



Sanlam: The IT journey from 1990 to 2014



Preface

To know where you're going, you need to know where you're coming from.

I believe this statement to be true, and am therefore proud to endorse this book, *Sanlam: The IT Journey from 1990 to 2014* which gives an overview of where IT in Sanlam has come from. This book shows how we are ready to tackle change and are willing to adapt to change. With change comes the opportunity for innovation, and our history shows that IT is a valuable enabler of change.

Inherent to our industry, more change will come our way. I am, however, convinced that we will accept it with the same gusto we have shown over almost 25 years thus far.

Thank you to Jaco du Plessis, managing editor and coordinator of this book, for his unwavering dedication to and belief in this publication. I am sure it will be an insightful read for all of us.

Bernard Manyatshe
SPF: IT CIO

September 2014

As Chief Executive of Sanlam Personal Finance, I've been fortunate to have a 'bird's eye view' of the important contribution that SPF IT has made to our business over the years.

Our IT division has proven their mettle through challenging times in the market place, the Y2K project, increasing regulation of the financial services industry, organisational changes, new ways of conducting business, and large scale technology renewal. The result is that SPF IT has, indeed, become a trusted partner in the SPF fold.

This book is a testament to the vital role that Information Technology plays in our organisation and I am confident that this role will become increasingly important in both Sanlam and the greater business world.

Lizé Lambrechts
Chief Executive: Sanlam Personal Finance

September 2014

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Introduction

The objective of this book is to look back at the vast development in IT systems, software, hardware and general technological advancement within Sanlam over the last quarter of a century. By highlighting many initiatives, technological changes and implementations that have occurred in our IT environment during this period, it is evident that IT has played a significant role in making Sanlam a leading financial services company in South Africa.

The idea is not to provide a comprehensive account of the history of IT within Sanlam, but rather to highlight the most significant events that occurred during the time frame 1990 to 2014, with limited reference to earlier events to provide context.

Readers will gain insight into how the IT division operated in the early 1990s and also how it developed into the division that is currently known as SPF IT. Sanlam IT Infrastructure Shared Services (ITISS) is covered to a certain extent, as the outsourcing of Sanlam's IT infrastructure services was a significant event following the demutualisation of the company in 1998. It was unfortunately not possible to include smaller business units and business units not serviced by SPF IT in this book.

As Sanlam rapidly approaches its 100th birthday in 2018, there are numerous activities under way to ensure that the organisation's general history is formally documented. This book is a concomitant initiative launched in 2011 by Jaco du Plessis and a few colleagues from SPF: IT who have been in the company's employment since the 1980s. The realisation that Sanlam's IT history - or at least a part thereof - had to be captured before the next generation retired, meant innovative ways had to be found to gather the content for this book. One of the original ideas was to interview as many retirees as possible to capture their memories. However, due to logistical complexities and the fact that most of the information had to be obtained from existing staff anyway, the input from retired or ex-Sanlammers ended up being minimal.

A key challenge was to obtain accurate and factual data - especially about the earlier years when documentation was a rarity in IT and personal computers had not yet transformed the business world. Sanlam's Archive assisted us tremendously in obtaining information pertaining to the section about the various organisational structures and the names of senior managers since 1990. Bear in mind that most of the content was written over a period of time - from 2012 to 2014 after a range of personal interviews and numerous follow-ups to ensure that the information was as accurate as possible. The end result is an overview of a number of significant events that dominated the IT landscape over the past 25 years. Understandably, this overview does not, and could not, include every event that took place over this period of time.

We sincerely hope that by reading this book, you will get a glimpse of the contribution IT has made to the proud history of Sanlam.



IT organisational structure: 1990 - 2014

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This introductory section of the book on IT's history at Sanlam focuses on the impact the Sanlam business strategy has had, and continues to have, on IT structural developments and strategy within the company. Roles, functions and activities have changed over the years, but all with the aim of providing cost-efficient and professional services to the business. Staff involvement plays an essential role in the operations of IT – from the staff composition to community involvement to research facilities and communication.



IT organisational structures and strategies

Structure follows strategy, and in Sanlam's IT history it's no different. Different organisational structures and restructuring in the Sanlam Group led to various IT organisational models over the years. In the early years of computing, Sanlam followed a centralised model for most of its operations. Data Systems, as IT was originally known, was responsible for infrastructure services/computer facilities (for example the mainframe, printing and the network), as well as application development.

The book *Sanlam in die rekenaareeu 1958 – 1993* by Carel Smit, one of the first heads of IT, covers the early years of Sanlam's IT history and alludes to the individuals who played a significant role in the establishment and expansion of Sanlam's computing capabilities until his retirement. The initial IT management structures, as well as senior management's close involvement with IT, are also described in this book. In the years that followed, IT's name changed to the Electronic Data Processing (EDP) Sector, Business Systems (BS) and Business Technologies (BT), and eventually to Information Technology (IT).

From 1983 IT and HR reported to Johann Söhnge, senior general manager, who reported to Sanlam's top management. During this period, Carel Smit was the assistant general manager responsible for System Development and Computer Facilities. Japie Cloete was appointed in this position after Carel Smit's retirement in 1989. A significant moment in our IT history was the day when Japie Cloete was appointed as Information Systems' first general manager in 1991, as IT was previously seen as just a support function.

This appointment was a clear indication that IT was recognised as an important role player in the execution of Sanlam's business strategy. Gerhard Kriek reported to Japie Cloete as senior manager responsible for Computer Facilities. He was appointed as assistant general manager: Computer Facilities in 1991 and was promoted to general manager: Computer Facilities during 1992. (The title of senior general manager became obsolete among Sanlam's general management when Johann Söhnge retired.)

This section examines the decentralisation of IT activities, with a specific focus on the resulting organisational structures and strategies in Sanlam Life – Sanlam Personal Finance (SPF) and Sanlam Employee Benefits (SEB). Group IT and ITISS are covered briefly because of their strong relationships with SPF.

Decentralising IT

When Marinus Daling was appointed as Sanlam's managing director in 1997, he announced significant changes in the organisational model that paved the way for more autonomous business units, each being accountable for its own bottom line.



As a consequence, the IT development function became decentralised, as each of the business clusters was now responsible for its own IT operations. Group IT was constituted under Hannes van Rensburg's leadership to co-ordinate IT activities across the Group.

Focus on SPF and SEB

Japie Cloete and Gerhard Kriek retired in 1995. The first general manager of Business Systems in the newly constituted Sanlam Life was Leon Venter. Leon was appointed as a trainee programmer in 1971 and returned more than 20 years later after a career in the business, where he held the positions of assistant general manager: Broker Services Southern Transvaal and of regional general manager in what was then Natal. Leon was responsible for decentralising IT to the different business sectors and for initiating outsourcing of computer facilities to external contractors. The wave of decentralised decision-making within business units was visible in not only operational matters relating to the businesses themselves, but also to their IT capabilities. Units like Sanmed, Sanlam Investments and Sanlam Personal Portfolios (Glacier) preferred to develop and maintain their own IT systems.

Leon Venter headed up Business Systems until 1998, when he became head of Broker Services. After Leon's departure, Kobus Venter was appointed as the head of IT in SPF, reporting to Hendrik Bester, the CEO of SPF at the time. Hennie de Villiers succeeded Kobus as Finpro1's programme manager. The SPF IT structure was still evolving at the time, which led to the appointment of Leon Watkins as head of IT Development and Kobus Venter's

eventual appointment as head of Enterprise Architecture. Kobus held this position until the end of 1999, when he was appointed head of Group IT. He held this position until May 2003.

Francois Venter was appointed deputy general manager of Information Technology: Sanlam Employee Benefits during 1998.

Heinie Werth was appointed as head: Information Technology for Sanlam Life when SPF and SEB merged once more. Heinie announced restructuring, which resulted in Andy Baxter, previously head of IT Development in SEB, becoming head of the combined IT Development environment, with Francois Venter heading up IT Architecture and Infrastructure. The remainder of Heinie's management team consisted of Marcel Green-Thompson, Hennie de Villiers, Gerry Conchar, Gerhard Oosthuizen and Suné Joubert. Leon Watkins resigned prior to this restructuring. Kobus Möller (who later became Sanlam's financial director) succeeded Heinie during May 2002. At the time, Kobus Möller was the executive director: Client Care and Information Technology.

Hennie de Villiers was given responsibility for IT in Sanlam Life when he was appointed head: Sanlam Life Operations. Andy Baxter, the head of IT Production, Francois Venter, the head of Architecture and Strategy, and Gerrit van Heerde, who was the head of Business Solutions, reported to Hennie. When Andy Baxter resigned, Stephan Erlank acted as head of Production until the position was filled by Andile Swartbooi in 2004.

During this period, Francois Venter's responsibilities also included IT Security.



The IT Transformation (ITT) restructuring in 2007 resulted in this function being moved to SPF IT Strategy and Planning, but it was returned to Francois Venter's portfolio in the process leading up to the establishment of ITISS.

Another restructuring in SPF IT as a result of the ITT project led to the appointment of Bernard Manyatshe as head of SPF IT. Initially Bernard reported to Hennie de Villiers and became a member of SPF's Exco later that year. He appointed Zee Gwebu as head of Architecture and Planning, while Andile Swartbooi retained the responsibility of head of SPF IT Development.

Francois Venter was appointed as head: SPF IT Operations and Sourcing. Following Andile's resignation, Stephan Erlank acted as head of IT Development until Greg Groenmeyer's appointment in November 2008. Since ITISS's establishment, Francois Venter has reported directly to Lizé Lambrechts, CEO of SPF.

The ITT project also introduced the role of the IT executive, to serve the business's interests. The IT executive's mandate included:

- the introduction of IT innovation to the business;
- participating in the definition of the business units' IT strategy to ensure alignment between business and IT strategies, co-ordinating the effort of providing estimates of IT components for business cases;
- the overall accountability for delivery of IT components;
- the definition and optimisation of IT service offerings;

- the management of IT service delivery;
- overseeing IT accounts and budgets, empowering business units to better control IT spend; and
- ensuring that business units adhere to IT governance.

The first IT executives to be appointed were Barry Leo, Thomas Meisinger and Denise Sasman. Denise was succeeded by Florence Ramabulane. Tondani Makhuvha and Yolisa Skwintshi were also appointed as IT executives in 2013. Florence and Tondani resigned in 2014.

Denise Sasman was appointed as SEB's CIO on 1 January 2011, when it was decided that SEB should have its own IT division. Denise currently reports to Michele Jennings, SEB's CFO.

Sanlam Life's IT strategies

Sanlam Life's IT strategy was not formalised until 2004, when 'strategy' was explicitly added to Francois Venter's 'Architecture and Strategy' portfolio. The first IT strategy was defined under the 'How will we win?' question – a popular strategy formulation framework at the time: 'We will win if the business perceives and experiences demonstrable and sustainable value from IT, and sees us as its trusted partner in the execution of Sanlam Life's strategy.'

To achieve this, we need to be successful in the following areas:

- the way we engage with business;
- how we measure and demonstrate that we deliver value to business;
- architecture and infrastructure;
- solution development;



- sourcing, partnerships and alliances; and
- financial and risk management.

In 2006 SPF IT's vision statement was 'To be acknowledged by our clients as providing client-centric, cost-effective and agile services and solutions'.

Subsequent to the big restructuring brought about by the ITT programme, SPF IT's vision was formulated in 2008 as follows: 'To be recognised as a business partner in enabling business strategies and value creation'.

ITISS was established during this time, which explains why reference is no longer made to infrastructure services. However, the necessary governance mechanisms had to be established to regulate ITISS's service delivery to SPF and other participating business units.

The most recent (2011) version of SPF IT's vision and mission statements reads as follows:

'SPF IT's purpose and vision is to enable our business partners through the delivery of appropriate and innovative solutions'.

Our mission is enabled through:

- effective partnering with our business partners;
- making a positive contribution to the bottom line;
- ensuring innovation in solutions and services; and
- providing effective IT risk management.

Looking back on IT's structure and strategies over the past 25 years, there is a clear move from merely a support function

to being seen as closely aligned with the business and playing a critical role in the execution of the business's strategy.

Glacier

The very first unit-linked products (ULP) system of Sanlam Personal Portfolios (SPP and later SP²) was developed under the auspices of the Finpro programme. When SP² was established in 1997, it made use of SPF's IT staff for its IT operations, that is, until Wynand Louw became the CIO of SP² and established an internal IT team in May 2000. In September 2001, Innofin, a partnership with McQuarry Bank, acquired 50% of SP² and Thinus Delpont assumed the CIO role until 2003. During this period, the company operated as Innofin. While Thinus was the CIO, Andre Schutte was head of Development and Wynand Louw became head of IT Infrastructure. At this time, project management was established under the leadership of Ruth Knight.

Garry Wilford had a long tenure as Glacier's CIO – from 2004 to 2013 – with Hewan McCann as the head of Development, Wynand Louw as head of IT Infrastructure and Lesinda Pretorius the head of Project Management.

During this time, Glacier was also responsible for SCI's IT Development, until SCI regained this control in 2011, when Riana Coetzer was appointed head of IT for SCI. After Garry retired in 2013, Johann de Wet, previously head of Product Development at Glacier, added IT to his portfolio with Hewan, Wynand and Lesinda retaining their responsibilities.

On a business level, Glacier reported to the SPF Cluster, except for a short period (\pm 2003), when the business reporting line was moved to the Investment Cluster (during the Innofin era).



Group IT, Infrastructure and Shared IT Services

In order to co-ordinate activities across the Sanlam Group, a new IT function, Group IT, was established in 1997 under the leadership of Hannes van Rensburg. He held this position until August 1999, when he was assigned to Sanlam Digital Commerce (which became Fundamo). Kobus Venter succeeded Hannes as head of Group IT.

During the late 1990s Sanlam Life – the core insurance business – was split into separate business components for Life (Sanlam Personal Finance) and Group Benefits (Sanlam Employee Benefits). In August 2001, when Dr Leon Vermaak was Sanlam's CEO, these two businesses merged into a single business, Sanlam Life, once more. Nick Christodoulou, the former chief executive of Sanlam Employee Benefits, then became the chief executive of Business Development, holding responsibility for Group IT as well.

Lizé Lambrechts (previously programme manager for Finpro3) became head of Shared Services, which included Infrastructure Services and Corporate Facilities, early in 1998. Lizé held this position for a very short time, until she was appointed head of Business Design. Hennie de Villiers succeeded her as head: Sanlam Infrastructure Services in November 1998 and held this position until August 1999.

One of Sanlam's strategies during the 1990s was to outsource its IT Infrastructure Services. This first and major outsourcing deal was concluded in 2000, shortly after Sanlam's demutualisation. Attie du Plessis, Hennie de Villiers and Koos Liebenberg played a significant part in this process. The deal saw the departure of many of Sanlam's

in-house technical staff such as Gerrit and Ederik Kritzing, as well as some senior IT managers such as Drina Cloete, Nico Nel, Johann Bauermeister, Inus Mulder and Heinie Witte, who then joined Debis, the company that was awarded the outsourcing contract. Initially Group IT was responsible for the management of the Debis contract. Subsequently, this responsibility moved to Francois Venter's Infrastructure division.

When Dr Johan van Zyl took the helm in 2003 he reduced the size of the Group Office, which led to the departure of Kobus Venter and the appointment of Jan de Klerk as head of Group IT. Jan was later seconded to Santam as acting CIO. When he was appointed as Santam's IT head in 2008, Johan Marnewick became the Head of Group IT.

Closer co-operation with Santam and the search for greater efficiencies between companies in the Sanlam Group created the opportunity for the establishment of a shared IT infrastructure service in the Group. When ITISS was created in 2008, Francois Venter became the first chief executive of ITISS.

Strategic functions in SPF IT

Certain roles, functions and activities have evolved in the SPF IT department over the years. These functions can be considered 'umbrella-type' functions that meet the needs of the entire SPF IT division. They include:

- IT research;
- departmental communication;
- innovation;
- corporate social involvement; and
- staff composition.



IT research: Researching the future

Evolving from a library to a research function

In 1994, a decision was taken to open a new library, separate from the Sanlam Library, which would specialise in Information Technology subject matter. This was primarily due to the nature of the content and the need for library staff to understand the specific requirements and terminology of IT staff.

The library began its life as Business Systems: Information Service (Business Systems being the name of the IT Division at that stage), with a complement of two staff members. The service initially reported to the internal Business Systems: Training Department, until it was outsourced in 1999.

Initially, the library service consisted of a collection of books that could be borrowed, the circulation of computing journals and numerous cassettes and CDs. Additionally, the IT Library subscribed to research from the Gartner Group (later becoming simply Gartner) in order to gain access to world-leading research material and advice from analysts about important trends and technologies in the ever-changing world of IT. A few years later, a META Group subscription was added to the Gartner Group one, resulting in a more balanced research offering from the library.

Technology platforms

The technology platform that supported the library in the early years consisted of an in-house-developed Clipper program running on DOS, for the circulation of the IT journals in their well-known 'purple folders',

as well as a basic Lotus Notes database application for the library catalogue and lending process. Over the years, the Lotus Notes system was significantly enhanced through internal development and included all of the library's processes – from the acquisition of books to the storage and management of individual research requests and enquiries. In 2014, the decision was taken to find a new library system to replace the existing Notes database as a result of Sanlam's decision to decommission the platform.

Organisational restructuring

Organisational changes in 1999 resulted in the library then reporting to the Group IT department. Many additional responsibilities were added to the library staff's duties. These included various roles in communication, administrative functions and assisting with the department's FutureLab (a showcase of various emerging technologies for both business and IT staff) and the Innovation and Architecture Portal, which provided information on interesting and relevant technologies in a website format.

At this juncture, the library's name also changed to the IT Research Centre and a charge-back system, for certain research subscriptions, was implemented across the Group.

Further organisational changes resulting in the Group IT department being downsized ensued, and the IT Research Centre was incorporated into Sanlam Life IT: Architecture in 2003. Following the ITT Programme in 2007, the IT Research Centre reported to the SPF IT Strategy & Architecture Department, which is where it



currently resides. Although the IT Research Centre is organisationally positioned in SPF IT, it delivers services to many of the companies in the Sanlam Group.

A strong partnership

Since its establishment, one of the major achievements of the IT Research Centre is its 20-year partnership with Gartner, despite difficult economic conditions and a sometimes volatile exchange rate. This partnership has proved extremely valuable for research and decision-making for all IT departments across the Sanlam Group, providing strategic direction to the CIO through its EXP programme and tailored answers to IT staff through its core-services subscription. In 2014, the IT Research Centre had grown its subscription base by extending access to Forrester, Ovum and Info-Tech research.

Book collection and research requests

To stay current, despite the fast-changing IT landscape, approximately 100 books are added annually to the collection. The area that has seen the most growth over the years, however, is that of research requests, where clients are provided with focused responses to a specific research requirement or alternatively can discuss specific problems or issues via telephone with an overseas-based analyst from our subscription partners. The monthly average for this service totals 15 requests per month.

Marketing the IT Research Centre

Communicating with clients and marketing the IT Research Centre has been a focus from the very beginning. To this end, the library established a quarterly Books & Bytes newsletter and corresponding Newsflash to meet the need for advertising

new books or procedures, or for covering information of interest. South African Library Week was also an important opportunity to recognise the value added by libraries on an annual basis. The library also created a slogan: info| insight | innovation in 2011, which reflects the process of people engaging with the right information at the right time.

Moving forward

Since its inception in 1994, the IT Research Centre has made great strides in moving from a largely manual, paper-based environment to a mostly electronic one. This has included adopting an online library system instead of a manual card-based system, which has greatly improved the service offered to clients. Today, most of the resources available to clients are in electronic format and it is only the collection of books that remains largely paper-based owing to slow progress with e-book adoption in South Africa.

The IT Research Centre still remains relevant today thanks to its focus on providing information and insight to its client base, which extends beyond the borders of the IT department to both the business and the wider Group.

Departmental communication

The need to communicate is a basic human requirement and is an essential element of any well-run and effective department. SPF IT recognised the need for effective and relevant communication and in 2006 established a focus group of four people with the specific intention of improving the communication across the department.

A survey was undertaken among staff to understand which mediums and channels



would be the most effective ones for reaching the intended audience, and from this an IT Organisation Communication Strategy and Plan was developed in June that year, promoting the organisational slogan 'All for One, One for All'.

As a result, certain new communication vehicles were established in the department. These were not intended to replace existing or traditional ways of staff receiving information, such as line management meetings, but rather to complement them and ensure alignment across the department.

The new mediums included the following:

- The establishment of the *IT Times* bimonthly departmental newsletter. (Initially this newsletter was paper-based, but it was converted to an e-newsletter format in 2009.) In 2014 it was also converted to a quarterly newsletter;
- SPF: IT communication sessions. These sessions are held quarterly for the entire department and include feedback on strategy, IT performance and various presentations from internal IT, business and external presenters;
- SPF IT community on the corporate Intranet. A separate community that catered solely for IT's communication needs was created on the existing platform;
- The SPF IT Annual Report, published from 2007 to 2013, became the department's flagship communication vehicle, providing IT staff and business with a view of the major achievements and happenings in the IT department during the previous years. The format

of this publication also morphed from a printed document to a PDF-format publication and, finally, to a website on Microsoft SharePoint in 2013; and

- CIO Message. Established in 2009, this was a personalised quarterly message from the CIO to staff. It was incorporated into the *IT Times* e-newsletter in 2014.

External partner

An external company, Ilse Cilliers Strategic Communications (ICSC), is an important partner in helping internal staff to meet the communication needs of the department. Their specialised skills in design, layout and copywriting are contracted on an 'as-needed' basis.

Future strategy

The communication strategy will be refreshed on an ongoing basis as staff's needs change and as the media for communicating become more technically advanced. SPF IT Management's intention is to ensure that staff remain well informed and are a united team through effective and timeless communication.

Innovation

IT also understood the importance of continual innovation and endeavoured to provide the most innovative solutions possible to the business. Innovation went hand in hand with the research function, as new trends and technologies were identified and assessed for their relevance to Sanlam's business.

To foster innovation further, SPF IT ran a series of annual 'Innovation Days' from 2008 to 2010 for both IT and business delegates. These one-day events included



presentations on new technologies and interesting applications of technologies. SPF IT Innovation Days were co-hosted with IT's partners and were themed as follows:

2008	'It's about possibilities' with Tata Consultancy Services (TCS)
2009	'Connecting with telecoms' in conjunction with ITISS
2010	'Getting closer to your customer'

These events were well attended and generated new ideas for introducing innovation into the organisation.

SPF IT also introduced a Technology Research Agenda in SPF IT Strategy & Planning, where architects investigated certain technologies and provided feedback on their applicability to Sanlam. Also introduced in 2005 was the bimonthly Technology Innovation in Financial Services Report, which was circulated in PDF format to a specified audience. In 2013 the report changed format to become a blog on Microsoft SharePoint.

Currently, technology innovation is still considered to be a valuable differentiator and trends research is highlighted and investigated on an ongoing basis.

SPF IT's corporate social involvement initiatives

Introduction

Sanlam has always been active and visible in the community. As the importance of corporate social involvement (CSI) began to mount, Sanlam embarked on a process of formalising CSI initiatives under the Sanlam Foundation in 2011. In addition, it encouraged staff to get more involved in community projects and to support their

own initiatives. This process is centrally coordinated across the Sanlam Group, with dedicated teams within the business units/departments. SPF IT's very first CSI Committee was formed in 2010 and consisted of six volunteers. Carmen Davids was the first chairperson from 2010 to 2011, followed by René Wright from 2012 to 2013. Fikile Mtsweni took over as chairperson in 2014.

Investing in schools

The SPF IT CSI team first started supporting schools in 2011 and activities included the donation of 100 Sanlam backpacks and stationery to learners at Heideveld Primary on the Cape Flats, as well as coaching sessions for the school principal and his senior management team at Sanlam Head Office. At the end of September, a successful tree planting day was held at Heideveld Primary. An old Sanlam computer and motivational videos were also donated to the school for use by staff.

Parallel to the CSI team's initiatives, IT Development also signed up for Symphonia's Partners for Possibility programme in 2011. The programme assigns leaders in the corporate world to school principals for the purpose of mentoring and leadership support.

René was assigned as a thinking partner to Quentin Newman, the principal of John Ramsay High School, and provided one-on-one mentoring to Quentin. Old Sanlam office furniture and PCs were also donated to the school.

René served as CSI Ambassador from 2012 to 2013 and John Ramsay High was the main CSI beneficiary for those years.



In July 2013, phase 1 of the R3-million building project at John Ramsay High School began. The project included the upgrade of the learners' ablutions, the principal's office and staff facilities, as well as electrical improvements and more. It also included a much-needed upgrade to secure the premises, which will enable sports and recreation facilities to be incorporated in future. SPF IT's CSI team decided that it would continue to support John Ramsay High School in 2014.

Community involvement

The year 2010 was a busy year for SPF IT's newly formed CSI team. During the year the team supported six CSI initiatives and proved that 'IT has heart!'

The main recipient for the year was Zanolokhanyo Day & Night Shelter in Khayelitsha. Successful CSI initiatives for 2010 included a PC donation to Zanolokhanyo Home, the Winter Blanket Drive, the Mandela Day visit to Zanolokhanyo, and a book collection for The Bookery in Roeland Street. Soft toys were also collected for St Joseph's Home in Montana on World Aids Day and the year concluded with a Christmas party at Zanolokhanyo on Saturday 4 December 2010.

In 2013 great strides were made with the Bishop Lavis Development Forum (BDF) in a bid to involve the entire community in the school's progress, and SPF IT launched several successful CSI initiatives. Two wheelchairs were secured and were donated to the BDF's Health, Differently Abled and Social Works commissions. A successful Winter Woollies campaign yielded more than 3 000 packets of two-minute noodles, as well as blankets and hand-knitted winter warmers that

were donated by staff across the whole of SPF. The bulk of the donations went to John Ramsay High and the Bishop Lavis community, and the surplus was donated to the Inhata Shelter for Abused or Battered Women in Heideveld.

In addition to the continued support of John Ramsay High, the CSI team also identified smaller organisations or projects that they could support as 'quick wins' in 2014, including selling Tekkie Tax stickers and supporting the 9Miles Project, a community-based organisation in Strandfontein that teaches children to surf and imparts life skills.

SPF IT's CSI involvement has become an important way for staff to give generously and support those who need it most in an organised and timely fashion. The division's CSI efforts have also had the added benefit of uniting the department and spreading the reach of Sanlam's brand into local communities.

SPF IT staff composition

Staff profile

Creating and maintaining the right number and profile of IT staff members is an ongoing challenge that HR specialists, in consultation with IT senior management, strive to achieve. Factors such as gender, age and employment equity profile all play an important role in the appointment of new staff members, and are taken into consideration, along with the skills and experience that a candidate possesses. Coupled with this, the department must ensure that the Department of Trade and Industry's annual targets for transformation are complied with, and the SPF IT department has, to date, been quite successful in this area.



Over the past 15 years, SPF IT's staff numbers have remained fairly constant, with 236 full-time staff members in the department's employ at the end of December 1998, which increased slightly to 254 full-time staff members as at the end of July 2014.

Ensuring gender equality within the department has always been an important aspect of these figures. As of December 1998, 46% of staff members were female and 54% were male. These figures have remained largely unchanged, with 44% being female and 56% male at the end of July 2014.

The employment of an increasing number of younger employees has resulted in the average age in the department decreasing from 44 years of age in 1998 to a current average age of 43 years.

Transformation

The IT Division has taken big strides over the past 15 years with regards to staff transformation. As the department has an extremely low annual turnover of between 1% and 3%, transformation has not been an easy task. However, bearing the above in mind, the department has made significant progress by increasing the number of black females in its employ from only five in December 1998 to 30 in July 2014. The number of black males in the department has shown even more impressive growth, from just 10 in December 1998 to 77 in July 2014.



SPF core

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The second section of this book gives an account of technical developments that took place in Sanlam Personal Finance (SPF) – from the legacy back office systems and the establishment of the first client contact centres and their underlying technology to the crucial role of technology in the administrative core of the business. Technological advancements were focused on making systems and processes easier to work with and included better user interfaces, which in the end had a positive impact on Sanlam's relationship with clients and intermediaries.

Also read here about the major business projects that were initiated and where IT once again played a substantial role. Intermediaries play a significant role in the business's success, and it is thus fitting that a vast number of IT developments focus on the technological support provided to brokers and advisers to allow them to deliver the best service possible.



Sanlam Personal Finance: A bird's eye view of key processes, systems and change programmes

Sanlam was founded on 18 June 1918 as a mutual life insurance company. Over the years, other business divisions were formed to cater for more diverse products such as employee benefits (pensions), specialised investment services, collective investments (unit trusts), medical schemes and others to provide a comprehensive financial service to clients.

Sanlam Personal Finance (SPF), previously known as Sanlam Life, was always the largest division and due to the sheer volume of business and the large number of clients, the major IT developments since the installation of the first computer in September 1958 took place in this arena.

Sanlam decided to select and train suitable people from the administrative departments as programmers. A benefit of this was that these employees knew and understood the products and business processes and could consequently perform some of the business analysis themselves. One must remember that IT was still an almost unknown science at that time.

Products and services experienced a slow evolution until the middle of the 1980s, when there was a sudden upsurge of new products in the marketplace, which also led to increased volumes. The new environment made new demands on SPF to increase its capability of faster development of new

products and at the same time to enhance the quality of services to clients.

It is important to bear in mind that life insurance companies have long-term policy contracts with clients and their administrative systems and processes have to cater to the terms and conditions until such time as the last contract has come to an end - this could be a timeframe in excess of 90 years.

Systems in support of SPF's key business processes

Acquisitioning

All insurance products have a life cycle that is followed from the date of sale (known as a proposal) until the contract comes to an end for one of a number of reasons. Most of SPF's IT systems were developed to administer these products, and service Sanlam's clients and intermediaries through the life cycle of the product.

The first step is the acquisition or sales process. There are systems to aid the intermediary in the process. Currently SPF provides the SanFin web-based system to intermediaries, which includes a comprehensive suite of applications as aids. This enables the intermediary to gather information, perform a financial needs analysis and emerge with a financial plan and quotations (SanQuote). SanFin



also has a Client Relationship Management (CRM) function, where the intermediary has his own database of client data.

Intermediaries have a number of ways of contacting both new and existing clients. One way is by using the 'cold' contact method (an unknown person contacted by telephone or a visit to his residence). Another is a referral by another client, while yet another is a lead generated from the Leads system or, lastly, the prospective client contacts an intermediary directly seeking advice.

A needs analysis is undertaken, taking into account the client's financial needs (amongst other things death, disability, retirement and investments) and all existing insurance and investment products the client may have. This can lead to a number of quotations to present to the client. If the client accepts, an electronic pre-populated proposal form is completed, signed and submitted for underwriting and new business is issued. Compliance controls are in place to ensure 'best advice'.

