platforms, poor ICT infrastructure, Web browsers, and the telephone can establish constraints that are not easy to interest and mobilise. As a result, the SST’s role was constantly mutable. Maybe this comment more aptly summarises the H-World story:

I never did the math, but I always wondered whether we had saved as much as we had cost. We had a big call centre by the end of the day. A very big development team and expensive! A lot of hardware and software. And then a bunch of specialist content providers, nutritionists, copywriters, etc. And I still remember something AKC said in a presentation ‘People breed people’! – all of these employees needed support staff – think IT help desk, HR consultants, building services, etc. I think we gave our users more than what they wanted and I believe that the incremental benefits over their expectations did not justify much of the expenses to provide it. (Senior business analyst, interview 51, p 10)

On the other hand, simple evaluations of cost-benefits may not appositely describe the ‘effects’ of the SST either. UAG had batch processes, disparate, monolithic systems, poor quality of data, and a corresponding disparate view of the customer. H-World and the traditional systems environment were at odds with each other. After several translations, H-World has played a significant role in linking the systems environment together.

Today, the systems are real-time, component-based, integrated, reusable, supporting multiple channels and business processes. They have moved from a policy approach to an entity model to support a single view of the customer. The organisation now has a framework for globalisation, including support of international operations and quality user interface development skills. Internally, the SSTs interests have been translated into a larger heterogeneous actor-network,

including technology direction, architectural perspectives, development approach and methodologies and career paths. In its latest inscription, H-World has become a spokesperson for the JVs, for the organisation's innovativeness and for consumer-driven healthcare. Via inscription, discourse about customer empowerment became 'frozen' in the SST. Given these 'effects' of the SST, how does one use simple cost-benefit evaluation notions to then trace the value of the SST?

While it certainly acquires the features of a black-box for creating and strengthening other network associations, H-World does not appear to be a convincing inscription for the majority of its users who are placed outside the organisation. Using ANT, I have shown how the interpretive flexibility of the SST is largely attributable to the distance between designers and users. Many external users used the technology differently from what was inscribed into it. Unlike information systems in the work context, where designers are close to the users and can be prescriptive, and therefore the network into which the intended user behaviour is inscribed is stronger, external users in the context of multiple channels have much more discretion in their use. In a sense, there is a cannibalisation of channels. In other words, despite efforts of designers to customise the channels for segmented audiences, the trend was clearly towards users customising the use of channels to suit their own personal tastes. In a multi-channel context, designers are at the mercy of what individual users choose to do and how they elect to respond. Ironically, it seems that the essence of being an empowered customer is not in merely using the Web, but in having the ability to choose from among multiple channels.

Numerous transformations were applied to the call centre, such as the employment of quality staff, the streamlining and continuous improvements to the call-centre systems, thus developing the telephone as the dominant device in the member's service interactions. This does not preclude the influence of the current turmoil regarding broadband services in South Africa and how restrictions by employers against using SST services during work hours excluded many potential users. Despite attempts to interest potential users with incentives and revisions of the website's design, ANT demonstrates how alternative channels, user preferences for traditional face-to-face encounters, poor ICT infrastructure, and lack of accessibility to the Internet accounted for interpretative flexibility.

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Even though users may not be receptive to the SST as intended by the designers, internal actor-networks and the translations among consumer-driven healthcare insurers and the larger community's organising vision have made SST actor-networks durable. The policy of implementing the SST did not rely solely on rational decision-making principles like use and call reductions. Instead, concerns, ideologies, and prejudices were used in negotiating the implementation of the SST, and 'new' facts were subsequently enrolled to support what emerged. While by design the majority of users were excluded in the SST definition, a number of internal human and non-human elements were brought onboard.

While conventional theories such as CRM and diffusion suggest that the success of a SST depends on the ability to retain a critical mass of users, ANT demonstrates how, by enrolling other key stakeholder groups with diverse interests to align their interests with the technology, relatively stable technological arrangements can be created, despite relatively poor use. Notions of continual use as a predictor of IS success are dismissed in an ANT analysis. Instead, an SST is deemed successful if networks of aligned interests are created through the enrolment of a sufficient body of allies, and the translation of their interests so that they are willing to participate in particular ways of thinking and acting which maintain the network (Walsham, 1993).

These allies do not necessarily need to be users of the system. After all, there is the politics pursued by health insurance firms and their allies in their encounter with governments, employers, intermediaries, regulators, JV partners and existing and potential members to drive the 'consumer-driven healthcare movement'. The inscribed implication is that the individual should be responsible for his or her own healthcare. After all, the Internet has ability to empower the individual, or so the story goes. A great deal of rhetoric surrounds SSTs as being able to empower individuals who are patrons of consumer-driven healthcare products.