Underwriting and issuing of new policies

An electronic proposal is then sent to Head Office (Auto New Business or NUB for Legacy products) for underwriting and issuing on the contract. A member record (LID) is created for a new client or updated for an existing client. If any risk cover is required, the underwriters decide whether medical reports are needed. Proposals can be accepted as is, or with a premium loading for a medical condition and/or a risky occupation and/or dangerous part-time activities. In some cases the risk can be spread to one or more reinsurance companies. The policy data records for the policy (on Epsilon or POL for Legacy

products) and payment method (DEB, SSO) are created, followed by the policy issuance and printing of the contract. Sales commission credits are then generated to the commission payment system (AGT, KOM and CMS).

After a policy is issued it undergoes a number of general administration processes (on Epsilon or POL for Legacy products), some of which are of a recurring nature, others of which are ad hoc and then there is an end-of-contract process. Premium collection (excluding single premium products) is a recurring process where, according to the frequency, premiums are collected by bank deposits (cash, EFTs or cheques), bank debit orders (DIS, DEB) and payroll deductions (stop orders – SSO). Non-payment leads to a lapse or fully paid-up status. Resuming the premium payments leads to a reinstatement of the policy.

Alterations occur when a client wants to add or remove rider benefits, change level of cover and so on. The process is similar to New Business, but the existing record is amended and a revised contract is produced.

Policy Administration and Claims

General policy enquiries for current and future values, premium positions, changes of ownership, nomination of beneficiaries and cessions are processed on a daily basis. Other transactions that are processed include changes to addresses, surnames, banking details and the like. Inflation-linked increases in premiums and/or cover are also a recurring event.

Certain claim events can be recurring, like partial disability claims, medical cover and trauma, and do not lead to the end of the



contract until all benefits are exhausted. Where final payments are made, for example surrenders, maturity and death (processed via the CLM system), the contract comes to an end. Annuity payments (PMT & Epsilon) are recurring by nature and continue until death or the end of a guaranteed term.

Batch processing

Many functions do not need to occur in real time and are generally left for the after-hours batch window, when the usage of computer capacity is lower. There are also functions that collect data online and then have one or more runs during working hours to process that data, for example the twice-daily run online payment run (EFT to banks).

The Treasury function, which calculates a net position for the buying and selling of investments for unitised products, is a daily batch process. This data, of the actual price calculations (Curo) and the actual investment or disinvestment of financial instruments, is then forwarded accordingly. All general ledger journals (Walker), as well as all commission debits and credits (AGT, KOM and CMS) are processed in batch as well as the updates to the MIS data warehouse. The printing of client-facing documents (CFDs), mainly by MTEXT, also runs daily. Another batch run is the generation of follow-up transactions generated by a previous event (for example, buying units when the price becomes available). There are also transactions generated for inflation-linked premium and cover increases on policies. Then there is the printing of lists and/or policy slips for administrative personnel to handle general exceptions.

There are also processes that occur weekly, such as the security backup for Legacy POL data. The Actuarial Data Warehouse (DWH) has a midmonth and an end-of-month update cycle, whereas the Client Information Warehouse (CIM) has a daily cycle for certain information; a weekly cycle for other data, and then a product update after the DWH runs. Legacy products have a monthly batch run for Actuarial renewals.

Bonus declaration for certain Legacy products is an annual event. Another annual event is the compilation of aggregated benefit statements and contribution certificates for clients.

Optimal usage of computing resources

In the early years of computing, resources such as memory and storage were scarce and expensive, causing programmers to find creative ways in which to minimise the use of these resources. To save disc space and restrict the number of entries in respect of premiums received, three different methods are used on the Legacy policy administration system:

- For cash payments, a 'positive method' is used, in other words an entry for every receipt.
- For debit orders, a 'negative method' is used (the default method). The first payment is registered and, until such time as an event occurs to change the regular payment, no entries are made. There are thus start and end dates for similar regular payments. Non-monthly payments follow the positive method.
- For stop orders, there is a database of all employers that allows deductions that, among other things, carry a date to where the premiums have been

received (and balanced). As with debit orders, start and end dates are carried on record (negative method). The SSO system is used for the administration relating to balancing and reversal of any policy premiums not received.

The endowment policies on Lamda/Epsilon use daily unit prices for their funds and consequently require the date of every payment. This system thus uses the 'positive method' for all payments received. For a stop order case, the system deems every payment to have been received on the first working day of the month. Should the SSO detect a non-payment, then a transaction is generated to reverse the payment entry on the system.

Large-scale renewal programmes

By the late 1980s and early 1990s the insurance industry was also going through a mini revolution to become more competitive, to bring more innovative products to market more often and to provide better services to clients.

The Finpro programme was initiated in 1995 with the objective of designing and creating a new product and operating platform for Sanlam Life using the latest technologies. The idea was to build a brand-new Sanlam Life – a new policy product range with a policy administration system and new processes.

The programme had to meet the following objectives:

- To implement linked products (Sanlam Personal Portfolios);
- To replace the outdated and inflexible Sanlam Life systems;
- To significantly improve productivity

for Sanlam Life's business processing; and

- To significantly improve flexibility and time-to-market for new products.

A new development platform, Seer HPS, was selected in the previous year by Business Systems: Sanlam Life (BSSL) with the intention of renewing the way system development was done. Seer HPS was an object-based, repository-driven, CASE modelling and code-generating product. IBM South Africa was Seer's local partner.

A huge project was established consisting of 165 people, including contractors from abroad. The intention was to create a streamlined process that would enable Sanlam to introduce a new policy to the market within a day, instead of the weeks and months it took at that stage. The programme was managed at an executive level by a steering committee consisting of senior general managers, with the managing director as sponsor, and at an operational level by two core teams consisting of representatives from senior management seconded from the departments involved.

The Finpro programme later consisted of three subprojects – Finpro1, Finpro2 and Finpro3 – with the following objectives:

- Finpro1: to create a new product and operating platform for Sanlam Life;
- Finpro2: to transition from the existing platform to the new one; and
- Finpro3: to optimise existing systems and processes and to address the Y2K issue.

(Finpro1 & Finpro2 reported to the same core team.)



The Finpro1 delivery was planned around six major releases. The first release was completed on time and the second three weeks later than planned. The third release was projected to be implemented in July 1999, five months later than planned. Several attempts were made to accelerate the development and, although some improvements were achieved, it was not nearly what the business wanted and needed. Early in 1999 it was decided to decommission Finpro1 for the following reasons:

- With the consolidation of product lines in SPF and the move from product to client orientation, some of the programme's design required adjustments. Further changes occurred in the SPF business strategy – the move to low-cost provision of only those products with significant expected volume required less flexibility in the system design. SPF also decided to no longer offer universal life products, which required major changes to design and project plans.
- Finpro's design was based on the Sanlam strategy of 'world class' and led to expensive development and risks for high system operating costs. The strategy then changed and the best available packaged solutions could be selected and the business processes adjusted accordingly.
- The strategy of custom-built systems also had to be reconsidered because of the significant change in packaged solutions in the previous two years.

Sanlam benefited significantly from the Finpro1 programme, delivering successes such as the Sanlam Personal Portfolios,

Offshore and Guaranteed Fund and Rolling Equity Bond implementations. Major parts of the systems and technology for the Sanlam Life Call Centre were also designed, built and implemented through the Finpro projects and by their staff.

In 1996 the Sanlam Life Call Centre programme was initiated by Finpro2 to provide integrated service to clients during the system transition.

Millennium programme: implementing a packaged policy administration system

Lamda 3

Following the closure of the Finpro programme, Sanlam implemented a policy administration platform that could handle the new-generation products (initially only unithesed investments and fixed-term annuities). The time to market was of the utmost importance, and therefore Sanlam decided to buy a package, rather than develop a product administration platform. There was also pressure resulting from the demutualisation process, where the financial market analysts had a negative view of Sanlam's ability to be agile when it came to responding to market forces. The Marlborough Sterling Group's (MSG) Lamda version 3 was the chosen package and implementation took place in October 1999. The Alpha Calculation Engine (ACE) system, written in C++, performed the premium calculations. A feature of Lamda was that product features (for example, fee structures and effective dates) were carried as standing data on a database, making new products or changes to existing products easier and faster.



The original Lamda (version 3) implementation was in both FoxPro version 2.6 (the online components) and FoxPro for DOS (the batch components), using an xBase (.dbf) database.

The Lamda architecture was designed using a traditional client server model. This meant that the majority of the functionality was held and executed in the client machine, data was held on the server and a totally separate batch component ran overnight on the server.

The new platform had to be integrated with all of the current Sanlam Life generic processes like debit orders, stop orders, commission, Walker ledger and portfolio statements, although some of the functionality was part of the Lamda package. Sanlam didn't want clients to experience two separate systems, so these functionalities had to be disabled in Lamda and integrated into the existing Sanlam systems.

The integration to and from external systems was either online or via batch. Online enquiries and updates from external systems were done by Lamda Messaging Architecture (LMA) using MQ Series. Cool:Gen proxies were used for online enquiries and updates to external systems. These interfaces were known as Pipes, Interfaces and Gaps (PIGs).

Although Lamda had a Party (Client) management system, the data was not comprehensive enough, so it was decided to keep the LID system as the master client system, while retaining Party as a slave. All Client updates to LID that impacted Lamda were sent via a PIG interface to update the Lamda client database. For this reason, the

Lamda Intermediary management system was adapted to use a daily updated copy of the AGT database (Intermediary HR system).

As Lamda did not have the functionality to handle workflow, Sanlam decided to develop the Case Management system, which could handle the integration with incoming communication, such as telephony, images and e-mails. The Case system was also used in the New Business process. Case was developed in Cool:Gen with a Filenet workflow engine and integrated with Lamda via the Desktop integrator. Lamda handled the classic functions required by any policy administration system, namely new business (and alterations), premiums and investments, policy service, client-facing documents (CFDs), exits and integration/interfaces with external systems.

For batch interfaces to export and import the data from the Legacy to the Lamda environment, the interface system created tilde-delimited files for data transfer.

Lamda had its own Lamda Print Engine (LPE) for the production of client-facing documents. After the implementation of MTEXT on the mainframe it was decided to use the functionality provided for Lamda printing. A document data collector was written in COBOL to convert the tilde-delimited data to the format required by MTEXT. This was implemented in 2004. Because of relatively low volumes and a general lack of available resources, the LPE was still used for the client-facing documents requiring alterations on old products.

Lamda 5

The Lamda 3 structure, although very



efficient and successful, became difficult to deploy in remote installations. In addition, the architecture that had been appropriate on the Windows 3.11 platform was no longer satisfactory for the latest architectural standards of the Microsoft platform.

It was therefore decided that a new version of Lamda would be designed. This would broadly be a superset of the original Lamda version 3, and would form the basis of a fully Windows and DNAfs (Distributed Network Application Architecture for financial services) compliant system.

This system would provide a variety of deployment options, from very thin to fat clients, and would be completely component-based, employing Visual Basic (v6.0 sp5), using COM and SQL Server (v2000 sp3) as the database technology. This version (developed by MSG in the UK) was implemented at Sanlam in 2001.

In July 2003 Sanlam bought the code and Intellectual Property from MSG and also appointed the local MSG personnel. The decision was based on a strategy to insource control over a strategic asset. Secondly, there were no other companies contributing to the Lamda software upgrades and versions, and Sanlam was not reaping the normal advantages of using a traditional software package model. The MSG rates were high and Sanlam's IT management believed that savings in development staff rates would pay for the cost of the source code. This proved to be the case and the payback period was less than two years.

Lamda 5 could cater for risk products. The first Sanlam Risk product launched in March 2003 was Waiver of Premium on investment products. The Magnum

underwriting tool (a Swiss Re product) was used for medical and occupational underwriting.

Matrix products: 'Legacy' to the rescue

In August 2002 Sanlam launched a new generation of risk products known as Matrix. The initial version of Lamda did not cater for risk products and there was an urgent need to reach the market quickly with a new generation of risk products with multiple benefits, combinations thereof and some completely new concepts, such as functional impairment.

This meant that an interim solution had to be devised, for both the PC-based SanQuote quotation system for the intermediaries and the Head Office new business systems. SPF IT designed a solution consisting of Legacy and new world applications that sufficed until the functionality could be made available on Lamda.

Tata Consultancy Services (TCS) was contracted as a stopgap measure to provide the necessary development for the PC-based SanQuote for the quotations (owing to a lack of available resources). As premium calculations are done at various stages in the process, a calculation engine named Premium Black Box (PBB) was developed in C so that the same code could run on an intermediary's PC, on a server and on the mainframe.

Lamda had two components that could be reused, namely Auto New Business (ANB) to receive pre-populated proposal forms from SanQuote, and a Case management tool for the new business process. A Cool:Gen application, New Business Loader (NBL), with its own input screens was



developed to work in conjunction with Case and the Magnum underwriting engine (a PC-based system developed by Swiss Re) to create a client record (LID), capture the proposal, do medical underwriting, credit commission to AGT and build up a string of policy data on a file. This file was used to create policy records on the Legacy POL system for policy administration, such as premium collections and renewals, and events such as lapses, disability and death claims in the interim. MTEXT was used for printing the contracts.

On the Legacy side a set of Risk Product Engine (RPE) programs was developed in COBOL to use the data provided by NBL to create the basic policy record and the DB2 tables for the complex normalised policy data. The RPE programs were also used for interfacing to the claims systems for deaths and disabilities.

The Matrix product range was launched in August 2002, using a combination of Legacy and new world systems. The flexibility and adaptability of the Legacy systems enabled the business to sell and administer the Matrix products for three years until the development on Lamda was completed. Once all the data (including all the history of payments and events) was migrated to Lamda, the functionality was deactivated on POL in October 2005.

Renaissance Programme

Microsoft ended mainstream support for VB6 at the end of March 2005, and final support in early 2008. This necessitated a rewrite of Lamda. It was decided to redevelop the system in Java, a strategic development language of choice for Sanlam. After a request for proposal (RFP) process, TCS was awarded the contract and

the programme began in March 2009 and was implemented flawlessly on 6 October 2012.

A reverse engineering approach was adopted, using the Lamda system's functionality as input for the new system, known as Epsilon.

The look and feel of the user interface screens and the database were kept the same to ensure that the learning curve for users already working on Lamda was minimal. The efficiency of overnight batch runs was improved, resulting in greater online availability. The client server architecture was also changed from fat client to 3-tier. The desktop PCs run what is known as Smart client (Eclipse RCP – Rich Client Protocol), where intelligent validations are performed before the transaction is sent to the main application on the server. A benefit of this is that any implementations of system changes that do not affect the initial validations do not have to be rolled out to the desktops.

The interface and integration operations to external systems were seemingly kept the same so that those external systems were not impacted, but internally some changes were made to align Epsilon with SOA principles and best practice. There are three integration modes for external systems to interact with Epsilon – MQ Series, web services and file-based integration. The predominant integration mode is MQ Series via Epsilon's mediation component (EMC). The Case and Auto New Business systems are able to access Epsilon directly via web services.

Some of the mainframe systems on which Epsilon is dependent were already web services-enabled, while some new services



had to be created. Examples are bank account verification (DIS), tax calculation (CIS), stop order validation (SSO) and a number of client (LID) services.

In addition, the ACE and PBB calculators are exposed to Epsilon via the Calculation Manager, which is not an enterprise web service, but uses Microsoft Internet Information Server (IIS) as its hosting technology.

Of the current (2014) approximately 100 million transaction calls to Epsilon per year, 20% are from external consumers via MQ Series and web service calls, and 80% from the Epsilon UI itself. Epsilon exposes 600 Enterprise JavaBeans (EJB) methods and 30 web services.

The exported data files that Epsilon provides have traditionally been comma separated values (CSV) or tilde-separated. However, new file exports are now being provided in XML, as mainframe consumers become more tolerant of accepting XML data.

Even though TCS was responsible for rewriting the system in Java, the SPF in-house VB6 developers were trained to develop in Java and have successfully taken over the maintenance and any enhancements themselves.

Finpro3 Programme

In May 1996 a core team of four people was selected to strategically manage this programme. This team consisted of a representative from Actuarial services, Individual Insurance Information Services, Individual Insurance Client Services and Product Development. When Finpro1 was

decommissioned, the programme became the Sanlam Life System Renewal (SLSR) programme.

Finpro3 had the following objectives:

- To address the Y2K issue.
- To define, document and implement the Development Process Methodology (DPM).
- To define an Application Architecture, which included the preparation of the mainframe systems to be used in a Service Based Architecture (SBA).
- To investigate and provide 24/7 mainframe application services – this included the unbundling of large batch runs like 'Vervaltrek'.
- To enhance certain Legacy systems to save on costs and streamline processes. They were also designed to be reused by the new generation policy operating system. These were, among others, daily debit order processing (versus the monthly run), a twice-daily direct-banking credits system to eliminate cheques, a new stop order system, and a new death claims system. All of these systems are currently used by the new platform - Epsilon.
- To design and implement parallel testing of complex calculations.

24/7 and unbundling projects

By the mid-1990s, excellent service had become one of a company's competitive advantages. Clients and intermediaries were demanding not only better service during office hours, but also an after-hours service, especially as the Internet became



available and affordable to more people. For a financial institution to provide adequate service, it had become imperative to offer a 24/7 service.

SPF had batch programs that ran on a monthly (weekly, in some cases) basis to work through the main policy database (flat file format on VSAM) to perform certain functions. The main program was the so-called 'Vervaltrek' (POL21 – with 29 functions). The design was such that all the records were dumped onto magnetic tape for the various functions and on completion the updated records were uploaded to the online VSAM database. This meant that no online systems were available for that period. With the growing volume of records, more complex products being sold and the range of functions required in a fixed sequence, the run could not be completed overnight (usually a Friday). The first step to ensure that clients could be serviced on a Saturday was to move the run to Saturday afternoon until Sanlam could find a solution to the problem. At times the run was only completed late on a Sunday evening or early on Monday morning.

The solution was to move the data onto DB2 in the existing format and make use of the indexed columns that DB2 provided. The first unbundling project (POL21) commenced in October 1997 and was implemented by the middle of 1998. By unbundling these month-end functions, they were made independent of the online environment. This also created opportunities for separating some of the functions to more appropriate time slots during the month. This ensured that the workloads generated by these functions were more evenly spread, leading to productivity gains.

Some notable quick wins were:

- The Actuarial Renewals (WDG21), which was one of the main culprits for high CPU usage, was shifted to run as soon as the unit prices were calculated (usually in the first week of the month).
- The initiation of the Index plan growth transactions to before the monthly commission cut-off date, to provide an even distribution of cash flow to intermediaries.
- The annuity payment run (PMT21) was also shifted to an earlier time, so that cheque payments could reach the beneficiaries before the end of the month. (This was before cheque payments were discontinued.)
- The opportunity also presented a mind-set change and led to a complete redesign of the debit order processes (DEB) to change from a monthly cycle to a daily one. This project, which lasted about six months (started in late 1999), was complex, as all the business rules such as premium allocation and renewal positions had to be revisited and tested comprehensively. The old process had a monthly cut-off and any new debit orders or bank detail changes could not be applied before the next monthly run. This meant that a new debit order that missed the cut-off would do a double draw from the client's bank account at the next month's run. This was inconvenient to clients and often led to a Refer to Drawer (RD) – insufficient funds. A similar situation arose when clients changed their banking details. The new system had a one- or two-day lead time, depending on which bank was involved.



Using the DB2 solution for unbundling was not restricted to the main policy database, but was also used in other areas that had the same restrictions, such as LID (Client records).

Other benefits were:

- Intermediaries could use their S.Net application to download and upload data at any time it suited them, enabling them to work when it suited them and their clients.
- Clients/policyholders could also use the Internet via Secure Services to obtain portfolio statements and perform certain self-service transactions or initiate certain requests to the Client Contact Centre (CCC).

Death Claims (CLM) rewrite

SPF's death claims administration system was written in 1984 as a crude workflow system. A death claim is handled as a single unit of work consisting of all the policies held by the deceased. The previous process was completely manual and the bundle of policy files had to move from one assessor to the next, depending on their level of expertise, with very little control of where in the process the package was. The administration system was not designed particularly well and caused severe maintenance problems. There were many manual interventions and the correspondence produced by the system was not reliable and needed to be checked and rectified before mailing. Initially the 1996 Finpro1 release planning catered for a replacement system well before the end of 1999. When the release plan was changed it became obvious that the new system would not be ready by the end of 1999. Urgent action was required. As it happened, the

Finpro1 programme was decommissioned well before 2000.

There were two options available: either to make the existing unstable system Y2K-compliant, or use older technology (mainframe/COBOL) to build a new system, as the necessary local resources were available. To use the HPS case tool would have meant that expensive foreigners would have to be contracted, as there were few local experts who could perform the task. The first option was rejected because it did not make business sense to spend time and money on a dilapidated system that would have to be replaced later anyway.

The design for the new online system had to be such that the system would be independent of the policy data and the source of that data. It was decided to use layering principles (in other words, presentation component, process component, business component and data component independent of one another) to design the system and COBOL was selected as the development language, using Istel (later Jistel) as the UI. The CLM mainframe system was implemented in February 1999, in good time for Y2K, and could cater for both Legacy POL and Lambda/Epsilon (and any other policy system if need be).

IBM's Content Manager was used as the workflow tool, mainly because death claims are heavily dependent on documentation. The system also contained rules to guide the assessor in what supporting documentation was needed (for example, medical reports and accident reports) and whether the claim had to be checked or reported on the industry-wide database hosted by Raxis (to counter fraudulent



claims). All client-facing documents were generated by MTEXT and the assessor had the opportunity to edit the document before printing and storing the image to OnDemand. All incoming documents were also stored in OnDemand. The system followed up on all outstanding documents on a regular basis.

The system interfaces to SARS via e-IRP for tax directives. Where a life annuity or a fixed-term annuity has to be issued, a transaction is sent to the Legacy NUB for further processing. Although Lamda/Epsilon can currently handle term annuities, no provision has yet been made for life annuities. The volume of term annuities emanating for death claims is fairly low and thus far there has not been an opportunity to change to Epsilon for them.

The fact that layering principles were used has meant that the roll-out of new policy products has had less of an impact on the CLM system.

Claims other than death, such as disability (non-RA), trauma, income, sickness, funeral and medical, are each administered manually by their own set of transactions. On the Legacy system the transactions either have a POL or PEP name, while Lamda/Epsilon has a set of Benefit Claims System (BCS) transactions. The volumes are relatively low and there has never been a compelling business case to develop properly managed administration systems. The FAS system caters for disability claims for Retirement Annuities (RAs).

Parallel testing

Many policies, especially the Universal Life types, have very complex actuarial calculations. The combinations of different

types of policies and rider benefits led to a myriad of combinations that had to be tested every time an actuarial basis changed or new products were introduced. To streamline this process and to ensure accuracy, parallel testing was introduced.

The Actuarial department is responsible for ensuring that all calculations for policy values – current as well as projected – are correct. The Actuarial Department developed programs in Fortran to mimic the mainframe calculation programs. On IT's side the test cases (a selection of policy records) were run through the calculation programs and the relevant policy data items and the calculation results were formatted into data views that Fortran could use (Full words and Double words, versus Packed Decimal). Actuarial could then run their programs and automatically compare answers and if their answers were within certain tolerance levels, the IT calculations were declared correct.

In about 1995/1996 it was decided to implement daily controls of values, whether there were changes to programs or not. IT made a decision to write an Actuarial-formatted record along with every event (transaction) that led to a claim payment (e.g. surrenders, maturity and death) onto a file (DATsx) that the daily batch run would collate and initiate the Actuarial programs to run. Any exception would then be reported and any production error could be fixed immediately.

The Epsilon environment also does parallel testing, but follows a different process. The daily claim movements are written to a database for bimonthly updates to the Actuarial Data Warehouse (DWH). Daily extracts are made from this database



for testing purposes. For these cases the Actuarial programs were written in VB6. The Actuarial department's developers are currently in the process of rewriting them in .NET.

The major benefit of this process was that any major errors could be rectified before too much financial 'damage' was done. This was in the interest of both the client and Sanlam. There is also the added benefit that the laborious task of manual calculations was removed.

What does the future hold for SPF's core IT systems?

Now that Epsilon is positioned as the growing platform for strategic policy administration, the Legacy policy administration platform running on the mainframe will run off over time. In light

of this, SPF is, at the time of writing this book, conducting a 'Future Platform' initiative to determine the strategy for moving the existing policies off the Legacy platform to the most appropriate platform for the remaining systems that also support Epsilon. It may potentially result in migrating these systems off the mainframe onto open systems similar to those that Epsilon and Sentrix are running on. This strategy would consolidate platforms and thereby reduce the overall total cost of ownership.



LID: The Master Client Database

Background from 1968

LID, SPF's Client Master Database, was developed in the late 1960s as an Assembler application running on the mainframe with a BDAM database. In those days, memory and storage were very scarce and expensive, with the consequence that the record had to be compressed as much as possible. The record was designed to make use of variable length fields and bits to represent data (for example, if bit 7 of byte 8 was a '0' it would indicate a Male; if it was a '1' it would indicate a Female). The database was implemented using two files: LIDS0, which contained a fixed amount of blocks where the actual LID records were stored in LID number sequence, and LIDS1. LIDS1 was the index file that enabled fast search/retrieval of a LID record. LIDS1 was refreshed once a month. Weekly and monthly batch jobs reorganised the files (LID10, LID20), and performed data cleanups (LID11) and reconciliations (LID12).

The LID number was derived by using the first three letters of a client's surname, followed by the first two initials (an * if there was only one initial), followed by a sequence number 000 to 999.

For example, BESMJ005 would be the LID number for the sixth client with the name of MJ Bester – the first one would have been BESMJ000.

The LID number was also carried on the POL (policy) record(s) of that client. An indicator of the relationship (or role) of the client was also carried on the POL record, for example, the assured, the co-assured, the beneficiary and the premium payer.

This solution was unique in the industry at the time, as a client's details (name, address and the like) only existed on one record while he/she could have any number of policies, thereby solving the problem of multiple sets of data for the same person

becoming out of sync with one another.

Moving from BDAM to DB2

This design was used until 1997, when the data was migrated from BDAM to DB2.

The migration only involved the creation of a DB2 table with two fields, namely the LID number (indexed) and a variable field to store the full LID record in its current format. All the LID I/O routines were changed to use SQL to access the data. Information retrieved from DB2 was then overlaid with the original record layout, with the consequence that all programs could continue to operate as before.

The formula used to derive LID numbers had to be changed, as the system was running out of sequence numbers for certain name combinations, for example, JJ Botha or S Naidoo. The format stayed the same, but was no longer derived from the surname and initials.



The new numbering system began at AA6AA001 and grew in sequence, so the next numbers were AA6AA002, AA6AA003... (The 6 in position three is used to distinguish between the new and old formats.) Another benefit of using this formula is that the LID number no longer needed to be changed when a client's surname changed.

Because LID was on DB2, the unbundling of some batch jobs, such as LID20 (reorganisation and removal of obsolete records) was allowed without impacting the online environment. The reconciliation (LID12) program was also decommissioned because it was no longer required.

Implementing a relational database design

It became increasingly difficult to add metadata (data about data) to LID and, with the move to COBOL, the LIDSO record design became obsolete. A project was initiated to utilise the full benefits of DB2 by migrating to a full relational design. Approximately three months were allocated to using IBM's IAA (Insurance Application Architecture) as a reference model for designing the new LID data model. The IAA model greatly assisted in producing a proper data model design. To this day, there has been no need to change the design, although it has been frequently and easily extended to cater for new business data. The migration was scheduled over a weekend to ensure the complete migration of about 6,5 million LID records. A tool was developed to change the new data back to the old format in order to minimise the impact on existing systems (such as POL and NUB). Other systems that used LID were changed as and when resource capacity became available.

As part of this project, most of the Assembler code was replaced with new COBOL programs and all the VDU (green screen) transactions were decommissioned by providing all functionality in Istel.

Keeping LID in sync

The intermediary is often the first person to know if a client's details have changed. An automated process was designed for those intermediaries that use S.Net or SanFin (the new web-based application) to ensure the LID record on the mainframe remained in sync with any changes they made to their client database, and vice versa, should Head Office receive a notification first.

This process only applies if the intermediary is the registered adviser (known as the 'jockey'). For S.Net users the process is synchronised (via Intellisync) whenever the intermediary connects to the server. For SanFin users, however, the SanFin Back Office application running on a server at Head Office executes the synchronisation in batches on a daily basis.

LID web services

In 2007 the Sentrix Client Contact Application (CCA) project required real-time integration to LID, AGT and SAP (HR System). Once again using IAA as the reference architecture, a Java Party component was designed using SOA principles for the first time in SPF. This component consisted of four main Managers, namely Client, Organisation, Intermediary and Employee.

All of the required business functions were grouped and exposed as operations in these Managers:



- Client and Intermediary Manager exposed all the required LID functions;
- Intermediary Manager exposed all the AGT functions (enquiries only); and
- Employee Manager exposed all the SAP functions (enquiries only).

The Party component was deployed on IBM's Web Application Server (WAS), making it possible for desktop and web-based applications to interact with the mainframe LID and AGT systems. Some of the main users of the web services are:

- The Sentries application in the Client Contact Centre (CCC);
- S.Net suite or SanFin for the intermediaries; and
- The Sanlam Secure Services application on the Internet for registered clients to enable them to transact online.

Consolidating client information

The LID system has evolved from a Legacy background to one of the most accessible and widely used components that help to ensure SPF's drive towards client-centricity and operational efficiencies. Today, the LID system is unquestionably the cornerstone of the Client Contact Centre, servicing clients with products on both the legacy POL and new world Epsilon platforms. Owing to technical incompatibilities in the late 1980s between LID (running under IMS) and Sanlam Collective Investments' new system development (running under Datacom on CICS), SCI designed and implemented its own client database as part of the SHR system. Glacier also has its own client database just like all the other product providers. Client information from all product administration systems is consolidated in the Client (CIM) Data Warehouse.



Distribution: Enabling sales and supporting the sales organisation

'Insurance is sold, not bought' is a well-known expression in our industry. Sanlam understood this statement from the outset and created a sales/distribution force that could sell Sanlam Personal Finance's (SPF's) products anywhere in South Africa. Initially systems were developed to administer the sales staff and their commission. Quotation systems soon became a necessity and, with the advent of the PC and the Internet, these systems had to be renewed to stay abreast of the latest demands from customers and intermediaries, as well as technological developments. In recent years more systems were added to the systems portfolio to meet the regulatory demands contained in legislation such as FAIS and FICA.

Administering and remunerating intermediaries

Life insurance has always been seen as a 'grudge purchase' – very few people voluntarily buy products. The result is that intermediaries (sales people), who have to be well trained and accredited to sell insurance and investment products, must seek out potential clients. Intermediaries are divided into two categories: tied agents (generally known as financial advisers), who are employed by a life company, and brokers, who are either self-employed or are members of a larger brokerage. In addition to these two channels, there is also a direct/outbound postal and telemarketing channel, Sanlam Direct, and briefly there was an Internet-based self-service option known as SanlamConnect. Sanlam's intermediaries are mainly incentivised by commission generated by the volume and size of the business they produce. There are various remuneration contracts that detail the circumstances surrounding how

commission and possible bonuses will be calculated and paid. The term over which commissions are paid varies according to the type of product sold. The commission term types can be once-off, monthly over two to five years, and in the form of a trail fee that is paid until the product terminates.

To manage these, two mainframe systems, AGT and KOM, were developed in the early 1960s in Assembler/COBOL and more recently the new commission management system, CMS, in Java.

The AGT system manages the organisational structure of the intermediaries, as well as their contracts and accreditation credentials, and effects payments to them. The system also contains all the FAIS and FSB data required. The net commission available for payment to intermediaries is supplied by file from the KOM and CMS systems. AGT then calculates the commission payable after deductions for items like pension funds, medical

premiums and PAYE, plus any allowances and bonuses according to the specific contract the sales person has, and then makes the payment via the KOS system run by Multi-Data. Commissions are normally paid on a monthly basis, except for some brokerage houses that are paid weekly. To enable Epsilon to verify the credentials of intermediaries online, a daily copy of the AGT database is downloaded to a server in their environment.

The KOM system is a collection system for all commission credits and reversals generated by SPF and External Product Providers (EPPs) like Sanlam Employee Benefits (SEB), Sanlam Collective Investments (SCI), Glacier, Reality and Sanlam Trust. KOM manages the different commission term types mentioned above and calculates the available credit/debit for the AGT system. The Legacy POL commissions are received via the daily DAT batch files, while Epsilon and other EPPs build up transactions for KOM. The KOM system will only be decommissioned once all commissions generated by the Legacy POL system cease, or if a work-around solution is found to use the new CMS system.

In August 2006 the first phase of the CMS system was developed in Java, with the aid of TCS, to replace the KOM system. Initially a code-generating tool (Mastercraft) was used, but this was discontinued, as it was found that support from the supplier was a problem. The input screens were also developed in Java and web services were used for the transactions.

Intermediary support systems

The first quotation system was the mainframe-based MegKwot, implemented

in 1980, which included three elements: a LID (Client) transaction, which captured the personal particulars of the prospective client; a New Business (NUB) transaction, which captured policy details, for example life cover and premiums for the quotation; and a 'Tariff' (TAR) transaction, which collated the relevant information and printed the quotation. MegKwot handled individual life policies, and was later expanded to include MegPlan, which dealt with investment policies.

The introduction of PCs in the mid-1980s necessitated the development of a suite of supporting programs aimed at supporting the intermediaries in their service to clients. The suite was known as SANPAK and consisted of the following programs:

- ISABEL: a client administration program (including a database);
- PC-KWOT: a quotation program written in IBM Compiler Basic (in 1984) for all Sanlam Life's products, with the exception of investment products;
- PC-PLAN: a quotation program for investment products (written in Basic);
- SANTAX: a tax analysis program;
- SANNET: this functionality enabled users to connect via modem to Sanlam's network and to gain access to mainframe data via an Istel transaction;
- KEUSEGIDS: this menu program enabled marketers to determine which programs were available on their computers and how to activate them;
- SANTEL: this program facilitated a link to the Beltel program on the mainframe containing staff members' contact details;



- FINPLAN: a financial needs analysis program; and
- INVESTOR: for investment advice for retirement lump sums.

One of the main challenges was that MegKwot, which was developed on the mainframe, and PC-KWOT, which was developed on a personal computer (also MegPlan and PC-PLAN), had to provide exactly the same results to any given policy calculation. To address this challenge, mechanical testing programs were designed and developed to compare the outputs of the two quotation systems.

In 1994, the SanAdmin DOS program was introduced to intermediaries to replace the Isabel administration program. A year later, the SanAdmin Windows program was launched. It was the first Windows program for marketers to be introduced by Sanlam. The new program was more user-friendly and had more functionality than the previous DOS program.

SanQuote was introduced to replace both of the previous PC quotation systems that the financial advisers had made use of. This was a Windows-based development written in Visual Basic 6 (VB6).

In 1999 the Auto New Business (ANB) capability to seamlessly upload policy application data and signed PDF forms to the new business processes via e-mail was implemented. This capability catered for both the Legacy and Lamda environments. This entailed that the same data that was used to generate the accepted quotation was now being uploaded into the new business system. As a result, policy issuance was expedited, as it pre-populated the core input data to the new business systems. The signed PDF images were stored in

OnDemand. The Magnum underwriting application was added to the suite for occupational underwriting.

In 2000 the S.Net suite of applications was launched. This suite could be seen as a Client Relationship Management (CRM) system for intermediaries to enable them to provide a one-stop service to their clients. An important element was Spotlight, a South African product already being used by many intermediaries and Liberty, which provided powerful integration capabilities. The main features and benefits of Spotlight were:

- a database containing client and policy details;
- a powerful financial needs analysis program;
- an investment advice program, Investor, to aid in investment decisions and monitor a client's portfolio on a real time basis;
- a legal technical Counsellor Library; and
- compliance management.

These elements of Spotlight were integrated with the following Sanlam programs: Quotation Systems, SanTax (tax advice), SanTrust (wills), Alpha Investment Tool & Risk Tolerance Analyser (RiTA), Mortgage Analyser and the Brokers and Advisers Web (B&A Web).

An intermediary could also obtain consolidated policy and investment details from S.Net that originated at other participating financial firms and were made available in the Astute database – a crucial aid for needs analysis and financial planning.



In early 2000 the B&A Web was implemented, with a multitude of functions. The intermediary could obtain client portfolio statements, download forms, perform affordability tests and stop order reservations via QLink to PERSAL (Government payroll system), link to SanQuote for quotations, obtain their own commission performance figures, obtain daily prices and rates, compare rates and so on. The ASP Classic platform was the development platform of choice for the B&A website. From the outset, security was a high priority and was tightened over time as more transactions became available. The B&A Web was replaced by SanPort in September 2012.

In 2002, owing to a resource constraint in SPF IT, TCS was contracted as a stopgap measure to code the necessary input and output development in SanQuote for the Matrix quotations (see PBB below).

A synchronisation tool from Intellisync Corporation was introduced in 2002 to synchronise data and files via a staging server between the mainframe and S.Net. This provided the capability to update the latest client data to and from the main client file (LID), obtain management information and download the latest forms. Intermediaries could also use the staging server as a backup for all their data.

In 2006 SanQuote was rewritten in C#. The new SanQuote only catered for products on the Lamda/Epsilon platform. To cater for Legacy products (mainly life annuities), the existing SanQuote was renamed OfficeQuote. The premium black box (PBB) program performed the premium calculations for risk products in SanQuote, and for investment products the Alpha Calculation Engine (ACE) program was applicable.

Software Distribution

It has always been a headache to keep the intermediaries' PCs and later their laptops up to date with the latest Sanlam software (for their complete suite of programs), especially with the constant stream of new product releases. It could take anywhere from six to eight weeks before every intermediary had the latest software installed.

Once the programs were tested and prepared for installation, they had to be copied to portable media for distribution. The Distribution Operations department was responsible for making copies of the software for further distribution and installation. As technology improved, they acquired special equipment that could simultaneously produce a number of copies in one run. Each edition of software updates normally required a thousand copies.

Initially, 5¼-inch floppy discs (720KB of data) were used to distribute the software. Installation was a laborious task, as a 'read error' was often encountered and then the whole process had to be repeated. In 1987 the PS/2 line of computers became available, and these were fitted with 3½-inch stiffy drives (1.44MB). In 1988 Sanlam began using this format as well. At that stage, the PC-Kwot program needed six floppies, whereas only three stiffies were needed. A further complication was that intermediaries owned their PCs and therefore any new format could not be forced on them. New appointees or intermediaries who wanted to replace their PCs did, however, need to adhere to minimum standards. For IT, this meant that both size formats had to be catered for until all the PCs were on the set standard. (In 1992 both formats were still being



supported.) By 1999 compact discs (CDs – 700MB) were being used, also with the same phased-in approach mentioned above. Most of the new software updates could fit on one CD, but there were exceptions when two CDs were needed. In 2009 CDs were replaced with digital versatile discs (DVDs – 4.7GB), giving ample storage capacity. Different approaches were followed to roll out the software to the intended audience. Technical consultants in Sanlam's employ were positioned in all major centres throughout the country. These consultants were responsible for installing the software on the advisers' PCs and also at some of the larger brokerages. Broker consultants were responsible for ensuring that all the brokers they serviced had received the required updates.

Sales Support Consultants' (SSC) workstations were also linked to the Sanlam internal network, where software was automatically updated from about 2003/04 by IBM Tivoli until about 2008/09, when Tivoli was replaced with Microsoft System Centre Configuration Manager (SCCM). Once all the intermediaries are using the new web-based SanFin platform (see below), this process will become obsolete.

Project Saturn

During 2008, Project Berlin (a forerunner to Saturn) was established in SPF to investigate all the elements of support to intermediaries, including support by product providers, Distribution management, Distribution Operations staff and technology.

As part of the technology stream, all of the existing technology solutions provided to intermediaries were reviewed. Both

Sanlam's change from a life insurer to a broader financial services provider and pending legislative changes, such as Treating Customers Fairly (TCF) and Protection of Personal Information (PoPI) were taken into consideration. It was clear that many of the technology solutions provided to intermediaries were outdated and did not support the Sanlam strategy. In 2009 this revelation led to Project Saturn – a project dedicated to the renewal of technology solutions for intermediaries.

The core scope for Project Saturn was to find an alternative to Spotlight, the client management and financial planning solution used by intermediaries.

The first step was to agree on an advice strategy for SPF in order to identify the critical business requirements for the new solution. In addition, interviews were held with Sanlam staff and intermediaries to identify specific technology-related issues that needed to be addressed. Research from companies like Forrester and Gartner was used to determine potential solutions and provide a benchmark for best practice.

From the information gathered, it was determined that the complete solution would need to include:

- an intermediary portal with role-based access management from where all other applications could be accessed;
- a connected solution with a central client database for each intermediary practice; and
- some offline functionality to support intermediaries when working outside the office.

One of the core decisions was to use .NET as the development platform for the



different streams in the programme. To ensure that all development teams coded according to best practices, EOH Microsoft Coastal (Airborne) was appointed to set the standards and guidelines for .NET development.

Another decision was to use the existing IBM Tivoli suite of products for security and identity management, since the business required single sign-on for all users.

A common set of web services was developed to handle integration into other Sanlam systems. Additionally, a central audit-logging service was developed for forensic purposes.

SanPort

Development of SanPort, a web portal for intermediaries, started early in 2011 and was implemented in September 2012. SPF IT engaged Fireworkx, a user experience and interface design company, to ensure that the objectives of simplicity and consistency between applications were met. Fireworkx staff observed users in various roles using the old B&A Web and identified areas that could be improved. Today, SanPort also serves as the gateway to SanFin, SanQuote and SanTrust.

Microsoft C# was chosen for in-house development, utilising the Entity framework, AJAX and web service integration to existing functionalities in Sanlam. MS SQL Server was used for all database needs, while N-Cache was selected to handle distributed object caching.

As a content management system, the decision was made to use Kentico for ASP.NET to handle all the language switching and centralised content on the site. Google

Search Appliance was acquired to handle all the content searching.

For the first time, Sanlam also allowed the intermediaries' assistants and secretaries access with their own security credentials, through the development of the Miscellaneous User Management System (MUMS) and the Delegation Management System (DMS).

SanFin

S.Net, the intermediaries' client management and financial planning system, had become outdated and needed to be replaced. Three vendors were requested to submit proposals, namely Spotlight, Focus Solutions and Finantix. Spotlight and Focus Solutions were invited to participate in a Proof-of-Concept (POC) and in December 2010 Spotlight's Xplan was selected as the new intermediary client management and financial planning solution – SanFin. A subset of Xplan, Xlite, was used for the offline version.

Following the approval of the business case, the project to implement SanFin began in June 2011. Specific focus areas included:

- aligning the data rules with the Sanlam internal rules as a prerequisite for integration;
- integration with Sanlam back-end systems, including LID, AGT and MIS, using SOAP Web services;
- extending the Astute integration to allow for downloading of Sanlam and Glacier portfolios;
- aligning the look and feel with that of the other intermediary applications;



- improved investment planning support, with integrated fund data for portfolio construction;
- aligning the planning assumptions and portfolio construction methodology across the Sanlam group;
- automating proactive compliance monitoring for advisers under supervision. Xplan's internal workflow is used for channelling all the advisers' work to the supervisors for their approval and back again; and
- support for BlueStar practices where a group of intermediaries share their data and administrative personnel (using Xplan workflow).

A new risk tolerance assessment tool was developed for Sanlam by Oxford Risk and integrated into SanFin.

Upgrading SanQuote

Just after Saturn's inception, the requirement to web-enable the quotation application was added to the project's scope. This entailed a complete rewrite of the old SanQuote, including OfficeQuote (Legacy) functionality, with reuse of the existing calculation engines (ACE for Epsilon, PBB for Matrix) where possible. By taking this approach, the need for a six-week rollout via DVDs was eliminated and integration into SanFin was made possible.

Owing to bandwidth constraints, it was decided to web-enable Matrix Alteration Quotations prior to New Business quotations. Matrix Alteration Quotations went live in March 2014. The current plan (2014) will be to tackle risk products in early 2015, followed by the savings products, and then the remaining Legacy products by the end of 2015.

The new SanQuote application was developed in-house as a .NET MVC 4 project using Microsoft C#. The user interface was developed using a combination of HTML with JavaScript and third-party libraries like Knockout and JQuery. NHibernate was used as the ORM (object relational mapper) to handle all communication with a clustered MS SQL server. Windows Communication Foundation (WCF) provided the integration with web services, including Epsilon's web services for plan information. Spring.NET was selected as the inversion of control (IOC) container to integrate all custom-developed, as well as third party, components and to manage the life cycle of each object. Because the application was scaled horizontally, N-Cache was used to handle distributed object caching and second-level caching, as well as session state management.

A custom rule engine was developed in .NET to cater for all the changing business rules.

Magnum, the underwriting product from Swiss Re, automates the occupational underwriting, while Eloquence from Cincom generates the quotations in PDF format.

SanTrust

Sanlam Trust is responsible for the drafting of wills and trusts, as well as the administration of deceased estates. A replacement for its original SanTrust wills generation system, developed in VB6, became necessary. Additionally it needed to manage its risk associated with the sole proprietor responsible for the SanTrust Plus application. Several attempts had been made to replace these systems since 2010. Towards the end of 2012 it was decided



that it would make sense to include these requirements as a part of Project Saturn owing to the overlap between the user base and the requirement for integration with other intermediary applications. The SanTrust development was outsourced to Fireworkx with reuse of some SanPort utilities and shared components built for SanPort. The new online, web-based system was developed using .NET and C#. Fireworkx also replaced the old SanTrust Plus (developed in Delphi) used by Head Office personnel for more complex wills, with SanTrust Builder (also in .NET and C#). Implementation of both was due in the middle of 2014.

SanPort iPad app

An iPad app was developed to test the take-up of mobile applications by intermediaries. The initial strategy was to develop a simple application that would appeal to a broad range of users. This implementation was basically an electronic briefcase where an intermediary could store general documentation (for example brochures or forms) or client-specific documentation (for example quotations), but with the added benefit of being able to complete and sign electronic forms.

The first version went live in October 2012. At the beginning of 2014, more than 1 100 users had downloaded the application. The January 2014 release included the Oxford Risk Tolerance questionnaire, which is also available in SanFin. Some of the future enhancements planned include the integration of client data with SanFin and integration with SanTrust, including the ability to create emergency wills. In addition, extending the application to Windows and Android devices is also under investigation. JSON web services were used for the integration to back-end systems.

The SanFin suite of applications gave the intermediaries the ability to service their clients anywhere and at any time using online web technology for real-time sales and advice.

AstuteFSE (Financial Services Exchange)

In 1999 member firms of the then Life Offices Association (LOA) agreed to support the establishment of an electronic data exchange for the industry. The Financial Services Exchange (Pty) Ltd, trading as AstuteFSE (Astute), was established in April 2000. The specific purpose was to provide a single-point entry method whereby an accredited intermediary could obtain consolidated client portfolio financial data from a number of related financial product providers (initially Sanlam, Liberty and Old Mutual).

A co-sourcing partnership was arranged with Dimension Data in order to build the exchange and to integrate with the financial companies involved, to consolidate and aggregate the data, and deliver the data to the financial adviser. The LOA Intermediary register (hosted by AST) is used to control access by accredited intermediaries. AstuteFSE has a billing system to recover transaction costs from the intermediary.

Financial services companies use the ACORD Life Standard XML to present their data, ensuring that the consolidation and aggregation is on a like-for-like product basis (in other words, benefits with different names at different service providers that are essentially the same, are consolidated together). AstuteFSE acts as the South African representative for the ACORD standards. Access to Astute is either via a web browser on the AstuteFSE website or directly from a point-of-sale system (initially S.Net and later SanFin) via a web service.



The Astute system was launched in April 2001 as a mechanism that provides a single gateway to participating product providers to obtain data and consolidate and aggregate it for the intermediary. This data is essential for ensuring an appropriate financial needs analysis (FNA) is performed. When used with S.Net or SanFin, the data is automatically downloaded to the database and immediately available to the needs analysis program. This also assists the intermediary to comply with the legal requirements of the Policyholder Protection Rules (PPR) and Financial Advisory and Intermediary Services (FAIS) Acts.

Although the intermediary was still responsible for obtaining a broker's note (a document signed by the client authorising the financial institution to supply the requested data), it did not need to be submitted to the office involved. The intermediary had to declare that the broker's note was obtained and then could immediately request the data from the selected institutions. This led to substantial time-saving – in some cases up to two to three days.

The financial services providers also experienced large cost savings, as they did not have to keep a record of the broker's note and did not need a person to obtain a portfolio statement and to either fax, e-mail or post said statement to the intermediary. (The number of service requests to Sanlam for portfolio data just before implementation was about 50 000 to 60 000 per month. By 2013 this had decreased to about 6 000 to 7 000 requests per month.)

Leads

Intermediaries rely to a great extent on leads to procure business. These leads can be from people referring the intermediary

to friends or relatives, and from events at Sanlam that give them an opportunity to sell.

Initially the intermediaries had to rely on copies of correspondence of certain events that occurred in policies of clients they were servicing (events like maturities, surrenders and lapses). These servicing intermediaries were referred to as jockeys. In cases where the jockey left the industry, the client would become an 'orphan' as far as service was concerned. Clients were meant to be allocated new jockeys, but in practice the process wasn't too successful.

It was essential to identify and capitalise on leads and put proper mechanisms in place to manage the process to ensure that all leads were attended to. In 2000 an investigation was initiated regarding possible sources of leads. Existing business processes were identified that might be beneficial to the generation of leads. Leads were identified within certain events in the Client Contact Centre, for example when clients requested to speak to an adviser or have an additional beneficiary loaded. Events during the life cycle of policies are also used to generate leads, for example, disability claims, death claims and maturities.

Management around the leads was made possible through the monitoring aspect of the application. The jockey policy was revisited to ensure that leads were distributed accurately and fairly. After almost two years of investigations and discussions, the new Leads solution for Distribution (LDS) was implemented in March 2002. A survey performed in November 2003 clearly confirmed the value-add of this new initiative, although the challenge was, and still is, to get the users to use the system daily.

The application was built with an ASP front-end, using COBOL as integration to a DB2 database. The application uses a web service to access OnDemand for copies of maturity letters.

Many successful leads have since been populated into the leads database and converted, not only to Sanlam's benefit, but also to the intermediaries' and, not least, to the clients' benefit.

FAIS: Compliance Monitoring

The Financial Advisory and Intermediary Services Act of 2002 (FAIS) requires a key individual to monitor any advice given by tied agents or advisers. The term 'advice' refers to the product and financial advice that an adviser provides to a client. A 'key individual' is a person qualified to monitor whether the advice given is sound and applicable to the client's specific needs. Sanlam only takes responsibility for advice given by the Sanlam advisers. This implies taking responsibility for monitoring advice given by the advisers and having to keep record of the facts that the advice was based on. Brokers have to have their own processes in place. Sales arising from advice given by advisers that are accredited to sell third-party products (for example Santam, Old Mutual, AltRisk, Liberty) are also monitored by Sanlam.

The monitoring of advice by the key individual (referred to as a Quality and Risk consultant within the SFA hierarchy – QRS) is reactive. In other words, it happens after a product has been issued to the client. Supervisors (sales managers) perform proactive monitoring of the advisers before the application is submitted for issuing.

The FAIS system provides each QRS with a selection of 'cases' (products issued)

– predetermined filters supplied by the Compliance department perform this selection. The QRS can access all applicable documentation that has been scanned into the Document Management system at the time of issue. The QRS evaluates the product recommended versus the client's needs and risk profile. In the case of non-approval of the advice, the case is taken up with the adviser and his specific manager, and the applicable remedial action is decided upon by all parties. The monitoring results are fed to the MIS (Management Information System) that provides statistics and trends with regard to the advice given by advisers.

The system is a web-based application that is supported by .NET. The batch processing of information, in other words the adapters to the source, filtering and integration to MIS, is in COBOL. The data store is a mainframe DB2 database. As an experiment, a .NET web service was built to interact between the UI and the mainframe, but it was later removed, as it proved to be a maintenance nightmare and the concept was not aligned with SOA principles.

Maestro

In 2008 Sanlam Broker Distribution (SBD) launched a project (B# – B-sharp) to investigate the business need to assist the broker consultants (BCs) to move their focus away from relationship building to business building. The aim was to enable BCs to assist brokers in building their business, and in so doing, increase the Sanlam footprint as well as the productivity of the brokers. The BCs were assisted by sales support assistants (SSAs), who were employed to help prepare quotations, verify and complete application forms and submit new cases to the ANB process.



This software solution was called Maestro. IBM was chosen as the software partner to build the solution in Java on the Websphere Portal platform.

The system provides functionalities such as:

- single sign-on;
- seamless routing to other software solutions via this platform;
- activity management; and
- CRM for broker practices.

After implementation in 2010, Websphere Portal was found not to be appropriate for an activity management application. Maestro did not use any of Portal's features and, as such, it proved difficult to motivate paying the licensing costs of Websphere Portal. The system was redesigned and simplified in 2010/2011 to run on Websphere only and some functionality was removed to only include activity management and CRM for broker practices.

In 2012 SBD searched for a mechanism to allow brokers to perform self-service activities. The mechanism needed to be web-based, providing access to brokers that enabled them to request specific tasks from their BCs and/or SSAs. The web-based platform (called e-Hub) was built as a front-end to enable brokers to request preset actions from the supporting BC/SSA. These actions were integrated into Maestro by submitting activities into the system where the BCs would see the broker-submitted activities. This enabled the BCs to keep using their activity management tool while additional activities could be submitted via this self-service broker portal.

In 2013, with the implementation of SanPort, the e-Hub was re-evaluated and

rebuilt into the SanPort platform. The integration into Maestro remains and the brokers still submit requests for specific actions via this platform today.

In 2012, Sanlam Financial Advisers (SFA) was also seeking a solution to manage its compliance supervision practices (in other words, ensuring that novice intermediaries were following the correct procedures, such as a proper needs analysis and fit and proper advice). Maestro was chosen as a good fit to enable SFA to manage its supervision processes.

The Maestro system was customised to hold both SBD and SFA functionality.

The functionality that was included for SFA was:

- activity management (the same as that used by SBD); and
- adviser supervision record. This holds all the evidence required to manage the supervision of a novice adviser. This section is separate from the CRM on the broker side.

In 2014 the supervision of Sanlam Employee Benefits (SEB) products being sold by SFA advisers was also added to the Maestro system.

SanlamConnect

In 2005, an innovative new distribution model for the lower-middle market was introduced. It was based on a concept of automated advice for specific products. The objective was to open a Sanlam Kiosk in shopping centres in large metropolitan areas where clients could get automated advice, based on their risk profile, for certain basic products for retirement,



protection and savings via the Internet.

Consultants could assist clients, but could not give advice. Consultants would therefore receive salaries from Sanlam and would not be paid commission by clients. This was a brand-new concept in the life insurance industry and created a lot of excitement in the marketplace.

A second part of the model was self-directed and allowed clients to connect to the system via the Internet and obtain quotations and buy products without the assistance of an intermediary. The name given to this channel was SanlamConnect. Application development started in 2005 and it was implemented in October 2007.

Initially the project was externally managed by BB&D. After a year, Sanlam decided to bring the management of the project back in-house. A large contingent of people was externally sourced from BB&D and other independent contractors were hired to work on the project. Java was selected to develop the back-end and .NET for the front-end.

Unfortunately, SanlamConnect didn't penetrate the market at the level that was needed for success and the lapse rate was very high. The self-directed part of the model was also not successful for a number of reasons: for example, it wasn't marketed sufficiently and it was just too complicated, with a lot of fine print and security and compliance barriers.

In 2012 the decision was made to decommission SanlamConnect in 2013. The investment products sold via this channel had their own distinct investment funds. The cost of running an investment fund for a small number of clients was just too high

and all products sold were converted to use similar Epsilon funds.

Not all was lost though, as strategic components were established and/or further developed during the project's life cycle, for example TIM/TAM (strategic security component) and the Party (Client information) components that were reused in other projects.

Sanlam Direct

Sanlam Direct (SD) started as a department known as 'Verkoopsbevordering' – VKB (Sales Promotion) that extracted information from the legacy POL and LID records to supply the intermediaries with lists of leads. They used in-house-developed VKB programs for the extracts and printing of the lists for the intermediaries. A few weeks after the lists were distributed, a postal offer would be made to any clients that the intermediaries did not see or sell to. This was a mainframe-printed letter together with a pre-printed application form. Most of the products offered were investment-type policies, including retirement annuities (RAs). RAs generally had a strong take-up. Occasionally risk products were offered with limited cover, very often to clients who had a previously clean medical record.

In 1994 a form design tool (Elixir Design Pro) was acquired to facilitate, expedite and simplify the in-house design of forms, thus doing away with pre-printed forms. These pre-populated forms, together with a short quotation, were sent to intermediaries as an aid. Again, if there was no response after a few weeks, a copy was sent directly to the client. Sanlam decided to change the process of sending postal campaigns directly to clients with pre-populated



proposal forms and a short quotation, and simultaneously sending paper copies to the intermediaries. By 2007 the hard copy application forms were converted to electronic forms and posted on the B&A Web.

From time to time, campaigns also ran in popular magazines, but this practice ended when Policyholder Protection Rules (PPR) were introduced.

Until 1999 Sanlam Direct had a basic call centre where prospective clients could call toll-free for more information about products. In 1999 the Siebel CRM system was implemented, a couple of months before the SPF implementation in May 2000. This gave Sanlam Direct the capability to expand into telemarketing. Some advantages were that Siebel provided better management statistics and voice recording, and the application could be completed while the client was on the telephone. In addition, voice recording would ensure that all the legal requirements – FAIS, CPA, ECTA and PoPI – were met. (CPA and PoPI were introduced much later.)

In 2000 the CIM Data Warehouse was implemented in Sanlam. This development and later enhancements to CIM (like demographics) gave Sanlam Direct the ability to refine their selections. They also used external sources of data that complied with the Protection of Personal Information Act of 2013.

From late 2005 these capabilities led Sanlam Direct's management to aggressively expand their outbound capacity, resulting in a strong growth in sales. From mid-2009 they began using e-mails and SMSs as additional marketing tools, initially via Grapevine's messaging platform (for e-mails and SMSs) and in 2013 changed to SMS Portal as a provider for SMSs only.

In 2008 their business scope was expanded to include telemarketing Santam's short-term insurance products.

In October 2012 Siebel was decommissioned and replaced by Satrix in the Sanlam Direct environment. The PABX was upgraded in June 2013 to Avaya CM. This included a stand-alone Avaya stack that does predictive outbound dialling. Sanlam Direct implemented the Avaya PC5 Dialler functionality in June 2013 as a means to drive cost efficiencies.

Sanlam Direct uses SanQuote and the Epsilon administration's ANB functionality to sell risk products (Matrix). This includes both occupational and medical underwriting and quotations.

This distribution channel has expanded to a current (2014) complement of just over 130 telemarketing agents and contributes almost 10% of Sanlam Life's new business. The results prove that telemarketing agents are an important part of Sanlam's goal of providing both comprehensive products and service to their clients.

Online applications and user interfaces for Legacy systems

Sanlam's online systems date back to the early 1970s, when the first character-based online transaction capability (the so-called 'coded' transactions) was made available via teletype devices. The first Visual Display Units (VDUs) were introduced in Sanlam in 1974, while developers started using VDUs for the first time in 1975. (Further information about the establishment of Sanlam's computer network and the early days of Sanlam's online systems can be found in the previously published book '*Sanlam in die rekenaareeu 1958 - 1993*' on pages 102 - 109.) Here, the focus is on the various technical applications Sanlam developed to enable online transactions in the Legacy (mainframe) policy administration systems.

Introducing full-screen transactions

When the need for the first online programs arose, commercial products such as IMS and CICS were not yet available and Sanlam had to build its own control programs to facilitate communication between the user interface programs and the mainframe, and vice versa. The teletype machines communicated via VTAM, LU 2 (3270) protocol with the Message Control Program (MCP), which in turn invoked the relevant instance of the Message Processing Program (MPP), which invoked the appropriate application programs, such as POLO1 or LID01.

Teletype machines were popular until the early 1980s, when Wang mini computers became the standard end user device and multipage full-screen transactions could be developed for the first time. Although the Wang terminals allowed for visual interfaces, the architecture still allowed for the simulation of 'coded transactions', which implied that all the existing programs

could support the Wang interface without any impact. The Wang application also provided a new interface to Sanlam's rudimentary 'e-mail' message switching system (BDS).

With the introduction of the Wang system, the 'coded transactions' of the past, where information relating to the different fields on application forms was typed and separated by a '#', could then be implemented on a computer screen with a renewed user interface. This signalled the birth of multipage full-screen online transactions in Sanlam, where users could tab from one field to another on an application screen (without having to separate information with a '#'). Users could also scroll up and down in multipage transaction screens, resulting in screens being created to represent multipage business application forms.

After completion of the full-screen transaction, the transaction's data was sent to the mainframe as one data record for execution - a huge improvement on the



old way of doing things by sending the information character by character.

Full-screen online transactions were also developed for standard mainframe visual display units – the so-called VDU transactions that made use of the IBM 3270 protocol. They were, however, limited to the size of the screen (21 lines by 80 characters). IMS replaced the Message Control Program (MCP) in the late 1980s and the VDU transactions were then converted to IMS MFS screens. With the arrival of PCs in the mid-1980s, VDU transactions were enabled through a PC application that emulated VDU devices.