By and large, it appears that decisions to use or not to use the technology have little to do with the supposedly innate characteristics of the SST, and more with specific uses of this technology that relate to users' social interactions and context (Tatnall and Lepa, 2003). For instance, some users used the technology to track their claims; others used it to earn loyalty points; and others were only interested in using the online wellness tools. Still others use it to prepare for their discussions on financially related queries with the call-centre consultant. Others again used it in

an act of betrayal to earn easy loyalty points, and take advantage of discounts associated with higher statuses on the Wellness program. In other words, in using SSTs and in the context of alternative channels, user preference is not static, but varies.

Furthermore, ANT reveals the weak inscriptions of online wellness tools in supporting preventative healthcare initiatives. The role of the consumer and the Web are sometimes taken too far. Consumers and the Web cannot replace wellness practitioners. But despite this, ANT has demonstrated how SSTs have become an institutional matter of fact.

The popular narrative concerning SSTs in consumer-driven healthcare has certain merits, but is contestable as a device that empowers users. The premise by healthcare insurers is that the only way to contain costs is to involve consumers in the purchase decision through devices such as the medical savings account, Wellness programs and SSTs. The story that unfolded in this particular case study showed a number of unintended outcomes as a result of these devices. However, healthcare insurers may continue to translate the appropriateness of SSTs as an ‘empowerment device’ into carefully phrased restatements of fact in order to support their broader political and financial agenda.

8.2 Conclusion on ANT perspectives

The use of ANT concepts as analytical devices lends itself to tracing actors that are crucial in understanding innovative IS implementations. By using ANT concepts such as inscription, translation and framing in this way, I was able to tease out important aspects relevant to the implementation process. These and other related concepts from ANT provided an insightful perspective to interpret processes of SST implementation. The analysis above has demonstrated the powerful role which human and non-human elements of healthcare finance and related social-technical systems can play within a long and heterogeneous network. The chapter provided a detailed description of the way in which hardware, software and system configurations interacted with the organisation’s social, economic and cultural context in implementing the SST.

By transcending the undue importance bestowed upon human agency, ANT provides a technique for grasping the ways in which social establishments work. At the outset, a few actors gathered

and mobilised the support of influential actors and decision makers to accomplish their vision of transforming the organisation via the use of the SST. Over time ANT demonstrated how the implementation of an Internet-based self-service technology emerged from the many unplanned negotiations and mediations with human and non-human actors, and not from some perfectly executed grand plan. In this way ANT provides an understanding of the limitations and opportunities of SSTs in our increasingly socio-technically rich organisational practice. For instance, this study has illustrated the manner in which organisational imperatives, the Internet and related technologies, and healthcare and various other knowledge workers can come together in sometimes arbitrary ways and produce convincing facts about concepts such as consumer-driven healthcare, and accordingly persuasive inscriptions about the new channel. Different conceptions of the SST emerged as more ‘facts’ about the SST were produced over time and actors reflexively altered their stance. In this way ANT was very effective at teasing out those socio-technical relations that must be explicated in order to come to terms with the role of self-service technology systems, together with human actors, in constituting contemporary healthcare insurance organisations.

Importantly, the SST is never complete or final. That is to say, if the SST would remain fixed and stable and uncontested, it would not be translated and would likely die (Monteiro, 1999). In this case, the SST was consistently reinvented by both designers and users. Instead of reducing ourselves to notions of success and failure, what we can say is that the existence of the SST already makes a difference in the healthcare insurance context – in planned, but more so in many unplanned and emergent ways. For the SST to carry on its march, further translations are needed. One could speculate that as social influences such as accessibility become aligned with the interests of the SST, the SST may find it easier to enrol future actors. However, accessibility alone is insufficient to mobilise users. Therefore what these translations will be, only time will reveal. One thing is certain: the Internet and rhetoric of customer empowerment alone will not resolve the healthcare problem. As Porter and Teisberg (2006:3) eloquently (or maybe idealistically) put it:

There is no one villain here. Neither the problem nor the solution will be found in any single aspect of the system or in any single actor. Indeed, the whole approach of attempting to redress competing interests (in healthcare) is doomed from the start. The only real solution is to unite all participants in a common purpose.

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In the next chapter I will provide a synthesis of the ANT and structuration findings, and use this synthesis to build a more general theory of SST and IS implementation which, it is hoped, will enhance the understanding of IT interactions within social-organisational settings.