Istel

In 1985/1986 Wang LVP computers at Head Office were replaced by Wang VS machines. The shortage and discontinuation of Wang computers gave rise to the use of personal computers, resulting in the development of the first version of Istel, which was developed in PC Assembler. Istel made use of the new LU 6.1 application-to-application protocol for transmitting data over the network. At about the same time, the MCP was replaced with IMS and the MPPs (TEL02) executed as Batch Message Programs (BMPs) under IMS. The reason for the replacement was to prevent major changes to the architecture and working of the MPP and its downstream business applications. Online transactions that made use of MFS screens ran under Message Processing Regions (MPRs). Group Benefit's ADF programs also made use of MPRs.

When OS/2 arrived in the early 1990s, Istel was redeveloped. The new Istel2, as it was known, was initially developed in C and later in C++ using Sanlam's own development toolkit to cater for multiple

run-time platforms, in other words, to be deployed on DOS, OS/2 and later on Windows. Istel2 made use of the enhanced LU 6.2 protocol and still supported the original coded transactions and message switching. Sanlam's Interactive Transaction Administration system (Sanita), a system used by the administrators to create and maintain definitions of the various full-screen transactions for Istel, was developed in C under OS/2 Presentation Manager as a graphical CUA-based system. Another 'technical' application, Update, was developed to distribute and update the applications to the end-users' PCs. Update made use of MIX, an in-house-developed program that facilitated file transfers between the central server and the PCs. Update was replaced by AM:PM, a commercial software distribution tool, in the late 1990s. Today, Microsoft SCCM is used to manage the various versions of software on workstations. MIX was also later replaced with commercial file transfer (FTP) software.

In the early 2000s both Istel and Sanita posed 'technical debt' risks to the organisation with respect to the language skills required (C and C++), and an outdated platform (OS/2 Presentation Manager for Sanita). A complete rewrite of Istel and Sanita was required, as no commercial products capable of rendering the required functionality could be found. Istel2 was redeveloped in Java during 2004/05 by BB&D and included the change from LU6.2 to TCP-IP as the network protocol. The new application is known as Jistel. This also heralded the end of the in-house-developed multi-platform toolkit. Sanita was redeveloped in Java during 2012 by Zensar, thereby removing the requirement to cater for outdated OS/2 Presentation Manager emulation, which was only available under



outdated, unsupported and unsafe Windows platforms.

SANNET

In the mid- to late 1980s the online transaction capability was extended to Sanlam's advisers and some brokers by providing an additional interface application, called SANNET (Sanlam's network system). SANNET was developed to connect with Sanlam's Wang VS system over the dial-up telephone network. This enabled relevant online transactions to be executed directly rather than being requested from a branch or sales support office. The B&A Web application replaced SANNET and was, in turn, eventually replaced by SanPort (Sanlam's intermediary portal on the web).

Other online architectures

In the late 1990s, an investigation was launched into the replacement of the Legacy policy administration system. The Lamda system was purchased as an additional policy administration platform

in 1999. Lamda was a two-tier application running on Windows. It became the new generation system for Stratus products, while Legacy products were still administered by the mainframe systems, using Istel as the user interface. Epsilon replaced Lamda in 2012 as the new online policy administration system.

Business units other than Individual Life used IMS MFS screens or Datacom/CICS to provide online transaction capabilities for applications such as PEN (Employee Benefits), PAY (Personnel), SHR (Sanlam Collective Investments) and BBS (Investments).

Nowadays, Sanlam does not develop any new online systems on the mainframe, but the existing transactions are made available through web services to the new PC- and web-based front-end applications such as Sentrix, Epsilon, SanPort and Client Portal.



Client Contact Centres: Then and now

In 1996 Sanmed, Sanlam's original medical aid scheme, implemented a call centre and its success led to Sanlam Personal Finance starting an investigation, with the aid of Accenture, into the feasibility of using call centres. The main business drivers were cost savings and fulfilling the dream of a one-stop service to clients. The cost saving came mainly from the closure of certain branch offices and the centralisation of personnel training to achieve a standardised level of competency. The fact that SPF was far advanced in the use of electronic document management that made paper files redundant meant that service personnel could be situated anywhere.

Two call centres were implemented, one at Head Office and then in May 2000, one in Johannesburg. One of the advantages of the Northern call centre was that it could act as a backup for the Southern call centre. In 1999 SPF implemented the server-based Lamda policy administration platform, with the result that the Northern call centre had to re-route all Lamda-related enquiries to the call centre at Head Office. As the sales volumes on Lamda increased, the volume of work that could be handled in the North declined. It was decided to close the Northern call centre in 2004.

Over the years the call centre developed from a telephony-based solution to a fully-fledged client contact centre (CCC) servicing clients and intermediaries. Today, the CCC handles all service requests received by telephone, fax, e-mail and post. The non-telephony requests are received at the Mail Distribution Centre (MDC), where they are captured and routed to appropriate service agents. The volume of requests received via the MDC and by telephone is more or less evenly spread.

The launch of the first call centre

The Sanlam Life Call Centre was launched on 7 December 1998. The first call centre system, commonly referred to as the Legacy Call-in Layer, was developed internally as part of a project that commenced in 1996 under the Finpro programme. The Legacy Call-in Layer offered basic computer telephony integration (CTI) and allowed call centre agents (CCAs) to take calls, record certain basic information relating to these calls and track workflow at the same time. As there was no direct integration to the document management systems, ImagePlus and OnDemand, at the time, the CCAs had to 'Alt/Tab' to the Enterprise Information Portal (EIP) to retrieve documents.

Initially the call centre technology platform consisted of:

- PABX (Private Branch Exchange): Nortel 81C which was the entry point for incoming calls;



- PABX CCR routing to direct calls to the correct CCA;
- Racial recorders for recording and archiving all conversations;
- IVR (Interactive Voice Response): IntervoiceBrite, which enabled the client to navigate via menus and prompts to reach the appropriate CCA; and
- eWorkforce Management, for managing the CCAs' shifts.

TDM Analogue and Digital were the telephony protocols that were used.

Implementing Siebel

In 1999 Siebel was introduced for use in the call centre in the Sanlam Direct environment. Telephony support was originally provided by Merchants, followed by BSW in 2000 and eventually by Dimension Data. Sanlam Life implemented Siebel in May 2000 once the Y2K transition on the Legacy Call-in Layer had been concluded. Dimension Data was the local Siebel provider.

Siebel was a single interface program that integrated to all the other source programs like POL and Lamda, so that the call centre operator could answer most questions that the policyholder might direct to him or her. Siebel offered many benefits, including IVR capabilities and the ability to gather customer relationship management (CRM) data for the first time. Siebel used a UDB database on AIX and integrated to EIP via Servlets. The CCAs still had to 'Alt/Tab' to OnDemand until 2004, when Servlets were introduced.

Siebel was a package that had to be upgraded regularly to ensure ongoing support and to make provision for database upgrades. In 2003 SPF began working on

an upgrade from Siebel 5 to Siebel 6, which turned out to be a complex and expensive undertaking. The upgrade took nine months to complete, and during that period no business-as-usual changes could take place, which was very frustrating for IT and the business. This experience forced SPF to investigate other options that could replace Siebel.

Enhanced EIP facilities

In 2002 Direct Image Viewer, an in-house developed VB6 application that enabled users to store images (TIFF, PNG, JPG and GIF) directly to Content Manager in TIFF format, was implemented.

In 2006 Direct Scanning, also an in-house-developed VB6 application that gave the user the ability to store a Microsoft Word document to Content Manager, was implemented. A Microsoft Word Macro was written (VB Scripting) to capture the relevant index information and then the Word document with the index information (as a text file) was copied to a 'file share'.

From there, an application polled this file share, transformed the Microsoft Word document to TIFF format and stored the document to Content Manager.

Direct Image View and Direct Scanning applications were eventually converted from VB6 to .NET.

Technology upgrades from 2000 to 2004

The following call centre technology platform upgrades and replacements were completed between 2000 and 2004:

- call routing: Genesys queue call routing replaced the PABX CCR system;



- for conversation recording, the Sanlam Direct CCC migrated to NICE; and
- eWorkforce Management was upgraded to perform peak-time forecasting and scheduling for the CCAs.

Sentrix

After four years of planning and development, Sentrix was implemented successfully in February 2008 in the Sanlam Life Call Centre as an 'as-is' replacement for Siebel. Sentrix was a home-grown solution developed by the SPF IT Development team in conjunction with TCS in India. Sentrix was the first big service-oriented architecture (SOA) project and offered many advantages, including that the database could be upgraded independently of the front-end user interface. In addition, it could be rolled out to other business units within the Sanlam Group, like Policy Administration and Claims (PAC) and Death Claims, without incurring any licensing costs.

Sentrix was developed in Java and was implemented on IBM's WebSphere Application Server (WAS) and WebSphere Process Server (WPS), which enabled the use of web services. By 2012 all Servlets had been replaced with web services.

Unlike Siebel, Sentrix is very light on network use and it was successfully rolled out to Sanlam Namibia at the end of 2011. The Sanlam Direct environment also migrated to Sentrix in October 2012.

This capability also introduced Sentrix to the Client Service Centres at the regional offices, while smaller Client Help Offices have a direct telephone line to the CCC for clients.

Technology upgrades from 2005 to 2011

The call centre technology platform upgrades and replacements between 2005 and 2011 were as follows:

- PABX: Nortel CS1K replaced the 81c model;
- call routing: Genesys was upgraded to include skills-based routing;
- telephony protocol was upgraded to include VoIP (Voice over Internet Protocol);
- all conversation recording was moved to NICE. Racal was retained for previously archived cases; and
- eWorkforce Management was upgraded to include Real Time Adherence (RTA) to track the adherence of CCAs to their schedules.

Large-scale renewal from 2012 to 2014

Avaya acquired the Nortel company in 2009, which led to the replacement of many of the call centre technologies with Avaya components over time. The following call centre technology platform changes occurred between 2012 and 2014:

- PABX: Avaya;
- call routing: Avaya AACC replaced Genesys;
- telephony protocol: Combination VoIP & Session Initiation Protocol (SIP). The architecture was designed to handle multimedia like e-mail and SMS, as well as social media such as Facebook and Twitter, although only the former was implemented.



- IVR: Avaya AEP (Avaya Enterprise Portal) replaced IntervoiceBrite; and
- eWorkforce Management was upgraded to include Empower to enable CCAs to swap shifts, book leave and so on. The schedules were published to the CCAs' Outlook calendars.

Telephony support for the implementation of the Avaya components was provided by Jasco Enterprise.

Collaboration with Santam

The telephony hardware at Sanlam Head Office in Bellville has been shared with Santam since 2008/2009 (including their Bloemfontein and Tyger Valley offices). Santam has its own CRM application (Microsoft Dynamics) to handle their client service requests. Santam also has a site in Johannesburg (Auckland Park) where the hardware is shared with Sanlam SKY (emerging markets).

Mail Distribution Centre (MDC)

The MDC COSMOS application was developed in VB6 in 2000 by Sanlam IT staff. This application was able to classify and index service requests that the call centre received via e-mail, fax and post, and subsequently link these requests to a specific client. The application also allocated work to CCAs based on their level of expertise and 'rights' on the system. So, for example, debit order requests would only be channelled to an agent who was authorised to deal with debit orders.

The COSMOS application was also able to automatically handle requests for information (RFIs) by placing the service request on hold until the client had provided the relevant outstanding information. Once the information in

response to the RFI had been received, the application would automatically activate the service request again.

Inbound request process for post, e-mail and fax

E-mail and faxes (via RightFax) are directly monitored by InputAccel (a workflow tool from Waymark). Postal requests are manually scanned into InputAccel. The in-house JHH (VB6) program is used to classify and capture data pertinent to the request and index the request with metadata so that the MDC can log the service request. In 2007 InputAccel was replaced by Kofax (supplied by Highbury).

Replacing the MDC application

The renewal of the MDC application, written in the outdated VB6, was first considered in 2011. However, it was put on hold for a year until the new roadmap for the business became clear. Stage 1 of the MDC renewal commenced in late 2012, and the project was completed in 2014. This change coincided with the telephony environment's move from Genesys to Avaya.

Business value

The professional quality and speed of service that the CCC delivers has won it numerous awards at an international, national and provincial level. These include Contact Centre National Group (CCNG) 'Centre of the Year' in 2000 and 2003, and in 2002 Boston Consultancy selected the CCC as one of the 10 best in the world. The CCC continually benchmarks its performance and capabilities against the best in the industry. This results in an ongoing cycle of technology expansion, replacement or upgrades in order to remain comparable with the best.



An additional highlight was when Sanlam IT packaged and offered a call centre service capability in an official tender process to Santam, which resulted in the sharing of infrastructure between Sanlam and Santam. This was a first for Sanlam's IT organisation.

Today the call centre infrastructure supports nine call centres, two of which are outbound call centres.



Supporting systems



The third section of this book deals with the technological advancement in the business administration area of Sanlam. The collection of premiums and payment of claims are at the centre of Sanlam's business and a major focus was placed on the automation and optimisation of processes in this area. In the late 1980s, Sanlam had close to four million paper files, filled with client information, which brought to the fore management and storage problems of client data. Fortunately, electronic document management technology was able to help solve this growing problem. Part of the solution was to scan all incoming correspondence which was then expanded to include outgoing correspondence.

Later, in the 1990s, forms were also digitised, simplifying the sometimes cumbersome administration process. At the same time, the financial and accounting processes were supported by a new technology solution, which in turn coincided with the move from a paper-based management report arena to electronic data warehouses.

Today it's hard to imagine a world without PCs, laptops, spreadsheets, word processors and e-communication. These technological advancements went through an intense development process until standardisation took place on Microsoft technologies.



Money provisions and money movements

Collecting premiums and paying benefits is at the heart of Sanlam's business. Over the years premium collection has evolved from cash and cheque payments to mostly automatic payments via debit orders. The payment of claims and other benefits evolved from handwritten to computer-generated cheques, which made way for automated payments and direct payments into clients' bank accounts. Given the general requirement in Sanlam's business units to receive money and to make payments, a number of reusable systems were developed. These systems can be grouped as money collection and payment systems. This section focuses mainly on systems in Sanlam Personal Finance, with limited references to other business units.

Premium collections in SPF

Most of SPF's premiums are received in cash or via cheques, debit and stop orders. Clients can also make use of electronic funds transfer (EFT) payments directly if they specify the correct deposit reference number. Money collection in SPF takes place via the following systems:

- KAS handles the limited amount of payments that are still made in cash and via direct deposits. KAS is geared to distribute any receipts not only to SPF, but also to various other product providers such as SCI, Glacier and Reality,
- DEB (Debit Order System) and DIS (Debit Collection System) handle debit order processing; and
- SSO (Sanlam Stop Orders) handles stop orders.

Cash and cheques are received at branch offices and at Head Office. Until 1985

receipts were manually captured on the mainframe KAS system. A PC system (PCKAS) was developed for issuing receipts, for daily balancing and for sending a file to Head Office (via MIX – an internally developed file transfer system). This file served as input to the mainframe KAS system for direct distribution of credits to product providers via the unique reference number that identifies the product and the product provider. Later, in the 1990s (1998/1999), all cash collections were 'outsourced' to Absa, and then later also to FNB and, more recently, to Standard Bank, mainly for security and cost-saving reasons. Cheques still received by mail at Head Office are deposited at the Absa agency in Head Office and then follow the same process as other deposits.

The bulk of Sanlam's recurring premium income is received via debit orders. A debit order is a mechanism whereby a client gives Sanlam the authority to draw money from their bank account on a regular basis and on a date they have selected themselves.



The original DEB system was developed in the 1970s to collect money for the payment of premiums on Sanlam policies. Multi-Data also ran this system as a 'bureau service', providing debit order collection services to many external companies such as municipalities and other insurance companies. In Sanlam Life's administration systems, multiple debit orders for the same bank account and the same date are bundled together to save on banking fees.

As DEB was primarily a batch system, and tightly integrated with Sanlam's 'Vervaltrek', submissions could only be made once a month. Magnetic tapes containing collection details were prepared by DEB22 and then delivered to ACB and BDB for processing by the banks and building societies. In the early 1990s, DEB was partially replaced by a new system known as DIS. This enabled a more streamlined service to external clients who made use of Multi-Data to process their debit orders. One of the significant benefits of the new system is that multiple submissions can be made throughout the month, as there is no longer a dependency on 'Vervaltrek'.

Since the unbundling of the legacy POL system in 2000/2001 the debit order run (DEB) was also changed to incorporate daily runs via DIS.

Stop orders are a method whereby policy premiums are deducted from a client's salary by his or her employer. The employer transfers the net amount of premiums payable on behalf of its employees to Sanlam. The employer reports movements such as commencement of premiums, changes in premiums and resignations in an accompanying schedule. Once this schedule is balanced by Sanlam's Stop

Order department, the monies are applied to the respective policies or investment plans. The original Stop Order system (AFT) which was the very first system to be developed in COBOL (in 1978), was replaced by the Sanlam Stop Orders (SSO) system developed in Cool:Gen in 1998. Stop orders are a stable form of collection because the premiums are deducted from a payroll and only cease when the employee leaves employment. About 20% of policies are paid using this method, of which 80% are from government employees.

Payment provision systems

Sanlam, as a financial institution, pays benefits to thousands of clients and beneficiaries every day. The calculation of benefits is a complex process involving calculations across two policy administration systems as well as the calculation of tax in certain cases.

Payment provisions from the policy administration systems take place via the following systems:

- **PEP:** Handles the assessment of claims for disability, trauma, impairment benefits and so forth, and releases the payment where a claim is granted;
- **PMT:** Handles recurring payments for life and term annuities;
- **CLM:** Handles the assessment of death claims. Approved claims can either be paid directly, or for some products an annuity is issued that will be paid by the PMT system. Tax directives are obtained via e-IRP;
- **GPS** is a generic payment system that can be adapted for any type of payment. In 2002 it was decided to



develop a reusable payment management system in COBOL that could cater for immediate, delayed and recurring payments. CLM was the first system to use this functionality, followed by the FAS system in 2009;

- CIS: Calculates any PAYE deductions for taxable payments; and
- FAS: RA Fund benefits administration.

The CIS and FAS systems are described in more detail below.

CIS: Tax calculations

As a result of an amendment to the Income Tax Act, life companies paying term and life annuities to clients were compelled to deduct PAYE on the combined income of the portfolio of annuities per fund that the annuitant possessed, applicable from the 2002 tax year. This meant that the Lamda/Epsilon and Legacy platforms needed to integrate to a system that could combine payments and calculate the PAYE deduction required and remit said amount to SARS. This integration included movements (new business, surrenders, death and disability claims) from the two policy administration platforms. Annuitants could also obtain a tax directive (IRP3) directly from SARS themselves to override the PAYE tables to a lower PAYE amount (for example, in case of a trust fund). The annuity payment systems interact with CIS to ensure that the correct PAYE is withheld. Cool:Gen was selected as the development tool and the system was delivered at the end of September 2001.

FAS: RA Fund Administration System

During 2007 additional legislation on minimum and maximum values per

fund impacted the calculations of the exit transactions (early and normal retirement, emigration, termination and Section 14 transfers) on RA, provident and preservation funds. Example: One-third of the maturity value, to a maximum of R75 000 per fund (including previous maturities), could be taken in cash. The FAS project was launched in two phases in 2008 to address this requirement, with full implementation in August 2010.

The FAS system was developed in COBOL on the mainframe to seamlessly obtain policy data and values from both the Legacy and Epsilon platforms and to apply the numerous rules and combinations thereof. The FAS system was the first to use the Sentrix platform as the presentation layer to enable Call Centre Agents to seamlessly interact via Web Services to both administration systems.

Payments

Once payments are provisioned there is a final step required in the process before the actual payment can be made. In the past this step was the printing and dispatching of cheques. More recently this has been replaced with the preparation of information to enable direct deposits into clients' bank accounts.

Until August 1998 all payments to Sanlam's clients were made by cheque. This was an expensive method that was also open to fraud, resulting in very stringent controls being in place. With the advent of EFTs it was decided to replace the issuing of cheques with the Direct Electronic Payment (DEP) system, which allowed the POL administration system to run payments twice daily via Multi-Data's KOS system. This functionality is also used by the Epsilon

administration system, where integration takes place via the PIG system.

This resulted in better client service, as the client could receive the payment into his or her bank account within a maximum of two days, independent of postal delivery. In 1998, the direct saving to Sanlam was R12 per transaction and within three months volumes had exceeded 40 000 per month.

The recurring payments for annuities and certain disability claims (PMT) used a mix of direct bank deposits via the KOS system and cheques until 2006, when the use of cheques was discontinued.

Electronic payments are made via Multi-Data's KOS system, which effects payment directly into bank accounts via Interchange.

The KOS system was originally developed in parallel with DEB and provided an automated means for payments into customers' accounts. This functionality paved the way for the reduction and eventually the elimination of cheques. Multi-Data operated KOS as another bureau system since the 1980s, when it was used extensively for the payment of salaries processed by the bureau's salary/payroll (SOL) system. KOS is also used for other electronic payments such as Sanlam's own employees' salaries.



Document management: Towards a paperless environment

Imaging of incoming correspondence

By the late 1980s the sheer volume of paper documents was becoming unmanageable, with close to 4 million paper files in the strongroom and up to 200 000 in circulation in the various departments. This led to files going missing and being incorrectly filed, and duplicate files being kept at Regional Head Offices (RHOs). Coupled with this, the strongroom was also running out of storage space and it was fast becoming an imperative to enlarge it.

At this point, electronic imaging was still in the development phase and, as scanning could take up to 40 seconds for a single A4 page, it was not a feasible solution, especially considering the volumes required.

By 1989 IBM brought out ImagePlus390 as a solution to the problem. ImagePlus, together with the Folder Application Facility (FAF) component, had the capability of storing images and linking them to the policy record on the mainframe. Scanning speed greatly improved to between 30 and 40 documents per minute. FAF also allowed for the imaged folder to be sent to either a pool of users or to a specific person. This was a huge benefit, as multiple users from different departments were then able to view the same documents without having to wait for a physical file.

Proof-of-Concept (POC)

In July 1991, a three-month POC project was trialled in the Death Claims department to investigate the feasibility of a paperless environment. It entailed the electronic scanning, distribution, retrieval, processing and storage of information in a visual format. The Claims department immediately reaped the benefits and insisted that the POC become the standard process. The findings from the POC were as follows:

- productivity could be increased by 10%;
- turnaround time could be reduced by an average of 50%; and
- service levels could be drastically improved.

ImagePlus roll-out

The New Business process was the obvious candidate for the roll-out of ImagePlus because it made use of many documents, such as proposals and medical reports. As part of the roll-out, the regional offices were equipped with scanners and Electronic Image Processing (EIP) workstations so that the underwriting and issuing processes could start immediately. FAF also allowed the Underwriting department to send images of proposals and medical reports to reinsurance companies for quotes in cases where medical loadings might be needed.



At the same time a 'back scanning' process was implemented at Head Office, whereby any paper files that were requested were first scanned to eliminate the need for paper. Over time, the content of all the files was scanned and replaced with images.

One of the limitations of ImagePlus was that it could only store documents in MO:DCA format, so IBM brought out a new product called Content Manager that was capable of storing many formats such as e-mail, PDF and fax. The transition from ImagePlus to Content Manager took three years and was completed in 2007.

Initially InputAccel was used to enable the document capture process. Faxes received were first printed on A4 pages, then scanned, indexed and stored in ImagePlus. The introduction of RightFax enabled the business to receive faxes electronically directly to Content Manager.

EIP enabled the mail distribution centre (MDC) to store any type of incoming mail/requests and funnel those requests to the correct person or pool of people doing similar work. The use of EIP resulted in mostly a same-day service at the Client Contact Centre (CCC) and an average New Business turnaround time that was a third of the previous time.

In 2013 there were 600 million documents under electronic management, with an average of 100 000 document view and store requests a day.

Optical Character Recognition (OCR)

In order for Sanlam to receive permission to move ahead with demutualisation, the policyholders, who were essentially the company's owners, had to vote for or

against the proposal. A subset of OCR, known as Optical Mark Recognition (OMR), was used to capture these responses.

Following the finalisation of the legislation process and the calculations for the share allocations, OCR was used to capture the data from the returned application forms.

Further to the above, OCR was used in a number of processes, such as applications by policyholders for surrenders and loans, and for direct marketing purposes. Around 2002 the OCR processes were discontinued, as they did not provide the necessary productivity improvements. In 2005/2006 a POC exercise was undertaken with newer technology, but the results were not encouraging, with the result that OCR is no longer used as a technology solution within Sanlam.

Enabling other business processes

Managing incoming documents has been a challenge. However, effective use of imaging and scanning technology has seen a move from a manual paper environment to an electronic one with many added benefits, including improved customer service and greater speed of processing. More importantly, without EIP technology the CCC as we know it today could not have been established.

Outbound documents

The correspondence (KOR) system was the original system, developed in Assembler, to produce printed general correspondence such as letters. When a transaction occurs in the online system (POL) that requires correspondence to the client, a record is written to the batch environment (DATSX).



The KOR system then formats a document using the event code and the attached copy of the policy record for the required variable data, then retrieves the correct paragraphs from the KORSO database (BDAM) and prints the document. Before the advent of the database in 1981, the paragraphs were 'hardcoded' in the programs. This development also made it possible to print online letters at branch offices using Wang terminals.

Initially a hard copy was also printed to be filed in the policy file stored in the strongroom. In 1985 it was decided to move away from a hard copy-based system, and a history database (VSAM and later DB2) was created to carry enough data, such as document number, paragraph number and version, the variable data and dates to enable the re-creation of a letter.

Introducing electronic document imaging for outgoing correspondence

Traditionally, copies of important documents and reports were stored on microfilm or microfiche. These technologies became outdated and in the early 1990s were replaced with a product called RSD Folders. ImagePlus was implemented shortly afterwards and since then copies of the letters have been stored electronically. When ImagePlus was replaced by Content Manager in 2006, the existing images were transferred to the new repository. In 2001 a new repository, OnDemand, was acquired, but only for new cases.

Even though very few letters are still produced by KOR, the history database carries a shortened entry for MTEXT-generated documents so that administrative staff can see which

documents were produced on any policy enquiry without having to go to the current document archive.

The CCC application (Sentrix) also displays this shortened history and, by using a web-service link, the agent can view the full document (with the option of reprinting, faxing or e-mailing the document). The previous CCC application (Siebel) did not have this capability.

New Business contracts

New Business and policy alteration contracts, issued on the Legacy system, were printed in duplicate during the daily batch run until the implementation of MTEXT in late 1997. The old system (NUB73) does not have a repository such as KOR and all the paragraphs were hardcoded in the programs.

With the advent of the implementation of ImagePlus in 1994/1995, all New Business contracts were stored there. ImagePlus was replaced by Content Manager in 2006 and in 2011 OnDemand was acquired for new cases. Contracts on Content Manager can still be accessed by means of a special viewer.

Initially the Lamda system's contracts were printed by the Lamda Print Engine (LPE). This solution has been replaced (except for a couple of older product alterations) with an MTEXT solution similar to the one that is used for the Legacy system.

MTEXT

To enable faster roll-out of new life products, a printing solution was required that could be configured by business people themselves. Sanlam acquired MTEXT from Cincom Systems (UK)



Ltd during 1997 after conducting a comprehensive evaluation involving MTEXT, Compuset from Xerox and CSF Designer. Through the use of MTEXT the document production times are drastically reduced and it facilitates central control over document format and content. Signatures and 'overlays' (company logos, contact details and templates) known as Advanced Function Printing (AFP) resources were stored separately in RSD Folders. (OnDemand (DB2) replaced this in 2000.) Only one copy of a resource is stored and reused when a document is re-created.

When a document is generated, the full content image (excluding the resources) is stored in OnDemand. Documents produced for the Legacy environment also have an entry in the KOR history (see above).

In 2005 the printing of BONBEL statements and tax certificates was outsourced to Lithotech (now Bidvest Data) for the first time. In January 2009 all production

printing was outsourced to them. Where documents are e-mailed, the services of Email Connection (EMC) – also part of Bidvest Data – are used, except for new business contracts that have been serviced by Striata since 2013. All undelivered e-mails are returned and hard copies are printed and posted. Those e-mail addresses are then deactivated on the Client member database (LID).

MTEXT upgrade 2014

MTEXT has been in use in Sanlam since 1997 and is the cornerstone of many of our printing solutions. It is currently supported by ITISS. At the time of writing this book a project was under way to replace MTEXT with Eloquence, the new server-based product from Cincom.



Sanlam forms go green: From paper to digitised

Very few businesses in the world can operate without collecting client information, and for capturing this information there is usually a form. Sanlam has always had a need for forms. These were paper forms that were pre-printed and kept as stationery stock items, and of course they had to be filled in manually. In the 1990s Koerikai designed and printed these forms.

In 1999 the first step was taken to use PDF forms. Unfortunately, this took place on a departmental level, where staff had no knowledge of set standards for specific styles and alignment with Sanlam's brand.

In 2001 Business Solutions appointed a specialist to control the forms design process. The first step was to standardise the new business application forms and produce a fillable PDF form. Other departments realised the benefits of standardisation and within three years all forms were redesigned and 75% of them were fillable.

In 2002 the Sanlam forms environment experienced quite a revolution, as it moved from manual to electronic and then to intelligent forms. Manual forms are PDF file formats that are printed and filled in by hand, while electronic forms are enhanced with fill-in fields that can be filled in on a PC, but still need to be printed. Intelligent forms, however, are user-interactive forms that contain validations for calculations and can do 'look-ups' to databases (for example, ID numbers). An intelligent form can be submitted either as XML data to a specific online source, or as a complete form and encapsulated data file via e-mail.

As for Sanlam, intermediaries use forms to capture all relevant information, from

product applications to maintenance and claims, not to mention the stacks of forms needed for compliance and regulation purposes. It is quite a time-consuming process. In the various back-office processes, from New Business to Policy Administration and Claims, client administrators rely heavily on information filled in by clients on forms. Since there are so many ways in which forms are used, they represent a communication format with an enormous audience. An effective form demands significant engineering from the design to the user experience and, at the same time, needs to be a cost-effective method for business.

In the late 1990s most of Sanlam's forms were still in pre-printed paper format. The first step to move the form landscape to the electronic era was to create the forms in PDF file format. However, these forms offered very little value beyond the fact that the files could be saved on systems, on PCs, and be e-mailed. Above all, they still required printing and filling out by hand and had to be submitted either by fax or slow mail.

In 2000, PDF forms with fillable fields slowly started to emerge. By 2003, most forms were enhanced with the ability to fill in on screen. The form files were stored in



a Lotus Domino database, which became known as the Sanlam Forms database. Meanwhile, deployment of the forms used by intermediaries was managed by S.Net through manual installs and updates performed by S.Net synchronisation. The total number of electronic forms available in 2005 on the Sanlam Forms database amounted to 600. Currently (2014) more than 1 500 forms are hosted on this database on behalf of all the Sanlam business units.

Depending on business requirements, three different form types are developed by the SPF IT Forms Development team, namely electronic, interactive and intelligent forms. Electronic forms are static forms created by Adobe Acrobat, and are enhanced by a variety of forms fields that can be completed by any PDF tool that supports form filling. On the other hand, interactive PDF forms are stand-alone user interactive forms where all the validations of the form fields are embedded in the PDF. These forms are developed in Adobe LiveCycle Designer. Acrobat JavaScript is used to manipulate the data in the form fields and to tie form actions, for example submit or e-mail buttons, to export form data in XML format to back-end systems, or to generate an e-mail to which the completed PDF is attached.

For automated processes, where data is exchanged between the PDF form and back-end systems, intelligent forms are developed. Intelligent forms are dynamic and can be manipulated to the required business logic. Adobe LiveCycle Designer is used to construct the elements of the forms in a structured XML schema. Acrobat JavaScript is used for development of the form data handling functionalities in the PDF form.

The PDF forms can be used on any PDF form-filling tool on PCs and Apple Macs, as well as the operating systems of modern-day mobile devices.

The IT Transformation (ITT) project in 2007 recommended that the Forms Development team that reported to Business Change would be better positioned in SPF: IT Development, under the management of IT: Web Development.

Since 2008, regulatory demands for compliance in the financial and life insurance industry have exploded, forcing Sanlam to seek better ways of supporting intermediaries and client support staff, to enable them to spend time servicing the client – and not performing tedious tasks like filling in forms. During the investigation it was found that although the application process for Sanlam Life and Glacier products was completed in the SanQuote system, which supports a complete electronic application process, many intermediaries still preferred to capture data on a paper form while visiting the client. Then again, underwriting processes required information generated by third parties, for example medical reports by medical doctors or specialists, who also preferred paper-based forms. This behaviour raised many questions as to what functions in the form processes added real value to the business.

Near the end of 2011, the preference for products managed on the Lamda system and its sibling, the Epsilon system, raised the prospect of moving policies still managed in the Legacy system to the new platform. However, the conversion of a Legacy-to-Epsilon plan required intermediaries to fill in yet more forms for both the application and for compliance,



which could be anything from 15 to 120 pages, depending on the plan and the number of lives insured on the plan. This requirement introduced the demand for user forms that are pre-populated with data already in Sanlam's possession. The solution of pre-populated forms reduced the time intermediaries spent on filling out forms in measurable amounts.

In addition, the demand for mobile solutions arose, which in turn demanded forms that are operational on Microsoft Windows, iOS and Android devices. With the introduction of SanPort, the deployment of forms moved to a web-based solution. To supply the ever-increasing demand for interactive forms, the SPF Form Development Department

invested in Adobe Forms solutions, using Adobe LiveCycle and Adobe User Extensions for development of system-integrated forms, while Adobe Acrobat is still used for the development of basic form interactivity.

The establishment of this function not only set standards for form design, but also positioned Sanlam to harvest the rewards of using the technologies involved to their benefit. As mobile devices become the connectivity instrument of choice, Sanlam will be well positioned to live up to users' expectations – be they customers or intermediaries.



Financial systems through the years

Walker: The first large-scale ERP system in Sanlam's history

The REK accounting system, originally developed in Assembler with a portion in COBOL, was developed internally at Sanlam and used until 1989, when it was replaced by the Walker system. The Walker system, purchased from the US company Walker International, offered increased functionality over REK. It is an integrated suite of subsystems that caters for all the financial processes, controls and reporting functionality needed. The system consists of a mainframe back-end with a web front-end. Subsystems include the following: General Ledger (GL), Reconciliation Module (Recon), Inventory Management (IM), Asset Management (AM), Accounts Payable (AP), Purchase Order (PO) and CARMS (Accounts Receivable and Billing).

Two Walker licence models were available at the time. The standard licence merely enabled the use of Walker, while the Application Extension licence allowed users to build functionality on top of the Walker platform. Sanlam chose the latter version, as it allowed for more flexibility. The Walker acquisition marked an important milestone in Sanlam's history, as it was the first commercial ERP system (package) to be implemented in the organisation. To date, Walker remains the longest-running package within Sanlam – still running, interestingly enough, on the mainframe.

When Walker was implemented, the back-end was built in Assembler and COBOL,

while the online interface ran under IBM's IMS. The front-end was later migrated to CICS, as global package developments by independent software providers were normally implemented on CICS before IMS.

In the early 1990s, Sanlam migrated from Ideal/Datacom to DB2 as the preferred database and, accordingly, Walker and the financial systems also moved to DB2.

During the late 1990s, Sanlam became one of the primary Walker users in South Africa and was at the forefront of exploiting Walker functionality, not only in South Africa, but also at an international level. The numerous awards won by Sanlam IT staff at the annual Walker Consumer Congresses are evidence of this. These conferences were attended by staff from international as well as local companies and Sanlam was a leader in the usage of the extended Walker licence.

Following the demutualisation of Sanlam in 1998, the Business Analysis team and IT Development team that were responsible for the entire System Development Life Cycle (SDLC), from business analysis through to development and implementation, amalgamated into one team reporting to SPF IT.

After the successful transition to the year 2000, the business realised that it needed a more user-friendly and functional front-end than the existing 3270 green screens. Accordingly, in 2001, SPF IT's Financial Systems Development team began to



redevelop a new front-end in Java. This new front-end was called E2-Financials, relating to the latest version of Walker available at the time, known as E2-Tamaris. It consisted of the Financial Integration Layer and Reporting, Budget (BGT), Internal Billing, Financial MIS and Value-for-Money (VFM).

The BGT system was the first system within Sanlam to be written in Java (2001), after which the front-end to General Ledger and E2-Payments modules followed. Since then, the old front-end has been incrementally replaced by HTML and Java, with the last replacement, for the Debtors module, occurring in late 2013.

The implementation of the E2-Financials web front-end facilitated Electronic Funds Transfers (EFTs), inclusive of the related authorisation and workflow processes, and allowed for the discontinuation of cheques.

By March 2014 there were approximately 6 900 active users of Walker/E2-Financials in the Sanlam Group. Most of the major systems in Sanlam, such as POL, Epsilon, AFT, DEB, AKT, PEN, AGT/KOM, Reinsurance, SCI, ITISS, KDS, Claims, Sanlam Facilities, SAP, Multi-Data and Sanlam Trust interface to Walker, as well as some other systems in the Sanlam Group. Walker receives and processes approximately 17 million journal entries monthly from feeder systems in the Sanlam Group.

Financial systems in the Sanlam Group

The Walker system is widely used in the Sanlam Group and currently supports Sanlam Personal Finance, Sanlam Employee Benefits, Sanlam Trust, Facilities, Multi-Data, SCI, ITISS, Sanlam Namibia, MiWay and, in SDM, Sanlam SKY and Channel are

included. JD Edwards is the financial system used by Sanlam Investment Management and Santam, while Glacier makes use of SAP Financials. Glacier is the only user of Walker's Asset Register (AM) module.

Financial reporting systems

Project Silverfern was responsible for the implementation of Oracle Hyperion Financial Management (HFM) in 2009. This reporting and financial consolidation tool is the heartbeat of Sanlam Group Finance's financial reporting processes. HFM plays a big role in producing the monthly, interim and annual results. The HFM environment was completely renewed in 2013, when not only the infrastructure, but also the base software was upgraded to version 11.1.2.1 and the IFRS (financial consolidation and reporting) application was rebuilt as well. This initiative was part of the SMaRT programme – Sanlam's programme for the implementation of Solvency Assessment and Management (SAM) regulations, due in 2016. The implementation was scheduled to start in the second half of 2014, with a parallel run in 2015 overseen by the Financial Services Board (FSB). The last phase of the SMaRT programme, which dealt with regulatory reporting, included the implementation of QMR – Oracle's Qualitative Management and Reporting application – towards the end of 2014 and into 2015.

Business Intelligence: The four Data Warehouses

Management reports were initially paper-based reports generated by programs that extracted data from operational systems such as NUB, POL, Lamda, WDG, KOM and AGT, did some elementary transformation and summation, and then printed the results. In some cases, the data still required some manual effort to make the results more presentable and easier to understand.

Data extracts were also used to populate spreadsheets and made use of those capabilities to present a more professional result, including graphics. The development of different ways of storing data (like relational and multi-dimensional databases or cubes) led to the emergence of data-mining tools that performed the necessary extraction, transformation and presentation of the results. This, in turn, led to the concept of a data warehouse, where data from one or more disparate operational sources is integrated and transformed to a central repository of data. Data warehouses can store current and historical data and are used for creating trend and other reports for senior management reporting at regular intervals or on an ad hoc basis as needed.

For Sanlam, the value of Business Intelligence (BI) lies in the insights derived from the information to improve the business's decision making.

As BI technologies matured, it also became an imperative for Sanlam to take advantage of the power of the insights that could be derived. BI capability includes all the architectures, systems, technologies, tools, processes and skills required to enable access, analysis and presentation of various data sources.

The evolution of BI in Sanlam resulted in the development of four different data warehouses, each with its own focus. They are as follows:

- the Actuarial Data Warehouse (DWH);
- the Asset Data Warehouse (ADW);
- the Distribution: Management Information System (MIS); and
- the Client Information Management System (CIM).

Note: There are numerous other reports, generated from various data sources, used for departmental purposes only. They are therefore not mentioned here.

The Actuarial Data Warehouse (DWH)

Every company has assets and liabilities. For an insurance company the main liability is that, at some stage or another, a claim against a policy will arise (for example surrender, maturity, death, disability or trauma). Obviously, not every policyholder will claim in a given year, so calculations must be made to ensure that enough reserves are kept to cover any claims that may arise in a given year. Using life expectancy tables, actuaries are able to



calculate these amounts. Over time, the reserves for a particular policy need to approach or equal the liability for that particular policy. There are also minimum reserves prescribed by Government to ensure that life companies remain solvent.

It is important that any value-type events that occur on the different policy administration platforms (POL, Lamda/Epsilon) are updated to the DWH at mid-month and month-end. Reconciliations between the DWH and administration platforms take place on a regular basis to verify the accuracy of the data.

To accurately perform these calculations, actuaries require reliable data such as age, gender, type of policy cover, occupation, smoking status and medical status. They also analyse past events during a specified period to ensure that sufficient reserves were kept and to calculate whether the life expectancy tables were accurate.

Prior to 1996, Sanlam's actuarial valuation information resided within five main Legacy systems (all Assembler/COBOL):

- Investment series policies (BRP),
- Investment series valuations (BWG),
- Hundred Plus Policies (HPP),
- Valuations (WDG) and
- Reinsurance (HER).

These systems' file formats restricted data manipulation. The actuarial data's completeness, as well as the quality and availability of information, restricted management decision making, particularly in the areas of the complex universal life and investment series (BRP) products. Consequently, the data in the BRP Legacy

system was used to develop the first Actuarial data warehouse on DB2. At the end of 1997, the project was suspended as a result of the company's demutualisation and the Y2K effort having caused a significant strain on development capacity.

After the demutualisation project, which took preference over all other projects, the data warehouse project once again resumed, with the aim of including data for all the new products (Stratus, Guaranteed Capital Fund and the Lamda products). Towards the end of the following year a feasibility study was carried out and a recommendation was made to transfer the data in WDG and HPP systems to the data warehouse in order to have a single warehouse for Sanlam Life's products.

The migration of the BRP (resumed from 1997), BWG, HPP and WDG systems to the DWH started in 2000. This was a very big challenge, as a total system redesign was required, which included converting data from flat files to DB2 tables. This took two years to complete.

By 2004 the DWH was well established. It contained actuarial data for all Millennium and Legacy products, with full policy level embedded values. A new reporting tool, Business Objects, was introduced to extract information, although Easytrieve was also used where needed. Previously, programs were written in order to extract any data that was needed. The new reporting tool simplified reporting and also enabled the business to create its extracts and reports independently.

In-house programs that calculated Retrospective Reserves (for unit funded policies) in the DWH were written mainly in COBOL and some in Assembler.



Extracts are currently made from the DWH to enable the Actuarial department to perform the following, mainly as input to its Prophet tool:

- calculation of prospective reserves;
- embedded-value calculations;
- profit/loss calculations;
- actuarial analysis;
- rate reviews, and
- cash flows.

There are also extracts performed for other purposes, such as:

- net buy/sell instructions per fund (unit trading) to the Investment department (Curo currently);
- Client Information Management (CIM);
- Management Information System (MIS);
- Walker (General Ledger);
- Financial Services Board (FSB); and
- FICA reporting.

The Actuarial department used the extracts to enable it to manipulate and model the data for its own needs. It initially used self-written VB programs and Excel spreadsheets. However, in the late 1990s it acquired Prophet, a software product from SunGard that allows for more complicated actuarial calculations.

The Asset Data Warehouse (ADW)

Solvency II, a revised prudential regulatory regime for insurers, will come into effect in Europe in 2015/2016. The South African equivalent, required to ensure that regulation of the South African insurance sector remains in line with international best

practice, is called Solvency Assessment and Management (SAM). SAM places a significant responsibility on local insurers to extend their valuation and reporting processes. One of Sanlam's biggest challenges was to establish a warehouse that fulfils the regulatory requirements associated with asset data. In order to fast-track the development of this warehouse, Sanlam purchased IBM's Insurance Information Warehouse (IIW) model in 2011. IIW was used as a reference model for the development of the SMaRT (Solvency) project's Asset Data Warehouse.

Getting to grips with the complexities of the IIW models was challenging. In this regard, both IIW and Insurance Application Architecture (IAA) were consulted to assist in the adoption of the new warehouse development methodology. The SMaRT programme also introduced a number of IBM's Infosphere Information Server (IIS) tools such as Datastage, FastTrack and Infosphere Data Architect (IDA). The first release of the ADW was implemented in December 2011, followed by a number of significant releases over the next 15 months.

Distribution: Management Information System (MIS)

MIS is mainly used in the sales acquisition process (sales, issuing times, lapses etc.) In the mid-1990s, after the era of paper-based reporting systems, where printed reports were bound into the so-called 'blue books' and dispatched to users all over the country, Sanlam implemented a number of separate MIS reporting systems for various needs. These included:

- an Executive Information System (EIS) package called Commander for high-level balanced scorecard reports to executives;



- a Clipper program (developed in-house) called 'Management by Exception' ('Uitsonderingsbestuur'), enabling Distribution management to quickly identify those 'exceptions' that needed management attention;
- Trends, an in-house-developed Clipper program for monitoring sales trends. Trends at this stage were focused on production-related parameters, such as average premium size, average commission and lapse rates; and
- Istel transactions on the mainframe for detailed level reports per intermediary from a DB2 database.

During the late 1990s the Commander and Clipper packages were replaced with Wired for OLAP, a reporting tool running on a multidimensional database engine called ESSBASE. The functionality of these tools was enhanced by the vendors over time. The original vendor was bought by Hyperion, a company, that in turn, was acquired by Oracle. At the time of writing, Sanlam was still using this software. Also included in the toolset is Interactive Reporting for ad hoc queries and analysis.

This development increased the scope of available statistics from the original product-related parameters to include client demographics such as gender, age, race, income, language, occupation and segment and process-related statistics such as the cycle times of new business issuing.

Some of the main users of the MIS Warehouse are:

- Sanlam Distribution (Sales) at all levels of management at Head Office and in the field;

- Glacier Distribution;
- the New Business department;
- Sanlam Trust;
- Sanlam Direct; and
- Product Development.

CIM Warehouse (Client Information Management)

During the late 1990s Sanlam had a Client Relationship Management (CRM) focus, which saw the implementation of Siebel in the call centre and an analysis facility called the CIM data warehouse, where an analytical single view of the customer across different product providers was taking shape (restricted to RSA and pre-independence Namibian business). The data warehouse used a UDB DB2 database on an AIX Server and Visual Warehouse (on a Windows Server) as the Extract, Transform and Load (ETL) tool.

Some of the Visual Warehouse shortfalls were addressed by developing in-house programs using ANSI C to perform certain functions. At first, only Sanlam Life and Sanlam Collective Investments' clients were included. Also part of the CRM program was the so-called Total Client Knowledge Policy (TCKP) project. One of the workstreams included the further expansion of the warehouse to include additional sources. Later the warehouse was further expanded to accommodate almost all retail clients in the Group to enable the client loyalty programme called Reality. (For example, Santam, Glacier, Sanlam Trust, Sanlam SKY and Sanlam Personal Loans.) During the early years emphasis was placed on understanding client lifetime value. Data mining models (using SAS Data Mining) were created to predict current and



potential client value. These insights were used to differentiate call centre service to more valuable customers.

Business Objects (5.1.2) was introduced to empower business users to extract and select data themselves. This tool was upgraded to an interim version 6.5 in 2011 in preparation for a large migration to Business Objects XI 3.1 in November 2011.

Client and snapshot views of the current product information of almost all businesses in the Group have been incorporated in the warehouse. The available information is loaded in the CIM Warehouse at different intervals varying from daily to monthly, with the matching and reporting processes being done on a fortnightly basis. Information is available in respect of the client, the products, the contact details as well as the client's interaction with the SPF Client Contact Centre. The information is used to enable cross-selling between the different product providers (the success of Sanlam Personal Loans, the JV with Direct Axis is a good example), Sanlam Direct campaign objectives and ad hoc lead generation. Data is also sent to corporate brokers (Absa, FNB and so on) to be loaded onto their systems. Other uses of the data include MIS reporting to Distribution, Segment Solutions and Product Suppliers.

In 2003 Visual Warehouse was migrated to Data Warehouse Centre (DWC), still running on Windows Server. In 2005 DWC was upgraded to the next version and moved to a Unix AIX server. The DWC tool was then imbedded as part of UDB DB2.

Towards the end of 2008, the IBM ETL product called DataStage was acquired. As there was no migration path between DWC

and DataStage, the existing ETL processes had to be redesigned and redeveloped in DataStage. The redevelopment was completed as part of business-as-usual and all ETL processes were successfully migrated to DataStage v8.0. During 2013 DataStage v8.0 was migrated to DataStage v8.7.

The data (and data from other sources) is also used for data mining models. Owing to cost considerations, the SAS data mining software was replaced by Clementine in 2004, and was later renamed SPSS Modeller (2010). Sanlam has been quite successful with the use of predictive models such as campaign response models and ODDS – the lapse-probability models. ODDS models were initially developed in conjunction with the University of Pretoria, but support and maintenance were taken over by our own data miners in 2010.

From a technology perspective, the CIM Warehouse is hosted on a DB2 server environment. Initially, IBM Warehouse Manager was chosen to perform the ETL processes. As this product became end-of-life, all applications were migrated to DataStage in 2012, which also enabled more efficient operations and faster development times.

The astute use of business intelligence is an important tool for Sanlam to identify and understand its strengths and weaknesses, to react quickly to a changing business environment and to respond quickly by developing the tailored solutions needed to service a diverse client base with the right products. In future there will be a much bigger focus on Information Management in SPF as the awareness and expectations around the use of 'Big Data' and 'Advanced Analytics' are mounting.



Personal computing, groupware and office automation

Interacting with computers has always been a bit of a mystery for non-computer-literate people – especially in the early days of mainframe computing, when the primary means of interaction was via punch cards and printed output. Gradually, punch cards were phased out and replaced by 3270 terminals, also known as visual display units (VDUs) or ‘green screens’. When personal computers arrived in the 1980s, more people were empowered to use computers because the user interface was a lot simpler to use. Then, with the arrival of the graphical user interface (GUI) towards the end of the 1980s, using PCs became even easier. Today, PCs are a necessary business tool for the vast majority of Sanlam’s staff.

The road to the PC

The first PCs in Sanlam were introduced in the early 1980s. Multi-Data was first to introduce them when it began using Epson PCs for the development of its Point of Sale systems, which were originally coded in Basic. Sanlam used IBM PCs, which were soon followed by the XT and AT range. The DOS operating systems developed quickly and Sanlam upgraded the initially small number of PCs to Windows 3.1 and Windows for Workgroups in short succession. Increasing numbers of PCs were rolled out, effectively replacing all of the 3270 VDUs and putting the power of personal computing – word processors, spreadsheets and e-mail – in the hands of most of Sanlam’s staff members. Windows 95 and Windows NT were the next desktop and laptop operating systems to be deployed.

In the early 1990s there was a big drive towards the adoption of OS/2 – a PC

operating system created jointly by Microsoft and IBM. Some of Sanlam’s in-house-developed systems, such as Istel and Sanita were designed to run in an OS/2 environment. Rivalry between Microsoft and IBM resulted in IBM becoming the owners of OS/2, while Microsoft focused on the development of its Windows operating systems. Unfortunately, IBM could not make a success of OS/2 and Sanlam decided to terminate all development on and for this platform.

PCs became the standard graphical user interface (GUI) for Sanlam’s online applications, which necessitated changes to Istel to enable it to operate with a mouse. After a special program was written to teach end users how to use a mouse, ‘point-and-click’ and ‘drag-and-drop’ became part and parcel of every end user’s life.

All desktop workstations and laptops were upgraded to Windows 7 between 2011 and 2012. At the time of writing (July 2014),



some users had already been upgraded to Windows 8.

Electronic messaging

Electronic mail has its roots in the early days of mainframe computers – even before VDUs became the popular means of interacting – which of course was long before the introduction of the PC and the Internet. In today's world, e-mail is often seen as one of the most critical applications in a business. Not only is it a means of communicating with clients and the rest of the outside world, but more importantly it has arguably become the most important medium for internal communications, being critical for supporting some of the most mundane to even some of the most complex business processes in the organisation.

Sanlam needed a viable medium for communication between staff members working at Head Office and colleagues working in branch and regional offices across the country. The very first messaging system (BDS) was developed in the 1970s using Teletype machines. Messages were typed by a user and the content was sent to the mainframe, character by character. The mainframe, in turn, sent it character by character to the recipient's Teletype machine. It was truly 'real time' and if the recipient was working on his or her machine, either entering a transaction or another message when a message was received, the characters of the incoming message would appear between those of the work the user was busy with.

These Teletype machines had unique identification numbers, called 'Roepkodes', which were derived from the national car registration number system in use at the

time. In Bellville, for example, one would find CY1 and CY2, while TP1 and TP2 would have been used for Pretoria, and OB1 and OB2 would have been used in Bloemfontein. This low level solution was not sustainable and in the early 1980s it was incorporated as part of the online transaction system then developed on the Wang platform and later part of Istel.

The BDS system became outdated and the time was ripe for developing a more sophisticated e-mail system. A new system, SanMail, was developed in the mid 1990s following a service-based architecture (SBA). This system was demonstrated at the same time that cc:Mail was introduced to the business. A decision was taken to opt for cc:Mail, with the consequence that SanMail was never implemented.

Another rudimentary messaging capability was the text-based feature that was offered via Roscoe. As Roscoe was primarily a developer tool with a small number of users in the business, the use of this facility was very restricted.

Electronic mail and fax (EMF)

Business-related e-mails, intended for either internal staff or intermediaries, with their origin in applications such as POL and Epsilon, are typically sent via the EMF system originally developed in-house by IT's technical development team. When the infrastructure services were outsourced, responsibility for EMF was handed over to Debis (which later became T-Systems). More recently, the responsibility for this system returned to IT Infrastructure Shared Services (ITISS). Bulk e-mails to clients are normally sent via the Bidvest or Striata solutions.



Although fax was a great technology when it was originally deployed, it was not accessible to all. Dedicated fax machines were placed strategically across the organisation, which meant that a single number was shared by a small group of users. When users moved around, their nearest fax number, in all likelihood, changed as well, which made it difficult for external users or clients to send faxes to the correct fax machine. Managing incoming faxes also proved challenging, as pages of faxes simply piled up behind the machines and these needed to be sorted and distributed manually.

Shortly after Sanlam's IT infrastructure was outsourced to Debis, they, in co-operation with Group IT, launched an initiative to install RightFax, an electronic-faxing software solution, across the organisation. This was a huge step forward, as users who qualified for the service now had the software on their PCs, each with a dedicated fax number, which improved customer service and productivity significantly. After more than 10 years, RightFax remains the standard faxing solution in Sanlam.

Printing

Before the arrival of the PC, all letters and documents had to be written by hand and then in turn typed by typists. Mainframe printing allowed for standard reports and the printing of certain business documents such as policy contracts. The use of word processors introduced the need for desktop printing. Initially, dot matrix printers were connected to individual PCs via dedicated cables. New technology advances allowed up to three PCs to share a printer via a Geotek PrinterSharer switch. When network printers were installed, printing via the

network became possible and resulted in many users being able to share a single printer. The HP Laser printers proved quite popular and allowed for A4 (cut-sheet) printing.

In the early 2000s, an initiative was launched to consolidate and replace the remaining fax machines and desktop and network printers with Multi-Function Devices (MFDs). Lexmark and Gestetner equipment became the devices of choice when connecting to the network. Brother MFDs were used for devices that were not connected to the network, but directly to PCs.

Groupware and collaboration

In the early 1990s, MultiMate was the standard word processor used within Sanlam. In 1993, Sanlam started investigating other programs, as the new owners of the MultiMate word processor decided to discontinue further development of this product.

Sanlam then decided to acquire Lotus Notes and Lotus SmartSuite as the first collaboration and office productivity software across the company. The different programs within the package (for example, the word processor, electronic mail, database and diary) could effectively communicate or 'talk' to one another.

The following Lotus products were acquired:

- Lotus 1-2-3: Spreadsheet;
- Lotus AmiPro: Word processor;
- Lotus Freelance: Presentation software;
- Lotus Approach: Relational database;



- Lotus Organizer: Calendar;
- Lotus cc:Mail: E-mail; and
- Lotus Notes: Application development.

During 1997, the new e-mail and calendar functionality of Lotus Notes replaced both cc:Mail and Organizer. Lotus Notes was then implemented as a total groupware (or electronic collaboration) solution for Sanlam. In this way, Lotus Notes introduced a new, automated workflow facility to Sanlam and offered a very efficient way of collaborating.

Lotus Notes was also integrated with the Lotus Messaging Switch LMS fax solution to provide fax 'send and receive' functionality directly from the inbox. In 1999, RightFax, which was server-based, was introduced into Sanlam, as the LMS fax solution was not Y2K-compatible.

Microsoft Office

In 1999, a decision was made to replace Lotus products with Microsoft Office 97. The programs that formed part of the Microsoft Office package were: MS Word (word processor), MS Excel (spreadsheet), MS PowerPoint (presentations) and MS Access (database). Project Cosmos (Complete Office Suite Migration of Sanlam) was established in order to migrate all users and some of their data to Office 97. This project was concluded before 2000.

The Microsoft Office products, including the latest versions of Word, Excel and PowerPoint, were upgraded to Office 2010 during 2011 and 2012. This upgrade also included the roll-out of Microsoft Windows 7, which replaced Windows XP.

In 2012 Microsoft SharePoint, a browser-based collaboration and document management tool, was also implemented.

Lotus Domino and Microsoft Exchange

Throughout the years, various small departmental migrations took place from Lotus Notes e-mail to Microsoft Outlook and vice versa. Sanlam Personal Finance, the major business unit in the Group, used Lotus Notes in addition to Lotus Sametime (Instant Messaging), Lotus Traveler and Mobile Office (mobile access to e-mail and calendar) as an integrated collaboration environment. BlackBerry Server was implemented to provide access to e-mail for BlackBerry users.

In 2011 the Microsoft Exchange Project was established, with the objective of replacing the Lotus (now IBM) Domino and Notes e-mail and calendar functionality with Microsoft Exchange and Outlook across the Group. As a result of an integrated Microsoft Exchange mail facility, Outlook users were now able to communicate more effectively in the Group (including Sanlam, SIM, Glacier, Santam, Sanlam SKY, SEB and Sanlam Health). Having a uniform e-mail and calendar environment across the Group allowed staff to view the availability of people across the Group on their calendars, which assisted in improving both efficiency and productivity.

Microsoft Lync replaced the instant messaging functionality of Lotus Sametime, while mobile access to mail was achieved via ActiveSync (replacing both Lotus Traveler and Mobile Office). BlackBerry for Domino was replaced with BlackBerry for Exchange.

Lotus Notes is still extensively used for collaboration applications, such as the Development Process Methodology (DPM) system. At the time of writing, an investigation was under way to determine a replacement strategy for the remaining Notes applications.



Other business systems

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Section four focuses on the technological developments within various business units at Sanlam. These include the intricate retirement fund administration systems, which, in certain cases, still run on the mainframe, as well as Sanlam Collective Investments, which was the first business unit to implement a relational database system.

Sanlam, through Multi-Data, took responsibility for the collection of premiums, the payment of policy benefits and staff salaries, both internally in the company and also for external clients, which demanded highly technical systems to accommodate the interaction with the banks.

In 1995, Sanlam's first website, www.sanlam.co.za, went live, offering clients self-service functionality on policy values. The Y2K phenomenon affected the whole world, but thanks to a major project undertaken in this regard, Sanlam was ready to face the changeover to the new millennium.

Sanlam Employee Benefits: Retirement fund administration

Until the 1990s, Sanlam Employee Benefits (SEB) was not exposed to any software packages or global fund administration systems. PEN and some related in-house-developed mainframe systems had to suffice for most fund and group risk administration activities. At that stage the pension fund industry also entered a major turnaround from Defined Benefit (DB) funds to Defined Contributions (DC) funds and clients began to demand updated information of their pension fund benefits more frequently. Unfortunately, the old Legacy systems could not be adapted to meet all of these new demands. Consequently, the search for alternative solutions was initiated, resulting in, among other things, the implementation (and decommissioning) of Compass's Wizard system, the outsourcing of the retirement fund administration to Coris Capital, as well as the introduction of software packages from Bytes for instalments and MIP for Group Risk administration.

Mainframe and other in-house-developed systems

SEB's first computer systems date back to the early 1970s. Although big inroads have been made into the replacement of SEB's product administration systems over the past decade, some of these systems are still active today. The following mainframe systems have been in use in SEB since the 1970s:

- The Deposit Administration Funds (DAF) system was developed in 1973 and used until 1999. It was developed in-house using Assembler and ran on flat files. The online system used visual display units (VDUs) or 'green screens' as its user interface, while punch cards were initially used to run the batch jobs. Funds' administration moved to the PEN system in 1987 and up until today the historic data remains on DAF.
- The original deposit and fund administration system, Groepskemas (GSK), was also developed in 1973 using the same architecture as DAF. By 2013 only two schemes remained on this system; the rest had been terminated or converted to PEN.
- Optional Schemes (OPS) was active from 1973 until it moved to Sanlam Personal Finance (SPF) in the early 1990s. During May 2013 there were still 1 800 policies being administered on this system.
- Pension Plan (PENPLAN) was developed in COBOL and was active from 1979 until 1999. Since the system was not Y2K-compliant, a special



effort was made during the latter half of 1999 to ensure that all remaining funds/members were transferred to the PEN system. This was achieved in October 1999 and PENPLAN was subsequently decommissioned.

- The Cash Deposit Administration (CDA) system was active from 1981 and is still used today for investment administration. Although some data was transferred to Sanlam Collective Investments' SUTUWA system, 64 funds are still running on this system (as at July 2014). The system was developed in COBOL and ran against IMS databases, which were migrated to DB2 in 2013. The online part of the system uses ADF/MFS for the front-end and it runs under IMS TM.
- In-house development of the PEN and Pension Fund Administration (GVA) systems began in 1984 and these were implemented in 1987 as a platform for the administration of defined benefit pension funds, payments and Group Risk products. This system used the same architecture as CDA.
- The Pensions Valuations and Tenders system (PWT) was developed in-house using MFS under IMS TM in 1990. Originally it ran on IMS DB, but it was converted to DB2 in early 2000. Two minor databases remained on IMS DB until they were also migrated to DB2 in 2013. PWT was originally developed for defined benefit valuations and risk benefit quotations. The use of PWT for defined benefit valuations by Simeka Consultants & Actuaries is currently winding down, owing to the conversion of funds to a defined contribution basis. In 2005 Simeka Consultants & Actuaries bought a system called Superval, which

was developed by Australian actuaries to handle the remaining defined benefit funds. The conversion process by Simeka Consultants & Actuaries to Superval became functional in 2010. The risk benefit quotation functionality of PWT is still very active and is used by Sanlam Group Risk Tenders and Revisions on a daily basis. This functionality is supplemented by a stand-alone PC system called Satellite. Satellite was developed in-house in the late 1990s and is distributed to front offices around the country to supplement the quotation process. It runs on Microsoft .NET and is written in Visual Basic .NET framework 3.5.

The long-term aim is to develop a new, single risk benefits quotation system for Sanlam Risk Benefits.

Wizard programme

A Sanlam delegation visited Compass, an IT administration system vendor in Boston, USA, during the 1990s to investigate their fund administration system, with the aim of replacing the PEN system. SEB's management decided to buy the product and in 1995, the Wizard programme became one of the key projects within Sanlam.

SEB was dependent on the vendor company in Boston for customisation and new development – which became so expensive that it eventually contributed to the decision to terminate the use of Wizard. Some years later Compass was acquired by SunGard.

This new system enabled SEB to expand its administration business, based on reliable information processing on a strategic platform.



A first for SEB: Wizard Datamart and Wizard-Online

Datamart

In 2000, the first Datamart (Oracle) was built for SEB. The Wizard Datamart was originally built for reporting purposes. Users were slow in the uptake of the use of the Wizard Datamart. This was largely because it was a new concept and major change management was required to convince users to accept that data could come from another source other than the core system. Once Business Objects was introduced and administration users realised the benefit of having access to information via this tool, they began to accept the data warehousing principles.

Wizard-Online

SEB had a vision to develop a website for clients to access their information. A few attempts had previously been made in this regard, but the idea never materialised into a full-blown web application. Compass, at this stage, also did not have a web front-end to its administration system. In 2001 an in-house project (developed in Classic ASP with VBscript and Javascript) was started for the development of 'Wizard-Online', which became the first fund administration web front-end in South Africa.

Developing Wizard-Online was a challenge. An independent system was required that could interface to SEB's back-end administration system (Wizard at the time) and other third-party systems and that could be configured to meet the changing needs of clients. Considerations such as improving service to employees, creating a better communication channel and reducing HR administration were some of the drivers in its development. Members had a need

to access their investment balances, track investment portfolio performances and allow for online changes to their investment composition.

SEB invested in a major branding and marketing exercise, which reaped noticeable rewards. Campaigns via radio, financial magazines, articles in newspapers and a presence at retirement funds conferences were used to market Wizard and Wizard-Online. Wizard and Wizard-Online set the pace for emerging trends in the retirement industry in South Africa.

The winds of change

It was found that the Wizard project was over budget and not delivering on time. This prompted the decision in 2006 to terminate the Compass/Wizard project, as the maintenance and development costs (all paid in US dollars) became prohibitive.

With Nick Christodoulou, a Sanlam EXCO member, heading up investigations into a new retirement fund administration system, Coris Capital was soon identified as a viable contender. All development on Wizard and Wizard-Online was consequently ceased and focus turned to investigations into Coris Capital's administration system.

Coris Capital: Outsourcing retirement fund administration

Sanlam became a partial owner of, and also subcontracted its administration services to, Coris Capital in 2007. Coris was responsible for the migration of all retirement funds that were administered on the PEN and Wizard platforms to the MIP EB platform. (MIP EB is developed on Progress Software's database and 4GL.) It was a long and intense process, and took almost three years to complete.



The successful migration of funds resulted in the Wizard system being 'switched off'. However, the cost saving and anticipated turnaround from a loss to a profit situation in SEB administration never materialised.

The Wizard Umbrella Fund, administered on Wizard, with 118 participating employers, was the first to be migrated. The fund's name was changed to the Sanlam Umbrella Fund and it is now Sanlam's flagship retirement fund. In August 2009, the Wizard platform was finally decommissioned.

Technically Coris Capital was an independent company with its own IT infrastructure. With its IT operations now independent of Sanlam's, a strategic decision was made to move to Microsoft technology. Users were migrated to Outlook with Coris Capital e-mail addresses. A project was launched to build a Microsoft data warehouse for reporting purposes. Wizard-Online was rewritten in Microsoft .NET and was renamed Retirement Fund WEB. SharePoint 2003 was implemented as Coris Capital's Intranet platform.

In 2010, Sanlam bought the remaining 50% of shares in Coris Capital. The business

division's name was subsequently changed to SEB Retirement Fund Administration (RFA) and its IT Operations began reporting to SEB IT.

Replacing PEN's Group Risk payments and investment functionality

PEN's payment functionality (only for insured pensioners; uninsured being on PEN) has been replaced by Bytes' In.Pensions platform. The Group Risk business is in the process of migrating from the PEN system to MIP's Life platform (also known as SNAP) and the investment products' administration has been transferred to Sanlam Collective Investments' SUTUWA platform.

Reporting structures

Throughout the years, SPF IT was the service provider for all of SEB's IT systems. In 2010 SEB became part of the Institutional cluster and at the beginning of 2011 its systems were transferred to SEB IT, under leadership of Denise Sasman, CIO: SEB IT.

Sanlam Collective Investments: System enhancements and upgrades

Sanlam Collective Investments (SCI), formerly known as Sanlam Unit Trusts or Sanbes, was established in 1967. SCI has used Multi-Data's SHR system as its administration platform since the Sanlam General Equity Fund was launched on 30 May 1967.

SHR was a batch mainframe system developed by Multi-Data as a bureau service for the administration of ordinary shares, but was later adapted for unit trust purposes. During the 1980s unit trusts became more popular and SCI needed a solution to improve its customer service. The new system had to be an online system that would be able to integrate the then five different unit trusts for customer portfolio purposes. The system was rewritten by Multi-Data as an online system, using Datacom/Ideal as the underlying database and development language. The implementation of the new system took place over the first weekend of October 1989 to coincide with the new financial year, which in those days ran from 1 October to 30 September. The SHR system was the first business application in Sanlam to integrate with the then recently implemented Walker (General Ledger) system, which replaced the REK system.

The system's Datacom database was migrated to DB2 in the latter half of the 1990s, allowing the first self-service transactions via the web to be made available to the public in March 1999 under the S-Online facility, which later became Secure Services.

The 3270 Datacom/Ideal front-ends had to make way for graphical user interfaces. In 2001/2002 a large part of the system's front-end, and parts of the back-end, were redeveloped from the former Ideal/Datacom system to a new system written in MS Active Server Pages (ASP) and COBOL with external DB2-stored procedures. This was also the first Citrix deployment in Sanlam that allowed 'home workers' to access the system via a dial-up facility. The project ran over a two-year period and delivered a new 'look-and-feel' solution called SUTUWA. SUTUWA is an acronym for South African-based Unit Trusts and Unitised Investment Web-based Administration and, according to legend, an adaptation of the Fanagalo (a dialect historically used by miners in South Africa) word 'sutoova', meaning 'to strike gold'.

SCI investigated numerous local and overseas packages to replace SUTUWA, but could not find a suitable replacement solution. A 'future proving' assessment completed in 2005 revealed that the system was actually very stable, but that the development technology was becoming end-of-life. It was therefore suggested that SCI's management should start thinking about essential upgrades.



This risk associated with decreasing skills required to maintain the system over the long term was also highlighted. In 2009, work commenced on rewriting the front-end of the SUTUWA system in C#.NET, called InvestAdmin, and the majority of the COBOL code was also subsequently rewritten in DB2 Native stored procedures.

Over the years the system was enhanced to cater for a continuous stream of new requirements from the business. Some of the significant changes include multi-company functionality for third-party administration added during 2002, the development of an offshore trading system, as well as the Smoothed Bonus Client Administration capability for non-united products added in 2010.

When SCI's system was migrated from the original flat-file SHR system to the Ideal/Datacom platform in 1990, SCI administered five funds. At the end of September 2005, SCI administered 72 of its own funds, totalling R26,44 billion in assets under management. By the end of 2013, SCI managed 95 own funds worth R91,8 billion,

while the total assets under administration on the SUTUWA system, covering 957 funds, amounted to R136 billion.

The SCI development team, which previously reported to Multi-Data, was transferred to Sanlam Life's IT Division in the early 1990s, where it reported to various managers in the years that followed. In 2008 the team was incorporated into Glacier's IT Division, owing to the similarities in architecture used by the IT systems involved, as well as the similarity between the two companies' business processes. In 2011, San-Marie Greeff, CEO of SCI, reintroduced the IT Development team into SCI and appointed Riana Coetzer as head of IT.

At the time of writing this book, SCI was involved in a BPO project aimed at the outsourcing of their business administration operations that will result in the 'sun-setting' of the SUTUWA system. However, Sanlam Employee Benefits (SEB) is considering the continued use of a part of the system for the management of their investment products.



Multi-Data: The end of an era

Multi-Data was founded on 30 September 1969 as a full subsidiary of Sanlam. It was established as a computer service bureau with a number of computer systems, such as a payroll system, as well as financial and money transfer systems that were operated on a commercial basis. Sanlam also paid Multi-Data for using its payment systems. Multi-Data consisted of a development team, a marketing division and a services department, which was responsible for the day-to-day collection of clients' input, the scheduling of jobs and the dispatching of output. Although Multi-Data was a separate company, the systems department was an integral part of Sanlam's IT department at the time. Multi-Data also had offices in Johannesburg and expanded to Durban in the early 1990s.

The rationale behind the formation of this business division was to use the spare capacity that was available on Sanlam's then recently purchased mainframe computer – especially after hours. This additional capacity was offered to external companies. The appeal for external companies was that they didn't have to invest in their own equipment, infrastructure or computer specialists – they could simply draw on the resources of Multi-Data to develop and maintain systems for them. Although various systems were developed by Multi-Data, the most successful systems were SOL, a salary and wages system; KOP, a sophisticated financial system (Debtors, Creditors and Stock Control) used by, among others, a number of local cooperatives and clothing manufacturers, as well as companies in the construction industry; and the DEB, DIS and KOS money transfer systems.

In the early days, most of the programs were developed in Assembler, COBOL and Easytrieve, which all ran on the mainframe. The first development on PCs was in 1984 using Basic on EPSON computers. These PCs were equipped with two floppy drives

and a 10MB hard drive, which soon needed to be upgraded to 20 MB. In later years PC development was coded in Clipper and dBase.

A prominent player in the payroll business

By 1990, Multi-Data had more than 900 external clients and in 1994 it became the biggest salary/wage service bureau in South Africa when it acquired PayTECH, a division of Q Data. Multi-Data continued to run its internally developed salary system (SOL) and adopted the QPAC system previously used by PayTECH. QPAC was run on the mainframe and, together with the in-house-developed SOL system, Multi-Data offered two payroll products on a bureau basis.

A much-anticipated event in 1999 was the introduction of Oracle as an HR system within Sanlam and the planned implementation thereof in Multi-Data as a bureau payroll system. Oracle replaced the internally developed PAY system for Sanlam's staff payroll, but was subsequently replaced by SAP in 2003. Multi-Data never used the Oracle system for its clients.



When the payroll division of Multi-Data was sold to Building Societies Data Bureau (BDB) in 2002, clients who were still on the SOL system were offered an option: either migrate to QPAC or find another payroll administration system. SOL users who decided not to convert to the QPAC system were given a download of their master data.

Money transfer services

Multi-Data used to operate Sanlam's DEB system as a commercial system for the collection of payments and premiums from individuals' bank accounts via Automated Clearing Bureau (ACB) and BDB. The main DEB run was integrated with Sanlam's monthly run, which was a severe restriction, as external clients demanded different cut-off dates and the ability to submit transactions throughout the month.

A new debit order system, DIS, replaced DEB in the early 1990s. The DIS system allows for multiple debit order runs per month. In 2014 the DIS system processed more than 1,2 million debit orders per month.

Multi-DIS was a PC front-end for the DIS system used by clients to capture transactions for the regular withdrawal of amounts from clients' bank accounts.

Originally KOS provided the mechanism for money payments to clients' bank accounts via ACB used by BDB systems. Payments occurred on either a two- or five-day cycle, requiring rigorous system and operational processes and controls.

Multi-KOS was a PC front-end for the KOS system that allowed clients to capture their own transactions and then to submit the file to Multi-Data ready for submission to Multi-

Data's final processing before generating the tapes for ACB and BDB systems.

By 1999 Multi-Data was at its peak, handling three million transactions each month for approximately 2 000 external clients. During 1999, Multi-Data introduced the Electronic Commerce Gateway (ECG) to facilitate financial and non-financial transactions between two parties. The ECG enabled faster payment of claims (within 24 hours), as opposed to the old manual system, which could take up to five days. ECG also enabled the electronic transfer of information and documents (such as IRP5s) to the South African Revenue Service (SARS).

During 2002, Interchange was introduced as a software solution for the exchange of data and financial transactions between Sanlam and Multi-Data's external customers and various service providers such as Absa, FNB and Standard Bank. It was introduced as a replacement for the original 'EC Gateway', which required replacement owing to cost and support considerations. Subsequently Interchange has also replaced the ACB system (magnetic tape exchange system) for payments and collections.

Interchange uses Xcom for payments to Absa and IBM's Connect:Direct for payments to Standard Bank.

Interchange provides a mission-critical facility for the switching (exchange) of transactions for money collection on behalf of various companies in the Sanlam Group – as well as Multi-Data's external customers. During the 12 months ending September 2012, Multi-Data handled more than 39 million EFT transactions to the value of more than R132 billion via Interchange.



During 2010 the MultiWeb solution was implemented to accommodate the debit order collections and payment processes for Multi-Data's external clients.

This solution was provided by an external vendor, Route Logix, with the infrastructure hosted by Sanlam. MultiWeb entailed a back-office application used by Multi-Data clients to administer their clients' records. This application also processed bank files, generated Walker (financial) transactions and SMS files, and had a web-enabled front-end (Console application). The use of Route Logix's system came to a sudden end in 2013 and was replaced by Multiscore, a system managed by Softycomp and hosted by BCX, which would serve as an interim solution until a strategic solution could be found. The strategic solution, MultiConnect, is currently being developed by BCX and should be ready for roll-out by the third quarter of 2014. After completion of this solution, the maintenance and upgrades will rest with SPF IT.

Tax certificates and directives

As Multi-Data originally performed payroll administration for various clients, it developed the IRP system to print tax (IRP5s and IT3s) and contribution certificates on their behalf. (No tax calculations and no payments to SARS are made by the system.) The service was also provided for those clients who had their own payroll systems, but found it easier to use IRP. All Sanlam departments (PAY, AGT, POL, PMT, SEB, SCI, Lamda/ Epsilon and Glacier) that had to issue tax and contribution certificates used the system. IRP would receive the data via tape, reconcile it, print the certificates and send a printed report to SARS detailing the

reference sequence numbers per client. Originally the IRP5s were printed side by side on the mainframe chain printers, but this was replaced with the new A4-format certificates on laser printers.

There was no electronic integration with SARS, which meant that tax directives and certificates were requested via the postal service and it could take up to six weeks before the process was completed.

The IRP system was not Y2K-compliant and, because of SARS policy changes from November 1999, which required that the submission of tax certificates be changed from manual to electronic submissions, it was decided to rewrite the system during 1999 (again in COBOL) and to rename it SAR. The SAR system handles directives, tax certificates, IT3 extracts, insurance payments and dividend tax.

A new feature of SAR was that tax directives could be handled electronically. A client could either use the online e-IRP web interface (developed in Classic ASP) to capture the information, or use a database or file with the relevant information. The collected data is stored on a DB2 database. Tax directive requests occur daily in the afternoon when a file is transferred via Gateway (FTP over a secure ISDN line) to SARS. The next morning SARS responds with a file via the same route, and the SAR database is updated. Responses and any errors on edit from SARS are immediately communicated to clients.

Audit trails are captured throughout the application to track changes made to data. Strict security is applied to the web front-end and only registered users are allowed access to their data.



For preparation of tax certificates, clients send files with the relevant data to Multi-Data. SAR edits and reconciles the information and creates the tax certificates. The certificates' data is then sent to SARS according to certificate type. For dividends (IT3 extracts) and contribution certificates, Connect:Direct performs this task, and for the IRP5s e@syFile from SARS is used. An image of the certificate is stored on OnDemand, enabling the document to be e-mailed to the client, or accessed via the Internet.

Y2K: Decision time

Many of Multi-Data's systems were not Y2K-compliant and, as it was not economically viable to upgrade these systems because of a diminishing client base and the general availability of PCs, client server packages and web-based systems, KOP, WYN, NFI and RNT were closed down before the year 2000.

Multi-Data's other systems, such as SOL, KOS and DIS, were upgraded successfully to be Y2K-compliant.

Corporate history

In 1991 South Africa changed from the general sales tax (GST) model to value-

added tax (VAT). As a result of legislative requirements at the time, Multi-Data was required to be more clearly differentiated as an external company, separate from Sanlam, as the new tax laws stipulated that insurance companies were not permitted to lease their infrastructure or computer systems.

Following internal restructuring within Sanlam in 1998, Multi-Data moved to the Sanlam Employee Benefits (SEB) division because of potential cross-selling opportunities within that division.

In May 2002 the payroll division of Multi-Data was sold to BDB (a joint venture between Nedcor and Absa). On 1 January 2005 Multi-Data was incorporated back into the Sanlam Life legal entity. It retained its trading name while operating as a division in SPF.

In 2012, Multi-Data expanded its staff complement by adding a sales force to assist with marketing its products to external clients. Since 2012 Multi-Data has reported to Sanlam Business Development.

Sanlam Investments and Sanlam Properties' systems

Every day millions of rands are invested in Sanlam's insurance and investment products. Once the transactional processing on new business administration systems such as POL, Epsilon and SUTUWA has been completed, the money must be invested to ensure proper returns for the clients. Traditionally, most of the money was invested and administered by Sanlam Investments, hence the need for proper investment administration systems. Today, investors have a choice of investment funds other than only Sanlam's, implying an even more diverse and complex array of investment administration systems across a multitude of investment houses.

While Sanlam Properties was still in existence, its systems were supported alongside those of Sanlam Investments. As of the late 1990s, Sanlam Investment Management (SIM) became responsible for its own IT operations and therefore only a brief historic overview is provided below.

In-house-developed investment management systems

The following in-house-developed systems have been used by Sanlam Investments since the 1970s:

- Portfolio Management Information system (PBI), developed in 1971, was responsible for the management of shares;
- Portfolio Management and Administration system (PBA), developed in 1973, was responsible for the management of investments, including the income and interest generated by assets; and
- Portfolio Management system (PRT) was developed in 1973 to manage the investment in unit trusts.

Like most of the mainframe systems in the 1970s, all three of these systems were developed in Assembler. In the years that followed, more programs were developed for investments under the BEL system name.

In the days of the BEL system, the JSE's trading data was delivered, in tape format, to Multi-Data's offices in Johannesburg after the stock exchange closed at 17:00. After the Sanlam programs to determine the unit prices had been run (at Head Office), this information had to be communicated to the daily newspapers before 19:00 – by phone via landline! (Those were the days before the Internet, when people were still dependent on newspapers to obtain share prices.)

In October 1992, the BEL system was replaced with the BBS Investment Management System, which was developed in Ideal, running against a Datacom database. BBS was developed at the same time as Sanlam Collective Investments' new SHR system and Personnel's redeveloped PAY system. These were the only significant systems developed in Ideal.



HiPort

In 1995 a project was launched to replace the BBS system with HiPortfolio, an investment management and accounting package that supported front- and back-office activities and addressed multi-currency and straight-through processing. HiPort, as it is generally known, offered increased functionality over the Ideal/Datacom system, which then became end-of-life. In 1997 Sanlam Asset Management (now Sanlam Investment Management or SIM) commissioned HiPort as its asset management system.

Properties (Gensec)

In 1980 the original Assembler system (HUR) was replaced by the in-house-developed Properties (EDM) system.

In the early 1990s development started on the EDB system, which ran on an AS400 platform and was designed to integrate with the Walker general ledger system. This was never implemented. Instead, in 1995, a server-based system known as Proptools was developed in Visual Basic and later upgraded to VB2. When Gensec merged with JHI properties in 2007 all data was migrated to the Nicor property management system.

Personnel and Human Resources' systems

Ensuring that staff information is correctly stored and managed is a high priority for Sanlam. The IT systems that were used to process and record staff information and transactions have changed quite drastically in the past three decades, moving from punch cards to a PAY system on Datacom, then to a packaged Oracle solution and, finally, to the current SAP HR Management system that is still in existence today.

Back in the 1980s and early 1990s, the Personnel department made use of an in-house-developed PAY system to process all personnel transactions (for example appointments, resignations, salary increases, leave, marriages and the birth of children) via a batch job, which ran during the night. These transactions were written on 'coding blocks' and sent to the data capturing department under the leadership of Sannie Thesner, to be punched onto punch cards (which were later replaced with electronic 'card images'). These were then sent to the mainframe operators as input for the batch job that ran at night.

Aside from the original PAY system, a big computer (ironically known as the MINI), which resided in the Personnel department, was used at this time to process motor vehicle transactions and transactions involving temporary staff.

Rewriting PAY

In 1993 a new online personnel system was developed in Ideal on a Datacom database. The new system, which retained the PAY system name, allowed clerks to execute transactions on visual display units (VDUs) in real time and the system also kept track of how far clerks had progressed while inputting this information – they could log

on at a later stage and resume their work where they had left off. During the day, the online system's data resided on Datacom and at night, before the batch jobs started to run, the data was transferred from the database to flat files for the batch runs, which still utilised some of the original PAY application. After the batch jobs were run, the data was transferred back to the Datacom database for use in the online system the next morning. In 1994 all online databases and batch job's data was migrated from Datacom and variable block tapes to a DB2 database.

Replacing PAY with Oracle

In 1998 the Oracle HR package was selected to replace PAY. The appeal of the package solution was that Oracle offered an extensive human resources (HR) system solution, and not just a payroll like the PAY system. Unfortunately, Oracle's implementation did not live up to expectations, which resulted in some unforeseen resistance and dissatisfaction from the business. At this stage, many business units within Sanlam were also in the process of moving away from a centralised HR administration function to a decentralised HR administration model with their own payroll systems.



Replacing Oracle with SAP

Early in the new century, Sanlam Personal Finance made the decision to move to the SAP HR management system because of many perceived benefits that would result from this. Most of the other business units, including the Group Office and Employee Benefits, who were still using the Oracle solution at the time, followed suit and became part of the SAP migration project.

The SAP implementation took place on 1 March 2002. It was a so-called 'wall-to-wall' HR implementation, which meant it

entailed all components, including payroll, leave, training, compensation and the implementation of self-service capabilities for staff and line managers.

The SAP system has since been upgraded on numerous occasions to remain on track with the latest versions available in the market. All South African business units in the Sanlam Group have been moved to SAP, including Santam, which moved over during 2013.

Web and mobile applications

www.sanlam.co.za: Where did it all begin?

The Electronic Business (E-Biz) project was started in 1992/1993 with the objective of enabling e-business for Sanlam. E-Biz also included the Lotus Notes development team and had a total staff complement of approximately 70 people. Deon Meyer, who later became a well-known author of books such as *Orion* and *Thirteen Hours*, was one of the visionaries behind Sanlam's very first web presence.

In September 1995, Sanlam's Internet site, www.sanlam.co.za, was launched. The website allowed clients to perform self-service enquiries on policy values, but did not offer any transactional capabilities. Sanlam was the first local insurance company to offer the service. In 1997 Sanlam won *Business Day's* 'Corporate WWW of the Year' award for its Internet site.

E-Biz: Ahead of its time

Sanlam was ahead of its time on the E-Biz project and, although the team was dissolved at a certain stage, the team was reconstituted once again for Lotus Notes purposes and to maintain and enhance Sanlam's web presence in 1998. The developers who were brought in were later deployed on the Cosmos project to establish a Sanlam web page on the Internet. The Brokers and Advisers Web (B&A Web) also formed part of the Cosmos project.

Sanlam Intranet

In October 1997, the Sanlam Intranet was

launched for staff members. A prerequisite for this launch was the manual installation of the Internet Explorer browser on hundreds of users' computers, as browsers were not installed as part of the default desktop configuration used at the time. The very first Intranet provided services such as a telephone directory, news on Sanlam activities, a daily restaurant menu and news from local newspapers. By January 1998, 600 registered users had signed up for Intranet access. Over the years the Intranet has expanded tremendously and now acts as a central place for accessing numerous 'internal' web applications such as SAP, Genome, E2-Financials and the ITISS Service desk.

B&A Web

Following the Intranet, the B&A Web was launched following investigations to determine the needs of brokers and advisers. Security was a priority, although it was not a transactional site at first. Security on the site is much tighter today than it was for the initial implementation.

All websites were initially developed on the ASP Classic platform. This was a new technology to Sanlam developers at the time, as the developers were largely familiar with only the Notes environment.

Secure Services: Transacting via the Web

Secure Services was developed in 1999 by Sanlam Unit Trusts (later renamed Sanlam Collective Investments) to give its clients Internet access to their investment portfolios and certain transactional facilities. It was originally called S-Online, but had



to be renamed, as the domain name had already been allocated to another non-financial services provider.

The system was written using Microsoft Active Server Pages (ASP) technology, with the back-end systems using COBOL modules accessed via DB2-stored procedures on the Sanlam mainframe.

Over the next few years, Innofin (which later became Glacier) and Sanlam Life were added to the Secure Services platform, thus giving their clients access to their portfolios via the web. Sanlam Personal Investment (SPI) portfolio values are available if the client registered via either Sanlam Collective Investments (SCI) or Sanlam Personal Finance (SPF), with no transactional capability.

In 2005 proxy functionality was added to Secure Services to provide for third parties who needed to gain access to portfolio information.

Currently (2014) more than 205 000 Sanlam clients are registered to use the system to gain access to their portfolios via the web.

In September 2011 the Secure Services application's look and feel and the portfolio view were upgraded to provide a consolidated view of all the products a client had with SPF, Glacier, SCI and SPI on one page. However, the various businesses still have their own administration systems to which Secure Services is linked.

Platform renewal

In 2000, I-Net Bridge's Business Intelligence Service (BIS) was made available on the Sanlam Intranet. In the same year the Sanweb project, which entailed the redesign and integration of the Sanlam

Intranet, Internet and B&A Web, was launched. This allowed content to be managed from a central point, which strengthened the Sanlam brand by giving the sites a uniform look and also allowed statistics to be gathered regarding site visits.

SanlamConnect

In 2005, an innovative, new web-based distribution model for the lower-middle market was introduced. It consisted, inter alia, of a self-directed model that allowed clients to connect to the system via the Internet without the assistance of a consultant. When the project was started in 2005 it was called Project Harold, which referred to a web cartoon, Harold, the holy cow. The name was chosen by Anton Gildenhuys (Business Sponsor) because the new model was geared to challenge the typical intermediary-centred model. Just before the model went live in October 2007, the name was changed to SanlamConnect.

Retirement Fund Web

Sanlam Employee Benefits (SEB) produced its first web offering to their clients and fund administrators in 2000/2001 under the Wizard-Online banner. This solution was subsequently redeveloped and is now known as the Retirement Fund Web.

Renewal of the Internet and Intranet sites

The Sanlam Intranet has not been upgraded since its development in 2000/2001. The user interface needs to be updated and is currently receiving attention. The Internet site, www.sanlam.co.za, was upgraded in 2008 by an external company, Liquorice, and was rewritten on the IBM Web Content Management (WCM) platform.



Renewal of the B&A Web and the first mobile app

The B&A Web was replaced as part of Project Saturn. The new website, SanPort, was launched in September 2012. SPF's first iPad SanPort application was launched simultaneously with the new website, a big win for IT on innovation and delivery to business.

Client Portal project

In order to offer a better service to clients and replace the old technology in which Secure Services was developed, a new project, Sanlam Client Portal, was initiated in 2012. Sanlam Client Portal will replace Secure Services and, where applicable, integrate into existing Sanlam Client web applications via Single Sign-on. Examples

of Sanlam Client web applications include: Glacier Client Web, Sanlam Private Wealth Online Portfolio View and Sanlam iTrade.

The objective of the project is to create a new web presence for clients that will enable them to access their entire Sanlam portfolio via one portal supported by value added services, for example a central process to access tax certificates and statements, and to initiate changes to personal details. Sanlam Client Portal will create a platform to add more products and services in future. It will offer clients a trustworthy, secure experience through implementing security services based on the same security platform used by, among others, the SanPort website for intermediaries.



Y2K: Avoiding the millennium time bomb

Sanlam geared itself to meet the technological and business challenges presented by the year 2000 head on. To this end, the company launched its Year 2000 programme (Y2K) in December 1996 under the leadership of Leon Venter, general manager: Business Systems. Sanlam's executive management committed to proactively managing and resolving the millennium time bomb – also known as Doomsday 2000.

In the early days of computers, memory and data storage were very limited and expensive. Input to systems was based on punch cards (or card images) that could only contain 80 bytes of data and an obvious solution was to omit the century portion of all date fields, resulting in a two-digit field instead of a four-digit one. To save on storage space, the century was also omitted from permanent storage media such as disks and tapes. The problem that arose was that from 1 January 2000 computer programs could not distinguish between 1901 or 2001, for example, and this would have led to large-scale mayhem and miscalculations.

In the 1970s and early 1980s there was a general belief that all computer systems would be rewritten every five to seven years, which would have allowed for the rectification of this issue before it became a real problem. Unfortunately, the replacement of the first- and second-generation applications did not happen as anticipated, which necessitated Sanlam embarking on a massive Y2K programme

to inspect and rectify all systems where necessary.

The problem could be solved in a number of ways. The obvious solution was to extend all data fields by two digits to include the century. However, this solution was not feasible, as it would require a significant amount of work and would be excessively costly and very risky, as complete systems had to be rectified, tested and implemented in a 'big-bang' approach. All historical data files also needed to be rectified. An alternative solution was to include logic in the underlying systems where date calculations or comparisons were made by using the 'sliding-window' approach. This meant that a 'window' of 99 years was determined in relation to the current date. The Technical IT Department ('Programmeringsondersteuning') developed a utility program to supply the logic required, as software tools developed by vendors were found to be unsuitable for the requirements. This 'sliding-window' tool was used by all the various IT departments that had the two-digit problem.

Apart from our own systems, there were numerous interfaces to third parties such as banks, Multi-Data's clients and companies with stop order facilities. All of these interfaces had to be investigated and, where necessary, rectified in co-operation with said third parties. The Y2K programme became much bigger than was initially anticipated, which resulted in external people being contracted in to assist. Even some retired people who knew the older



programs were approached to help in the task of fixing them.

The Sanlam Life systems were the oldest and largest, and were therefore the biggest problem area. In order to keep track of the more than 7 300 programs (in excess of 7 million lines of code) it was decided to use a Rochade repository as an inventory tool. By using Rochade's capabilities, progress as to the number of programs and date instances could be both measured and corrected. Rochade could also supply the 'calling chain' of programs used to execute a function or transaction, therein supplying a valuable tool in planning, control and testing.

A Lotus Notes database was also designed to keep track of the eight combinations of date tests that were performed on the various transactions and events.

The Sanlam Life testers also used the VACT (Visual Age COBOL Tester) tool that enabled testers to capture input and output data from Istel screens. This enabled easy manipulation of dates, and transactions could be rerun to automatically compare answers using the Compare tool.

Other tools used were the 'Sand-box' mini-mainframe computer in conjunction with the TicToc application (supplied by ISOGON) to manipulate the current date to suit the type of test needed. Sanlam Employee Benefits was fortunate in that about 90% of its date-related fields were already compliant.

Multi-Data decommissioned some of its systems that could be replaced by packages and terminated those that were no longer financially viable. Its main effort revolved around interfacing with banks (DEB, KOS) and the salary systems that they ran for clients.

One of the biggest challenges the programme faced was convincing people that the Y2K programme was necessary, that the issue was real and that the businesses should allocate resources to assist with the task. Another challenge was to stick to the timelines – all software had to be fixed and tested before 31 December 1999.

By the end of December 1999, everything was complete and a good number of real transactions were held over to 'test' in the production environment. The 1st of January 2000 was a Saturday, allowing for some leeway should problems have been encountered. In the Sanlam Life systems only one error (of little consequence) was discovered. Interestingly enough, a Y2K-related error was discovered at the beginning of 2001 and rectified without major complications.

The sterling work completed on a worldwide scale led many people to believe that all the hype was a storm in a teacup! However, without this work a very different scenario could have emerged.



5

People, Processes and Technology

To ensure Sanlam IT delivers only the best by the best trained people, various technology training courses have been developed since the 1970s. This focus on staff development continued through the years and is still crucial to the success of the IT organisation.

A number of development tools and technologies have been, and still are, used within IT. All application development was done in-house until the mid-1990s, when it started to make sense to outsource some work to contractors, software vendors or even to introduce packages. This outsourcing model initially focused on project management and was later expanded to various other roles in the organisation giving rise to what is now known as a multi-partner sourcing model.

The introduction of formal software development processes and methodologies allowed SPF IT to deliver a higher quality of service, in a more predictable way, to its customers.

Training and development: Investing in our people

Training is vital to any successful organisation, especially when it comes to the optimal use of technology. As Sanlam was one of the first organisations to use computers commercially in South Africa, training for developers was essential from day one. Although the organisation was reliant on IBM for the initial training courses, a very successful in-house IBM mainframe Assembler training course was developed and presented for many years. Large numbers of staff members (and even Bankorp Data staff) attended this course as their first exposure/introduction to programming. These candidates were recruited from business departments, with the added benefit that they understood Sanlam's business very well – a key success factor in the first two decades of system development in Sanlam.

Entry-level training

In 1994 Sanlam's internal three-month Assembler programming course was accredited by the Cape Technikon (now known as CPUT) as the equivalent of a full year of its 'Development Software I' course. The above course, in addition to teaching Assembler programming, also taught programmers general programming concepts and techniques, such as program design and business analysis. The course was first developed in the 1970s and was formalised in the early 1980s by Piet van der Vyver and his team from Information Systems: Training. In a very innovative way, this course was adapted for housewives who wanted to become programmers but could only work half-day because of family responsibilities in the afternoons. Out of 170 applications, 10 women were trained in 1984, some of whom were still employed by Sanlam in 2014. The Department of Labour awarded Sanlam with a trophy for this initiative.

Another interesting event involved the training of a number of internal auditors in Assembler, followed by almost a year's programming on the mainframe systems. This experience positioned the auditors for more efficient systems auditing.

A very basic COBOL course was available during the 1980s and was supplemented with videos from the Deltak Corporation. As a result of the growing use of COBOL, an entry-level COBOL course – equivalent to the Assembler course – was developed and presented to candidate developers earmarked for teams where COBOL was used more than Assembler. Other technical training such as Easytrieve, TSOTest, Abend-Aid and Ideal programming was conducted by specialists from the Programming Support division.

During the late 1980s and 1990s, increasing numbers of staff members with external IT qualifications and prior development experience were appointed. Combined with the need to start training people



in PC development languages, a new approach to training was required. A combination of self-study and ad hoc courses paved the way for the first PC systems developed in languages such as C, C++, Clipper and dBase. As additional graduates joined IT, the opportunity arose to introduce software engineering into an environment where most of the developers had only programming skills. The first software engineering methodology, SOP, in IT was developed in 1994 for Sybase. This methodology was used during the development of WACMAN – a work and cost management system for IT's internal use.

External training was the preferred choice in the Project Management discipline from 1994 onwards via IBM's 'Managing the Implementation of the Total Project' (MITP) course. All permanent project managers were required to attend this course when they first joined the organisation. As more contracted project managers were used, this formal training mostly fell away. Training was still provided for specific soft-skills topics like Assertive Leadership, Facilitation or, if deemed required for a project manager (permanent or contracted), to know more about his or her project's business content. In 1995 the Business Systems: Training (BST) division was formed, following the amalgamation of the former IT: Training and Office Systems: Training divisions. BST offered technical training in databases and programming languages to developers, and end-user training in software to users. At the end of 1995 a total of 2 554 Sanlam staff members had attended internal training courses presented by BST.

In 1997 BST launched after-hours training in COBOL, Visual Basic, Lotus SmartSuite,

the Microsoft Office package, Windows 95 and Windows 3.1. Courses were offered on weeknights from 17:00 to 20:00 and on Saturdays from 08:30 to 12:30. The last Assembler and COBOL courses were presented in 1997. BST was outsourced to CS Holdings in 1999, which signalled the end of in-house entry-level programming training at Sanlam.

Systems analysis training

The role of the systems analyst became prominent in the late 1990s, with the Faculty Training Institute (FTI) being the first organisation in South Africa to offer a Diploma in Systems Analysis. A number of Sanlam employees completed the first Systems Analysis Diploma course from October 1998 to March 1999. The topics covered by the course included the role of the systems analyst; how to perform structured analysis; as well as modelling techniques relating to the retrieval of information from users.

In later years, the importance of structured analysis was soon overshadowed by two new buzzwords within the arena of systems analysis: object-oriented (OO) design and unified modelling language (UML). The Faculty Training Institute subsequently offered courses in systems analysis in both the OO and UML methods, which were also attended by many Sanlam staff members.

HPS and COOL:Gen Training

The acquisition of HPS in 1994/1995 necessitated the training of many analysts and developers in the use of the SEER methodology and toolset. The first courses were conducted by international consultants. Business Systems: Training positioned itself to become an accredited HPS training authority. However,



owing to HPS being disbanded in 1998, this competency was no longer required. The introduction of COOL:Gen once again necessitated a significant amount of training, but this was delivered at a lower cost, as the vendor (Usko) was a local organisation.

Development programmes for IT managers: Diploma in IT Management

Finding good managers is always a big challenge, especially in areas dominated by technical specialists such as IT people. In SPF IT this challenge was experienced first-hand where senior technical people became managers to justify promotion and a bigger salary, irrespective of their ability and desire to become managers in the true sense of the word. In 1996 SPF IT (BSSL) decided to recruit staff from Sanlam's HR department with the necessary soft skills to manage the various IT teams. Seven people were recruited and began their careers as managers in IT in January 1997. Senior team members were required to help these new managers with tasks such as managing the daily operations and the allocation of staff to projects.

In early 2001, IT's senior management decided to send a group of managers on a formal IT Management course. Several training institutions were approached for proposals to design a course that would meet Sanlam's needs. Faculty Training Institute (FTI) was selected to present the course.

The course was run on a part-time basis from August to December 2001. Half of the course was technology-related, while the remainder related to IT management issues. The course consisted of three modules, covering the software development

process, IT management and managing projects.

The first module covered the role of IT in business, the software processes, initiating projects and understanding systems through modelling and requirements definition techniques. The second module focused on managing software quality, managing IT risks, package acquisition, systems implementation and outsourcing models. The final module dealt with project management and the management of IT people.

The course gave a wide practical perspective of the important facets and challenges of IT management. Although this course was only presented to this initial group of incumbents, it laid the foundation for improved and sustainable management development and HR development processes in SPF IT. It was also the forerunner of many other management development courses, such as Stellenbosch University's Management Development Programme and the Senior Management Programme, which are still attended by Sanlam staff from other departments as well. Additionally, over the years there was a marked increase in the number of technical staff who opted to obtain a Master of Business Administration (MBA) degree in their private capacity, in pursuit of a management career in IT.

Blended learning

In 2003 an IT Training Centre, referred to as 'The Greenhouse', was established on the seventh floor. It was called The Greenhouse because the idea was that you went there to grow and nurture your skills. The Greenhouse was home to some of the IT Training books and videos (which are now housed in the IT Research Centre) and was



also used for classroom training by external facilitators.

The Greenhouse was established in conjunction with the launch of online learning, which could take place either in the IT Training Room or at your desk.

The shift from formal internal training (as had been provided by BST) to a more user-driven learning experience was referred to as the beginning of 'blended learning solutions', which coincided with the launch of the eM-Power credits programme.

With the focus no longer squarely on entry-level development training, technical training could shift focus to newer topics such as security and architecture. In the area of architecture, training was provided by subject experts such as Graham McLeod, Dana Bredemeyer and Deon Pollard. IT research houses such as Forrester and Gartner also contributed towards understanding new technology concepts and helped to define sensible adoption approaches for emerging technologies.

Developing soft skills

During the first decade of the new millennium, learning and development began to focus increasingly on soft skills and leadership development. Three successful Investors in People (IIP) international accreditations were attained in 2006, 2009 and 2012, and leadership, mentoring and quality of thinking started to receive increased attention.

At the end of 2010, the first team of managers from SPF: IT Development attended the 'Nine Conversations in Leadership' course, with the last group completing the course at the end of 2012.

The 'Time to Think' course was launched with great success in 2011 and had a big impact on the work environment and on the way that meetings were run.

The 'Time to Think' course subsequently gave rise to the establishment of Thinking Partnerships in 2011, in which 17 pairs of mentors and protégés met regularly to 'think' together and to encourage the protégés to come up with their own solutions to challenges facing them, as the whole premise of 'Time to Think' is that the mind that holds the problem holds the solution.

During this period of time, technical training continued to be provided to IT staff. The training offered was dictated by the skills requirements at the time ('Just in time' training) and also by relying on the expertise of in-house specialists to dictate which courses were most relevant, and whether a public course, or a course customised specifically for Sanlam staff, would be most beneficial.

Training for the future

Today, various training providers are contracted to provide training as the need arises. Training providers such as Bytes People Solutions, Polymorph, Torque-IT, FTI, IBM, ISEB and others render services to ensure that the technical staff members are equipped with the right skills and capabilities. Web-based training is also proving to be a viable alternative to classroom training, especially when the audience is small and courses can be attended almost immediately.

It is unlikely that the need for IT training will ever disappear. New and more advanced development tools and methodologies are launched regularly.



Whenever Sanlam (SPF IT) buys a new development product or tool, training costs are always an important consideration when it comes to the calculation of the total cost of ownership of that product/tool. One of the more recent examples in this regard was the acquisition of IBM's Infosphere Information Server (IIS), including products such as Datastage and FastTrack, which required training for Sanlam's own, as well as contracted staff. The SMaRT project

also made use of IIW as the reference architecture for the development of the Asset Data Warehouse, which once again required training conducted by overseas trainers and consultants. Specialist training such as this, required by a small group of users, as well as the ad hoc, diverse and just-in-time training for the mainstream products, makes it impossible to revert to in-house training such as that which Sanlam had previously relied on.



Development tools and technologies: From punch cards to the present day

Mainframe development

Initially, all Sanlam's business and even some technical applications were developed in-house. All development took place on the mainframe, where languages such as IBM's Assembler, COBOL, Fortran and Easytrieve were used. PL/1 was also in use for a limited period. Assembler and COBOL were the languages used for the development of business logic, while Fortran was used for actuarial calculations, which were virtually impossible to code in Assembler. Sanlam's Legacy policy administration system (POL), as well as supporting systems such as the New Business system (NUB) and the original general ledger system (REK), were all developed in Assembler. Easytrieve was (and still is) used for relatively simple reporting solutions.

Given Sanlam's original single-platform/mainframe strategy, systems were relatively stable during this time period. Entry-level training in Assembler and later also in COBOL was conducted in-house and development standards were applied company-wide. All of the programming standards were filed in a folder commonly known as the 'Groenboek' (green book). A team of administrative staff maintained each developer's 'Groenboek' as new standards were developed or older ones were changed or enhanced. (See below for the standard that was used for formulating a program name on the mainframe.)

A program name normally consisted of five characters, of which the first three represented the system name, such as POL or AGT, and the fourth and fifth characters indicated the frequency and range. If there were more than 100 programs per frequency, a sixth character could be added. The frequency and range codes were allocated as follows:

00 – 099: Programs used one or more times per day

10 – 199: Programs used one or more times per week

20 – 299: Programs used one or more times per month

30 – 399: Programs used one or more times per quarter

40 – 499: Programs used every half year

50 – 599: Programs used once per year

60 – 699: Programs used during conversions and/or takeovers

70 – 799: Programs used as LOAD and CALL modules

80 – 899: Programs used infrequently

90 – 999: Programs used on a once-off basis

XA: Programs used to submit Job Control Language (JCL). The X indicates the frequency as above.



Following this standard, POL20 would indicate a program in the policy administration system that runs monthly and AGT70 would indicate the name of a reusable module in the intermediary administration system that is callable from various other programs or even systems other than AGT. SOL1A, for example, was a scheduling program that, depending on various input parameters, generated JCL for the scheduling of SOL100 for Multi-Data's various clients. (The need for in-house-developed scheduling programs was reduced when Sanlam began to use CA7, Computer Associates' mainframe scheduling package.)

Although all applications were originally developed using punch cards, mainframe editors and development aids such as TSO and TSOTEST made it possible to change programs via 3270 terminals. Roscoe became the standard mainframe editor during the early 1980s. TSOTEST was the only testing aid available for Assembler programmers at the time. COBTEST, the COBOL equivalent of TSOTEST, allowed for much faster testing and its use was restricted to the early adopters of COBOL in Sanlam. Smartview became the official mainframe testing tool in the late 1980s. Other popular mainframe development tools that were also used included Abend-Aid, Dumpmaster, Strobe and Rochade – the latter being a repository tool that assists developers with impact assessments.

JCL, for the running of production jobs, was originally punched on coloured punch cards and supplied to the computer operators on the particular day of a 'job run'. Roscoe also replaced this method during the 1980s. CA7, a mainframe scheduling tool, was acquired during the late 1980s and allowed

for automated scheduling of all mainframe jobs.

CASE tools

During the 1990s, CASE tools gained prominence within Sanlam. CASE tools allowed for model-based development and the applications that were generated could be deployed on both PCs and the mainframe.

BSSL evaluated Natural Adabas, Huron, Sapiens, IEF and Seer Technologies' HPS in 1994. HPS and Sapiens were short-listed and eventually HPS was chosen. IBM South Africa was HPS's implementation partner. The implementation of HPS involved extensive training of Sanlam staff – most of which was given by overseas consultants. Four pilot projects – known as trailblazers – were developed to give newly trained staff members the opportunity to gain some practical experience before the first major development project kicked off.

The Finpro project kicked off despite the fact that some of the trailblazers were still being run. With the limited amount of in-house HPS experience at the time, the programme was forced to recruit many overseas HPS consultants and contractors, which significantly affected the programme's budget. Finpro used HPS for the development of Sanlam Personal Portfolios' 'Unit linked products' administration system (ULP). Shortly after the system was implemented, Seer Technologies' reputation was severely damaged when it ran into financial difficulties in 1997. Kobus Venter and Hannes van Rensburg, along with an analyst from Sanlam Investment Management (SIM), investigated the situation and recommended that Sanlam should refrain



from starting any further HPS developments. A subsequent investigation, the Development Platform Selection project, resulted in the purchase in 1998 of COOL:Gen from Sterling Software, formerly known as IEF, as a replacement for HPS. At the time COOL:Gen had a fairly big international footprint, which included South African customers. During the investigation COOL:Gen was a clear winner after demonstrating much higher productivity levels than any of the other contenders. Another factor in COOL:Gen's favour was that it had local representation, and skilled resources were easier to obtain. Usko (which became Bytes Technology Group) was the local representative at the time.

The entire Lamda CASE management system was developed in COOL:Gen, leveraging its integration capabilities. Other significant COOL:Gen developments included CIS, Sanlam Stop Orders (SSO), COOL:Client and the Risk Product Engine. The COOL:Gen systems were exceptionally stable and required very little support from IT. It was therefore only during a cost optimisation investigation in 2005, when the number of systems already developed in COOL:Gen was uncovered, that IT considered ending its usage. It became clear through this exercise that COOL:Gen's usage was diminishing and that it would not become the strategic development tool initially envisaged at Sanlam.

Increasing numbers of software packages were acquired and new developments were taking place in Java and Microsoft .NET. Consequently, new licensing conditions were negotiated with Computer Associates (CA), which had since acquired COOL:Gen, resulting in significant savings for SPF IT.

Over the years COOL:Gen's name changed to Advantage:Gen, AllFusion:Gen and, finally, simply Gen.

Non-mainframe development

It was only when PCs were introduced with development languages such as Quick Basic, dBase, C, Clipper and Visual Basic that the traditional IT model came under threat. Not only did this create opportunities for empowering business users, it also altered the way in which Sanlam used to govern its IT operations, recruitment, training and development practices. This also proved to be a watershed moment in terms of Sanlam's long-standing relationship with IBM and central governance, which now had to be adapted for a distributed model with more development tool vendors and, initially, less rigorous methodologies and standards.

In the early 1990s, non-mainframe based programming languages such as C and C++ were used to develop infrastructure applications within Sanlam. The move from PC Assembler to C and C++ offered more understandable development languages and also ushered in object-oriented development. This enabled the creation of an internal development toolkit for 'Sanlam Interaktiewe Stelsel' (Istel), which was developed in C++, while 'Sanlam Interaktiewe Transaksie Administrasie Stelsel' (Sanita) was developed in C.

C and C++ were closely followed by Clipper, a development language used alongside dBase III, which allowed database processing by means of a PC. Many of Sanlam Distribution's applications, such as SanQuote, were initially developed in Clipper.

In the late 1990s, Microsoft's Visual Basic gained prominence and Sanlam gradually moved away from the use of Clipper. Visual Basic offered improved support and a host of new functionalities, which led to the general embracing of the Microsoft Visual Studio platform within Sanlam.

In the early 2000s, increasing demand for client server and web development gave rise to the 'Development Language Strategy' in SPF IT, which stipulated that Java would be the preferred development language for enterprise developments, alongside Microsoft's C#. It was then decided to retain Cool:Gen as a development platform, but not to use it for any significant new developments. COBOL was classified similarly.

The early 2000s saw the first adoption of Microsoft .NET in Sanlam in the form of VB.NET. At that stage most of the client-facing application development was via the Microsoft .NET platform, while Java was used mainly for the development of the non-client-facing back-end services. For example, .NET was used for the front-end development of SanlamConnect.

When Microsoft announced it was terminating support for Visual Basic 6 (VB6), Sanlam already had a sizeable portfolio of VB6 applications. In order to rewrite these applications, commonly referred to as 'Technical Debt', special funding had to be acquired from SPF's Project Portfolio Investment Committee (PPIC). By the end of 2013 most of the VB6 applications had been replaced with applications written in either C# and/or Java, while some of the remaining applications in Distribution's portfolio are currently 2014 being addressed as part of the SanPort programme.

In 2005, Java increased in prominence and became the official development language of choice for back-end development, generally referred to as the 'Why not Java?' strategy. Because of its strengths in the development of user interface applications, Microsoft was included in the development language strategy as an 'Approved alternative'. See the table below for an extract from the 2008 SPF IT Strategy document for development technologies considered to be 'Strategic' at the time.

		Strategic	Approved alternative
New development		Java, JSP, XML	Microsoft.NET using C#, ASP.NET
Development in existing portfolio	Promote	Java, JSP, XML	Microsoft.NET using C#, ASP.NET
	Contain	Assembler, Fortran, Cobol, AllFusion:Gen Microsofocus Cobol Oracle forms/report	None
	Retire	C++, PERL Lotus Notes, Clarion Siebel Scripting language**	VB6, VB.NET VB Scripting ASP
Not allowed		J# Delphi Smalltalk	VBA



One of the first Java applications in Sanlam was the Commission system developed by Tata Consultancy Services (TCS) in 2004/2005 using its proprietary development tool called Mastercraft. Although Mastercraft's integrated development environment (IDE) has been phased out, some Mastercraft libraries are still in use in the Commission Management System (CMS). The Sentrix solution in the Client Contact Centre was developed in Java, and Java was also selected as the development language for the biggest programme of this era, namely Project Renaissance, which involved a complete rewrite of Lamda – now known as Epsilon. Both Istel (2003/2004) and Sanita (2011/12) were also rewritten in Java.

Lotus Notes application development

Lotus Notes was the most popular groupware database during the early 1990s and was introduced into Sanlam alongside Lotus Notes e-mail, AmiPro and related office products in 1993. Lotus Notes provided a fast development environment for collaboration applications and activities. The very first significant Notes application that was developed was the Service Desk (helpdesk) application for the Programming Support division. The entire group of service providers could enter information regarding problems experienced on personal computers. User details were 'looked up' and entered automatically for each problem logged.

Numerous other collaboration and departmental applications were developed in Notes, including Santel, the database for staff's contact details, and DPM, the task-logging and -tracking system still widely used in the business and IT Development environments.

Integration

As Sanlam introduced more and more third-party applications (packages) and began to develop applications that ran on open systems, the need for formal integration mechanisms mounted. Integrating with the mainframe was a big requirement, as was integrating with Lamda when risk products were developed on that package in 2004. As far back as 2002, emanating from SPF IT's Service Based Architecture (SBA) strategy, it was understood that a messaging mechanism as a first-step integration solution offered the best foundational start.

MQ Series was the first messaging platform Sanlam acquired and this allowed for reliable integration with the mainframe and Lamda. With Service Oriented Architecture (SOA) becoming mainstream from 2004 onwards, the need for Enterprise Application Integration (EAI) middleware brokers reduced, and Sanlam went the 'direct' web services route, as enabled by application servers, open Internet transport protocols (SOAP and HTTP) and programming language support in both Java and .NET for web-services standards (WS-*).

As applications were modernised and replaced (for example, KOM with CMS, Siebel with Sentrix), the 2004 to 2007 timeframe saw the increased use of application servers such as WAS (IBM WebSphere Application Server) on open systems to host these new n-tier applications, as well as 'wrappers'/façades to mainframe transactions. From 2005 to 2007 the CCA Programme, SPF IT's SOA Reference Implementation in Sentrix, entrenched SOA as the predominant application architecture and integration style. Sentrix, being a reference



implementation, also included a BPM engine in WebSphere Process Server (WPS) and many related toolsets required for SOA (and BPM) in Rational products. This all laid the foundation for the renewal of Lamda, which started in 2009, based on the Sentries blueprint.



File and database management systems: From bits and bytes to terabytes

Flat-file systems used on the mainframe

Prior to the development of early commercial databases such as IMS, many 'database' systems were nothing more than a loose conglomeration of flat-file storage methods on magnetic disks.

Initially all of Sanlam's computer files were held in sequential order, as the records had to be stored on magnetic tape and were read/written using Queued Sequential Access Method (QSAM). Years later, when online storage increased, Sanlam began to use the Virtual Sequential Access Method (VSAM) for accessing data records directly on magnetic disks.

Back in 1968 the Basic Direct Access Method (BDAM) was used by Sanlam for data records that required fast access and retrieval. The policy master (POLSO) and membership (LIDSO) files were the Sanlam pioneers in this regard. POLSO, a hashing algorithm using the policy number as input, provided a unique key, which was the direct access location address on a disk. AGTSO (with information about Sanlam intermediaries) went online shortly afterwards.

In order to simplify maintenance, dynamically called modules (effectively reusable code) with '7xx' names (like POL70, LID70) could be called by any user program (independent of programming language) when requiring data services.

To condense policy records when held via magnetic storage, a system of POL sub-records was designed. When sub-records (where present) were brought into computer memory for processing, they would be 'unpacked' by 7xx modules to reside in their expected relative memory locations; the reverse 'packing' process would apply when writing out updates.

Database Management Systems (DBMS)

IMS/DB was the first DBMS used in Sanlam, specifically in the Sanlam Employee Benefits environment, and was used until May 2013, when the database was replaced with DB2. This move was not necessitated by technology restrictions, but was purely for financial reasons.

CA-Datcom followed in the footsteps of IMS/DB and supported several environments, with Sanlam Collective Investments (SHR), Investments (BBS) and Human Resources (HR/PAY) being the most important systems. POL, the policy administration system and the most important application in Sanlam in the early 1990s, moved from BDAM (where data integrity had to be managed by the application itself and not the DBMS), to DB2 from 1993 to 1995. Convincing the business to take this leap of faith to the DBMS would prove to be no easy task!

Initially, dBase III and dBase IV were used for the database structure of the Lamda

policy system within Sanlam. dBase was used in conjunction with the Clipper development tool, owing to the ease of use between dBase and Clipper. However, dBase IV proved less reliable than dBase III, and it was therefore eventually replaced with the FoxPro database management system within the Lamda environment.

In 1995, a major change occurred when Sanlam's mainframe relational database technology moved from Ideal/Datacom to Ideal/DB2. Ideal finally reached end-of-life in Sanlam in 1999, when all the remaining Ideal database applications were rewritten on a Microsoft IIS platform, with DB2 as the database.

In 2001 Sanlam Personal Finance's (SPF's) application database administration (DBA) services were outsourced to the AST Group. (AST has since been renamed Gijima AST and more recently, Gijima). The Gijima DBA team was managed by a dedicated internal Sanlam DBA manager. Several contract extensions followed over the years after the initial service period expired. The mainframe system DBA service was outsourced to T-Systems and was later taken over by BCX.

Other relational database management systems, such as DB2 LUW (DB2 for Linux, Unix and Windows), Oracle and SQL Server were acquired over time or became more popular. Specific usage and growth in the database area was largely dictated by business application requirements. A good example of this was when Sanlam Employee Benefits purchased the Wizard application, which ran on an Oracle database. Only two significant Oracle databases remain today, a financial datamart and the SEB fund administration application. The financial datamart is in the process of being replaced with a system

that will run on Microsoft SQL Server by the end of 2014. The Employee Benefits administration application will be in use until all the fund's surplus payments administered on it have been finalised and/or deregistered, which is expected to happen by the end of 2015.

DB2 LUW is still widely used, specifically as the data repository for the Sanlam call centre application. Sanlam's website uses DB2 LUW as its back-end database, as do various other IBM applications deployed in the Sanlam environments. Santam has also used DB2 LUW since 2010 for new business process management applications.

The SQL Server environment has grown exponentially over the past years, as SQL Server seems to have become the database of choice for the particular third-party business applications that Sanlam acquired.

The DB2 mainframe database still hosts all Legacy data and supports all the Legacy applications.

In March 2012 the SPF DBA function was once again insourced to Sanlam. This was as a result of ITISS regarding the DBA service as an integral part of its IT service offering to the rest of the Sanlam Group going forwards, so much so that it plans to extend the service offering to other companies in the Group. In this regard, Glacier and SEB RFA DBA support now forms part of the ITISS DBA service.

As part of the function's insourcing, Sanlam and Santam's DBA functions were amalgamated and the service was split into two areas: SQL Server, under the leadership of Reynette Collins, and mainframe and non-SQL services, under the leadership of Jan van der Walt. At the end of 2012, the staff complement comprised nine DBAs



in the mainframe and open systems (including Adabas, Sybase and UDB), and 13 in the SQL Server environment.

ITISS endeavours to keep the database software versions in line with technology advancement (version $n - 1$), but application

requirements often dictate database versions, resulting in two DBMS versions in use – particularly in the SQL Server environment – at any one time.



Development processes and methodologies: Finding the right fit

Until the 1980s, system development at Sanlam followed a very simple, and in fact informal, methodology based on just three steps: design, development and testing. As many of the developers then were ex-business people, they understood the business's requirements and could interpret and extend them to the point where IT actually gave the business more than it had asked for. As the IT industry matured, formal Systems Development Lifecycle (SDLC) methodologies started to appear. Sanlam evaluated various methodologies and software products that supported some of the techniques such as data modelling. Initially, these methodologies were immature and incomplete, and also met with scepticism and resistance from staff, who were used to doing things their own way.

The year 1991 saw the introduction of Infomet within Sanlam. Infomet's methodology made provision for a development environment where the eight building blocks, namely data, function, time, loyalty, strategy, operation, object and organisation, could be analysed. Infomet further offered a standardised way of working, which eased information sharing.

Development methodologies

In the mid-1990s Sanlam acquired HPS, a CASE tool supplied by Seer Technologies. The HPS Seer Development methodology was adopted in order to increase productivity in systems delivery. It was hoped that this new development methodology would allow, among other things, faster development of new products and the development of a new policy system for individual insurance.

Release management ('Weergawes')

The concept of 'release management' was introduced at Sanlam during the late 1990s to formalise regular system releases into the production environment. Previously, program changes were implemented on an ad hoc basis during the evenings and over weekends, but the business required more stability in the release cycle. The principle of release management is to establish fixed dates for implementation in advance and then to scope the delivery according to the available timeframe.

Today we have a very stable release management programme, with the number of releases (major production implementations) varying from three to six each year.



Development Process Methodology

The establishment of the Development Process Methodology (DPM) within Sanlam in 1996 was closely aligned with the newly adopted policy of release management in the business-as-usual environment. This process is supported by the DPM system (developed in 1997 in Lotus Notes), which contains workflow capabilities that enable the logging and prioritisation of tasks. The DPM system is one of the few remaining Notes applications in Sanlam and forms the backbone of the management of IT tasks in most of SPF's IT teams.

Systems analysis

In 1999 the role of systems analyst was established at Sanlam. The first group of systems analysts attended a training course staggered over a period of three months, beginning with a repeating cycle of formal lectures followed by practical home assignments and then a final examination. This course was presented by the Faculty Training Institute (FTI).

It is important to distinguish between process and systems analysis. Process analysis is at a higher level than systems analysis. It dissects, for example, a business process into the different steps or tasks within the process. Some of those steps could be manual and some could be done by a system. Systems analysis is where processes that need to be performed by a system are identified. These processes are then further analysed and converted into functional and non-functional requirements.

Establishing the role of systems analysts within Sanlam was initially met with some resistance, especially from the developers,

as they thought it would be unnecessary. Eventually it started to bear fruit and today it is recognised as an important link between the business and IT.

Systems analysts assist with the planning and prioritisation of the application development work, as well as the planning and execution of the initial integration and functional testing. They are also involved in the implementation of an application and subsequent production issues.

Systems analysts often need to act as project managers and quality assurers in ensuring that the application meets the business requirements – keeping both the business and IT happy. Systems analysts therefore need a good understanding of how the business works, together with sound technical knowledge. Both these sets of knowledge are of the utmost importance in ensuring business value-adding applications. Therefore systems analysts are expected to be great team players and excellent communicators.

Although systems analysis was originally geared to procedural development, the adoption of object-oriented (OO) languages such as Java and C# necessitated the move to object-oriented analysis and design using UML.

Process maturity

Software life cycle process maturity became a focus area in the early 2000s. The Software Process Improvement and Capability Determination (SPICE) model, officially known as the ISO 15504 standard, differentiated between five different levels of maturity. The first SPICE assessment indicated that Sanlam was at a maturity level of 1.5 and the objective was set to aim

for level-3 maturity. Capability maturity models like SPICE provided an objective framework for the attainment of maturity and thereby allowed effective process improvement. The first project to be developed using SPICE principles was the redevelopment of the Sanlam Unit Trusts' SUTUWA system, which attained level-2 maturity. Some of the templates developed in the early days of process maturity are still in use today and reside in the Quality Management department in SPF IT.

Object orientation

OO design and UML became increasingly important in the first few years of the new millennium. Not only was OO significantly different from the traditional (procedural) way of doing things, but it also required a significant investment in training, as well as SDLC methodologies.

Agile development

In 2011 Agile development was incorporated into Sanlam's SDLC methodology on two projects: KOM2CMS and Saturn. Previously, all big projects within the organisation used the 'waterfall' approach, while Agile development adopts an iterative or incremental approach. The Agile approach encourages the business and IT to work together from the outset, and the business is aware of each increment's functionality as it is developed, thereby providing the opportunity for improvements to be implemented timeously and at a much lower cost.

Function Point analysis in SPF IT

Software sizing and estimation are always contentious topics – more so when the end results of software projects are far off from

the original estimations.

Function Point sizing was introduced to SPF during the 1980s, but only to test the technique. It was revisited on the Finpro programme during the 1990s, but still not formally implemented. At this stage, formal sizing was only used by a few individuals and gradually introduced to the wider community. However, there was always scepticism around the topic of sizing, especially because of the focus given to the Lines of Code technique, which did not deliver consistent and reliable sizing results.

During 2003 the sizing debate was reopened in SPF IT. The problem regarding project results versus estimations had not disappeared; in fact, it had probably intensified. SPF IT appointed a vendor, QuantiMetrics, to support the increased focus on formal sizing and estimation. Some progress was made during smaller projects after the turn of the century, but even more focus was given to Function Point counting and estimation during the SanQuote rewrite project in 2005.

SPF then embarked on formally implementing the estimation technique, and appointed a sizing analyst to assist projects with estimations. Yet again, there remained resistance against Function Point counting.

SPF IT was, and the industry still is, guided by an internationally accepted institution called IFPUG – a software sizing standards organisation that laid down practices and procedures to support Function Point counters. In fact, Function Point counting is still the only technique accepted by the International Organization for Standardization (ISO). SPF IT only used historical information concerning projects



where IFPUG standards applied for building benchmarks for future use.

Applying Function Point counting successfully in any organisation is really only possible when the technique is introduced in all projects, as this allows a consistent flow of measurement information, thereby building reliable metrics as an important source of information. Unfortunately, at Sanlam not enough 'similar' projects are available from which to build the necessary statistics. It also appeared that Function Point sizing was not the ideal tool for estimation of maintenance and support work in IT, which further hampered building a metrics database.

The world of technology is constantly changing, which brings new challenges and techniques that need to be explored.

Examples of drastic changes that affect SPF IT are:

- Adding object orientation and UML to traditional functional decomposition for analysis and design; and
- Adopting an Iterative Incremental Development method as an alternative to the waterfall method.

Function Point analysis remains relevant and fills a gap in estimating software development, but it must be used selectively and with care. SPF IT still has the necessary skills when Function Point analysis is required; however, we have to apply practices and techniques that are the best fit for the situation at hand.



Project management: Essential for implementing change and for project delivery

Introducing project management in IT

Today, project management is a well-proven discipline for managing change within Sanlam. This discipline was first introduced in 1993 in the IT Business Technology team, with the first official Project Management Office (PMO) for the management of Sanlam Life's IT projects being established the following year. The second PMO to follow was for the management of IT projects for Distribution and Marketing.

The first project managers were trained according to the IBM Managing the Implementation of the Total Project (MITP) methodology in project management. Over the years, the project management process at Sanlam evolved into a custom-defined methodology, largely based on the internationally acknowledged Project Management Body of Knowledge (PMBOK Guide®). Initially, the role of a project manager was seen as an unnecessary overhead and line of communication, but has since grown to become an integral part of implementing change in the organisation. Project initiation and approval have matured over the years. In the past, when funding was more readily available, projects were approved and initiated without the justification of a sound business case or the necessary benefits tracking. At this

point, the project manager took the greater portion of responsibility for creating and justifying the business case.

Maturing the project management processes

During 2002, the role of project portfolio manager was established within the Project Management Centre (PMC) to oversee all the projects for a number of related business areas within a specific portfolio. Responsibilities of this role included applying project management governance and managing interdependencies between projects. The role was discontinued with the restructuring of SPF IT in 2007. Subsequently, all SPF IT project managers have reported directly to the head of the SPF IT Project Management Office (PMO).

Since 2007, funding and approval of SPF's projects have been managed centrally through the Project Portfolio Investment Committee (PPIC), based on a well-managed business case, accurate budget costing and measured benefits tracking. Nowadays, accountability for the business case and tracking of benefits are the sole accountability of the business sponsor, as his or her operational budget is impacted directly in accordance with the approved business case.

There are three parties involved in projects:



- the business (client) that wants the change implemented is responsible for the business case and ensuring the benefits are realised;
- the Business Change department, which supports the business with the development of the business case and preparing the business for the delivery of the new solution (process changes and training); and
- the SPF IT PMO, which is responsible for the successful delivery of projects by managing the analysis, development, testing, integration and implementation of a software solution.

Programme management is applied to bigger projects where more project managers are required to manage various project streams within the programme. Budget size and the teams involved normally determine whether a project qualifies as a programme.

Large programmes have an executive steering committee, consisting of the chief executive of the business unit concerned and selected members of his or her team, along with selected members of SPF IT Exco. On an operational level, a programme consists of a core team comprising senior IT people, Business Change and, where necessary, a representative from the business unit concerned.

Project management in the business-as-usual environment

SPF introduced a 'Release management' approach in the mid-1990s, with a view to implementing various business-as-usual (BAU) enhancements that were grouped together. These BAU groupings

are then implemented in pre-planned 'Releases'. Release enhancement tasks are normally limited to a single team's development effort. Major benefits of pooling enhancements together are that the impact on the production environment is kept to a minimum and each release has a team of dedicated testers to perform comprehensive regression testing.

Methodologies and tooling

SPF IT recently adopted the Agile project methodology approach, whereby delivery occurs more regularly through managed short cycles or repeatable iterations. This approach offers the ability to accommodate changing business requirements without severely impacting the project budget. Changes to business requirements are managed through controlled scope management.

Project management deliverables were initially stored on file servers. When Lotus Notes was introduced during the late 1990s, a project repository called Project Workspace, with added functionality, was developed to store and administer project documents, manage task request logs (DPM System), change requests and error logs. Some of Lotus Notes' functionalities have subsequently been replaced with tools such as MS SharePoint and CA Clarity (a Project Portfolio Management and reporting tool). Further investigations are currently being conducted for the replacement of the DPM System as a result of the necessity to decommission the Lotus Notes platform.

The capturing of resource time, with automated charge-out of costs to the Walker financial system, was introduced in 2003 through a tool called Genome.



Project schedules are mostly developed in Microsoft Project (MSP), while detailed project budgets are managed on Microsoft Excel, with inputs from Genome and E2-Financials and monthly reports from Essbase.

MS SharePoint has recently been positioned for project and PMO-related document storage and the community portal for the IT PMO.

CA Clarity is a comprehensive Project Portfolio toolset where all the project information with regard to Reporting, Risks and Issues is captured. The Resource Management module is also the primary tool for managing the utilisation of all IT resources allocated to Projects, Releases and Support activities in SPF IT.

JIRA Agile has also recently been introduced as a detailed task management

tool. It is utilised for detailed scope management within Agile projects, as well as in areas where DPM is not a viable solution.

Significant value contribution

Since the establishment of project management, the number of different roles needed in IT has grown significantly. New roles such as business analysts, systems analysts, architects, testers and project administrators have been introduced to ensure successful project delivery. Evidence supports the fact that project management has become an essential capability for the delivery of projects ranging from a couple of weeks to years, as in the case of big programmes such as Renaissance and Saturn. The strict discipline of project management helps to ensure that scope, time, cost, money and quality are all properly managed.



Application development sourcing: Varying SPF IT's capacity

Traditionally, all of Sanlam's application systems were developed in-house. During the 1970s and early 1980s, Assembler, Fortran and COBOL were the programming languages of choice for almost all development on IBM mainframe computers. In order to meet the increased demand from the business to automate manual processes, Sanlam needed to continuously appoint and train new application developers (programmers).

As the in-house training was regarded as excellent and programming skills were highly sought-after in those days, many developers left the company. The demand for IT kept increasing, while the software industry was starting to introduce commercial software for standardised services such as finance and payroll. On the technology front, the PC was introduced, followed by client server systems and eventually the World Wide Web. These introductions led to the demand for new skills and finding ways of supplementing existing capacity. Suddenly, Sanlam was in a position to consider software packages as an alternative to in-house development for certain business areas. Another popular international trend was the emergence of software development outsourcing, which developed into a concept known as strategic sourcing today.

Supplementing our capacity

Sanlam began with the implementation of software packages in the late 1980s (for example Walker), which required subject matter experts (SMEs) from the vendors to work on site from time to time. Only a few individuals were

contracted in the mid-1990s for specific roles such as project managers. The Finpro programme contracted a large number of HPS consultants from Seer Technologies and IBM to assist with the initial HPS development. Occasionally, Sanlam required long-term involvement from local and sometimes even international consultants to assist with the configuration and implementation of software products such as Compass, MIP, Rochade and Cool:Gen.

Special arrangements were made in new areas where Sanlam did not have the necessary skills or decided not to grow the skills base in-house. Contracting with a partner to assist with automated testing and the redevelopment of Sanlam's original website are typical examples of where work was conducted by external contractors.

The Y2K project also required additional skills and capacity, which led to the appointment of external resources to manage the project. It was also one of the first projects to contract retired employees to assist with the development and testing of applications.



Varying our development capacity

In November 1999, 45 developers were transferred from Business Systems (as IT was called at the time) to Computer Configurations Holdings (CCH). This arrangement accommodated the contraction and expansion of resources as and when needed, and created the opportunity to supply people with the right skills at short notice. Cost saving was an obvious benefit, while personnel were given the opportunity to develop other IT skills and to gain experience in other industries. This arrangement changed hands as partners changed names and were taken over by other companies. CCH was acquired by MGX in 2000. Software Futures, Fidentia and Bytes also come to mind, as this original arrangement morphed into a typical 'body shop'/labour-broker arrangement as we know it today.

In 2001 SPF IT's application database administration (DBA) services were outsourced to the AST Group. This arrangement ended in 2012, when the DBA function was brought back in-house.

Outsourcing large-scale application development

No significant application development work was outsourced until 2002, when TCS was contracted for the redevelopment of SanQuote and subsequently to assist with the partial redevelopment of the outdated commission (KOM) system in SPF. These two projects were not only outsourced, but also offshored, which led to a number of lessons learnt. TCS also developed Satrix (the Contact Centre application), but with more direct involvement from Sanlam. Since then various sourcing models have

been used, with Sanlam managing and controlling most of the work. Project Harold (SanlamConnect) is an example of a project that was outsourced completely, but then Sanlam took over the management of the programme when it experienced difficulties.

In 2006, Andile Swartbooi, a former head of SPF IT Development, launched an investigation into the possible outsourcing of non-core application support. Analysis revealed that there was only a small number of applications (with only a few people supporting them) that could be considered as the 'low-hanging fruit' that might pave the way for potentially bigger outsourcing arrangements in future. Owing to the limited benefit, as well as the IT Transformation programme (ITT) that was running at the same time, it was decided to forgo this idea.

Strategic vendor management

In the meantime, the search for strategic partners continued. Fanie Botha, then vendor manager for Sanlam Personal Finance (SPF), launched a large-scale request for information (RFI) process to identify potential software development partners. As part of this investigation, 62 companies were approached and those that responded were ranked according to, among other things, their technical capabilities, scale of operations, ability to partner with Sanlam, BEE status and the like. Eventually SPF IT Exco approved a list of strategic partners for consideration during all application development outsourcing arrangements.

In 2009 this arrangement was superseded by a formal application sourcing strategy with three strategic partners: BCX, Zensar



and TCS. Both Zensar and TCS have head offices in India. The extent to which work is insourced, co-sourced or outsourced gave rise to the establishment of a 'Vendor Management Office' in SPF IT Development in 2010. In 2013, SQIM was added to the list of strategic partners as software testing specialists.

In 2012 TCS completed development on the Epsilon solution, which replaced Lamda, and Zensar redeveloped a number of applications written in VB6 to mitigate the risk against end-of-life technologies. In

2014 TCS was deployed to assist with the backlog of enhancements in Epsilon, BCX to conduct the Multi-Data system rewrite and Zensar to carry out the Reinsurance system rewrite.

The four strategic partners, however, are not exclusive suppliers to SPF IT. Services are also insourced from a list of preferred suppliers or vendors. SPF IT continues to follow a multi-partner sourcing model, but will always maintain control, accountability and responsibility for its application development.



Architecture: The key to the future

IT Architecture, a broad term, has been practised at Sanlam for many years – from the start of Sanlam’s IT journey, actually – although it hasn’t always necessarily been called that. As the information technology landscapes grew and developed, the formalisation of various IT disciplines and practices occurred, and in a similar fashion this occurred within Sanlam too. In Sanlam ‘IT Architecture’ is often associated with Enterprise Architecture (EA). EA considers the architecture of the whole enterprise and focuses on the disciplines and practices in the Business, Information, Application and Platform/Infrastructure domains. Sub-domains like Development, Integration and Security Architectures also exist.

IT was called Business Solutions when Leon Venter took over from Japie Cloete in 1995 as head of IT (a role that was later called CIO) and it was during that time prior to 2000 that the role of the application architect was established in Business Solutions: Sanlam Life (BSSL) under André van Niekerk. Soon thereafter the roles of team architects and applied architects were also established. In the ‘Technical’ team, the role of architect was established even earlier than 1995. The Finpro project (1995 to 1998) had a strong focus on business, system, information and technical architecture that laid the foundation for Glacier’s Unit Link Products system, as well as the Millennium environment that followed soon afterwards. After the Finpro project Kobus Venter was appointed as head of Enterprise Architecture, where the first IT Architecture and Technology (IT-ART) team, a forerunner for EA, was established under Nico Ras. In the beginning of 1999, the then Information Systems (IS) and Information Technology (IT) were combined as one department. Later that same year, Leon Watkins became

head of SPF: IT and repositioned IT in SPF in totality. In the new structure, Nico Ras was responsible for the IT-ART function, while Application Architecture, as Centre of Excellence, was placed under Brian Harper.

The key responsibilities identified for the Architecture function at that time are still very valid today. These key responsibilities included the development of architecture guidelines (strategies, principles, standards and frameworks), architecture processes, roadmap activities (introduction and retirement of technologies), transition plans, architecture metrics, architecture review boards and other governance structures. In 2001, when SPF and SEB merged, Heinie Werth became head of Information Technology, with Francois Venter as head of Enterprise Architecture.

Enterprise Architecture

In Francois’s Enterprise Architecture team four primary architecture domains, three focus areas and one support function were identified. The four primary architecture domains were Business Architecture,



Information Architecture, Application Architecture and Platform (Infrastructure) Architecture; the three focus areas were the Integration, e-Business and Security focus areas; and the support function was the Development and Architecture Support function.

When Francois designed the EA team's organisational structure, six Architecture domains, namely Business Architecture (Dawie Adlem), Information Architecture (Tom Michie), Application Architecture (Nico Ras), Infrastructure Architecture (Marius Geyer), Integration Architecture (Mohamed Gani), and Development Architecture (Marietjie Kotze) were defined. Although Integration Architecture was a focus area, impacting all the primary architecture domains, it was decided to establish it as formal domain in order to give priority focus to it. Both the e-Business and Security focus areas were headed up by Ian Campbell. The current EA structures came into effect after the ITT restructuring of 2007 and with the establishment of IT Infrastructure Shared Services (ITIIS) in 2009.

Business Architecture

Business Architecture encompasses business strategy, organisational structures, business processes and business projects, and is, per definition, part of Enterprise Architecture, but was organisationally mostly managed separately from the rest of the Enterprise Architecture domains. As part of the IT restructuring of 1999, Business Architecture was deemed to be the responsibility of the business. In 2001, when Francois Venter became head of Enterprise Architecture, a Business Architecture function was established as one of the six Architecture domains

in Francois's department. An important function performed by the Business Architecture team was the creation and maintenance of the Solution Migration Plan, which derived business action plans from business strategies. The IT portions of the action plans informed technical roadmaps, which were used as IT Architecture Statements of Direction in the IT Strategy with the associated implementation strategies. In this way, IT strategy was tightly aligned with Business Strategies. Business Architecture as an IT enterprise domain was returned to the business in 2005 and currently resides in SPF's Business Change department.

Information Architecture

The Information Architecture domain was primarily embodied in the document management and data warehouse environments. The Information Architecture framework makes a distinction between how incoming and outgoing documents are handled. Image-processing software, IBM's ImagePlus, was implemented in 1991/1992, and in 2007 it was replaced with Content Manager. InputAccel (later Kofax), RightFax and Enterprise Information Portal (EIP) greatly enhanced the capabilities required for the storage, indexing and retrieval of incoming documents.

Technology support for the preparation of outgoing documents, such as letters and contracts, also uses very advanced technologies. From the humble beginnings of the KOR system, which strung together paragraphs stored in a BDAM file (for use in a letter, for example), depending on certain business rules, to a document preparation package like MTEXT, which is currently being replaced with Eloquence,

Sanlam's outgoing document management environment has become a highly specialised domain. While distributed via multiple channels like standard mail and e-mail, outgoing documents are stored in OnDemand under the Write Once Read Many (WORM) principle, as only these types of documents are submissible to a court of law should that be required. Document management today works hand in hand with nearly all business processes, with integration between the administration systems and the document management systems, and it greatly contributes to the success of the Sanlam Call Centres. The document management architecture has been extended to allow integration with multiple types of business systems and is widely used across the Sanlam Group.

Sanlam's first data warehouse, the Actuarial data warehouse, was a bespoke development that started in 1997 and was finished a number of years later after being suspended as a result of the demutualisation and Y2K projects. Over the years, three other data warehouses were developed (the fourth one in 2013). Tools like Business Objects, Datastage, FastTrack and Infosphere Data Architect were implemented, and IBM's Insurance Information Warehouse (IIW) models were used as reference models. Recently, the analytics facet of Business Intelligence (BI) garnered a lot of attention and new insights are derived by utilising new ways of analysing data. A comprehensive architectural assessment was performed in 2013/2014 on the tools, techniques and processes in the BI environment in order to propose a formal BI strategy for the renewal and improved exploitation of BI assets.

Application Architecture

Three main initiatives shaped the Application Architecture domain, namely Application Layering, Service Based Architecture (SBA) and IBM's Insurance Application Architecture (IAA). Towards the end of the 1990s and as part of the Sanlam Life Systems Renewal (SLSR) project, an initiative was started to open mainframe applications to enable integration with particular system (service) components from systems outside the mainframe systems. The LID and POL applications were the primary mainframe applications to be 'layered'. The LID application was layered and renewed in an almost unnoticeable manner, but it was not as easy with the POL system. The layering concept separated the presentation layer from the business logic layer by a so-called event co-ordination layer, and again separated the business logic layer from the data layer by the data abstraction layer. The CLM (Death Claims) system was the first mainframe system that was designed according to layering principles right from the outset. At this stage (prior to 2000) everyone was starting to talk about SBA, and one of the objectives of the layering initiative was to enable the reuse of Legacy system services from the (more) modern systems environments such as Lamda, which at that stage was still in development mode.

SBA had its roots in the SLSR project, but was formalised and adopted as a result of an Enterprise Architecture review conducted by Tata Consultancy Services under Francois Venter's sponsorship in 2001/2002. The adoption motivation was given as addressing the needs for integration, ageing technologies, agility and responsiveness. SBA required new



technologies, skills and practices. These included a language (for example, Java) strategy, technology strategy (for example, IBM Websphere integration stack), Architecture strategy (for example, component-based architecture), security management (for example, identity and access management) and methodology strategies (for example, UML and model-driven development). The SBA roadmap unfolded in the following manner after its adoption in 2002: In 2003 messaging technology was implemented to deliver application service integration, and SBA was refined to Service-Oriented Architecture (SOA) in accordance with industry trends. In 2004 the Java language strategy was developed with much discussion and in 2005 KOM++ (which eventually became the new Commission Management System) was implemented as the first Java implementation. Mainstream SOA/Java projects commenced in 2006, with the CCA project (Siebel replacement project and later becoming the Sentrix project) probably being the most significant one until the Epsilon implementation in 2012. The first major reuse of services was within the mainframe disability claims (PEP) system.

The SOA requirement for a component-based architecture was fulfilled by IBM's Insurance Application Architecture (IAA), which looks at an insurance business from a Business Architecture perspective and defines, among other artefacts, a number of business process management components. By the time SOA was being implemented, Sanlam already had a long history with IAA. IAA was the component architecture used as reference architecture in the Finpro project, and the development of the first unit-linked product system (ULP; now with Glacier), as well as

IBM's unsuccessful Insurance Product Builder (IPB) project, were both done with reference to IAA. After an in-depth assessment of the applicability of the IAA models to the systems portfolio, the use of the IAA models as a reference framework for future developments was confirmed. Subsequently, in 2002, a macro Application Architecture model based on IAA was defined and described business process components like Party management, Acquisition management and Claims management. Since then all proposed system renewals, integration of new packages, application portfolio assessments and so on have been conducted with reference to the IAA business process component models. The best-known example of this practice is evident in the so-called Millennium 'Spider diagram', which grouped the interfaces between Lamda and the other systems (initially mainly mainframe systems) per business process component. It was found that this practice also enabled discourse and planning, and general understanding of scope.

Infrastructure Architecture

The Infrastructure Architecture domain is probably the domain that best demonstrates one of the key responsibilities of Enterprise Architecture. This statement refers to the creation, maintenance and implementation of technology roadmaps. Servers, storage, networks and network devices, office automation software and end-user devices have a much shorter life span than business applications and their renewal cycles are therefore faster and need to be carefully planned. Roadmaps from strategic implementations, often stretching over many years, are compiled and upgrades or interim implementations are carefully planned and sequenced in



order to eventually implement specific technologies. Voice over Internet Protocol (VoIP) has been in planning since 2005, when telephony management and server infrastructure were standardised. Since then, many strategies have been formulated, investigations have been completed and proofs-of-concept done, while industry technologies matured, until VoIP and IP telephony were finally implemented in 2013. Active directory (AD), the central authority for network security, was also in a planning stage from 2005, with many concomitant projects being put in place for its implementation, and AD's implementation, in turn, enabling many other projects. In this manner, the replacement of a Token-ring network with an Ethernet network, Identity and Access Management (IAM), remote access to the Sanlam network, allowing the so-called bring-your-own mobile devices (BYOD), for example cellular phones, tablets, personal laptops on the network and Single Sign-on can all be associated with the implementation of AD.

The latest large infrastructure-related project in this area is the Future Platform project, which will determine the future use of the mainframe, particularly the z/OS part thereof, where the Legacy business applications are run. Should the decision be taken to decommission the z/OS mainframe, the migration of the business applications off z/OS will end a long journey with the mainframe computer as we know it today, a journey that began in the late 1950s.

Integration Architecture

The Integration Architecture domain was primarily responsible for the establishment of the SOA environment as discussed under the Application Architecture heading. This

domain also looked, amongst others, at integration on the levels of process, data (including replication and synchronisation), method and API integration methods; and middleware and integration brokers, distribution component frameworks such as .NET and J2EE, as well as integration protocols and standards like SOAP, ebXML, UDDI and WSDL. The DEV CC team currently in the SPF IT: Strategy and Planning team has its origins in the Integration Architecture domain.

Development Architecture

The variety of application development tools, processes and techniques was very restricted in the 1970s and even the 1980s. Choices of application development languages centred on Assembler, COBOL, Fortran and Easytrieve, with flat files and later VSAM and IMS-DB as data stores. Implementing DB2 was a great advancement in the way data management was perceived. Of course, at that stage the business applications were developed for the IBM S390 (which evolved into what is known today as z/OS) mainframe platform. When PCs and enterprise servers arrived on the scene, business applications running on a PC were soon developed on DOS and, with this step, the variety of development tools and techniques greatly expanded. Development tools and standards were owned by the Technical team (the department had various names, for example PGO and SOS), but it was mostly known as 'Tegnies' from the IT department. Even in the early 1990s, there were concerns about the ageing workforce and scarcity of skills, particularly pertaining to Assembler skills, and it was decided to select a new development toolset that would support modern software engineering methodologies.



A huge investigation was launched in which five products (Natural Adabas, Huron, Sapiens, IEF and HPS) were evaluated in parallel by combined teams from 'Tegnies' and the development teams. Eventually HPS was selected in 1995, with implementation starting in late 1995/1996. HPS was the main development toolset in the Finpro programme. Besides the administration system (ULP) that was developed for Glacier, no other system was developed on HPS, and it was decided to decommission HPS because the vendor had developed financial problems. Scarcity of skills and the need to modernise development techniques were still risk mitigation requirements, and subsequently Cool:Gen (the new name for IEF; now called CA Gen) was selected and implemented in 1998, with five Millennium systems (including CASE) being the first implementations in February 2000. Central Instalment System (CIS) was implemented in November 2001 and Sanlam Stop Orders (SSO), the largest Cool:Gen system, both then and now, was implemented in May 2003. Soon after the acquisition of Cool:Gen, Lamda was acquired and it seemed that SPF was embarking on a 'package' route. Since then the 'strategic status' of the tool was under threat; despite the fact that the first seven applications implemented were for the Millennium environment. Numerous investigations and positioning initiatives, the first as early as 2001, were undertaken to confirm the strategic nature of the toolset. However, especially following the establishment of the SOA practice, the scale was tipped towards Java as the strategic development language, and .NET as an alternative.

Responsibility for the definition and implementation of standards, practices, processes and methodologies of development tools, languages and

techniques initially resided with 'Tegnies', but when the IT Infrastructure services were outsourced to Debis (later T-Systems) in 2000, this function was placed with the Architecture team. Since the ITT restructuring in 2007 it has been placed in a decentralised manner with different competency centres. Gathering of information to determine the current usages of tools and languages in order to indicate a way forward automatically led to the creation of inventories. These inventories included inventories of applications, servers and languages, development tools and techniques, DBMSs and middleware, SOA services and business processes, business functions and integration protocols, and many more. Frequently asked questions are how many Java applications/services we have, which applications are still written in, for example, VB6, what processes do applications X and Y support, do we still have Windows 2008 servers in production, what is the total cost of ownership of the mainframe, how do we know who needs to test, and when does a server/application become end-of-life? These inventories, the analysis thereof and subsequent strategy formulation and roadmaps are part of a discipline called portfolio management. The first attempt at an integrated application and IT product portfolio view was created in 2001, with Archi being implemented in 2002 as a formal portfolio management tool. Thereafter various Enterprise Architecture tools and practices were investigated and/or used, but none has been institutionalised as yet.

e-Business focus area and Security Architecture

The e-Business focus area concerned itself with all interactions between a client, partner, staff member or other party and

Sanlam, where Sanlam's portion of the interaction is handled electronically. This focus area, however, never evolved to a formal architecture domain. The Security focus area, on the other hand, developed to a formal domain and had touch points in all other domains. On the business level, the security policies, risk management and audit issues were considered. Data classification and data security requirements and mechanisms were a prime focus of the Information Architecture domain. Application authentication and authorisation rules, together with application function security requirements, were considerations for the Application Architecture domain. Network and platform security are probably the best known Security Architecture elements. The work done by the Security domain experts from 2001 to 2004 built a solid foundation for identity and access management (IAM) which became a very important part of IT.

The IAM strategy accepted in 2004 proposed the linking identity of management to the SAP HR system so that security credentials could be managed based on staff movements and the allocation of access privileges. This strategy is currently being fulfilled by an IAM project managed in the ITISS environment. IAM-based architecture was used in the WAS platform in the SOA environment for the Sentrix solution, which was deployed in the Sanlam Call Centre in 2006. In that same year, SPF: IT adopted IBM's Identity Manager (TIM) and Access Manager (TAM) in order to control access both internally and in the web environment. Shortly afterwards, SanlamConnect was rolled out to external clients on the TIM/TAM system, followed by SanPort, and at present the new Client Portal is also being deployed using TIM/TAM to offer increased security and access control.

Conclusion

Three time periods, each with a unique focus, can be identified in the 20 years since 1995, when Leon Venter became head of IT, until today. These periods were 1995 to 2000, when IT Architecture was recognised as a much-needed discipline; 2001 to 2006, when the various architecture domains and EA management practices were established; and then 2007 until today, when EA practices have reached a higher level of maturity. In the period 1995 to 2000, the role of the architect and the function of architecture were given more prominence. It was the beginning of establishing 'what an Architecture team should do'. It was a time of rethinking development language strategies (for example, HPS and Cool:Gen), establishing a new systems platform for the business (for example, Finpro and Lamda) and preparing the legacy systems and system processes in such a way that the IT application assets could be reused in the future (for example, the SLSR projects).

During the period 2001 to 2006 there were many organisational changes, both in business and IT. The businesses of SPF and SEB were combined again, SPF IT had three heads of IT (Heinie Werth, Kobus Möller and Hennie de Villiers), and even Glacier had two CIOs in this period (Thinus Delport and Garry Wilford). Fortunately, the Architecture function was stable under one manager (Francois Venter). This period saw a strong focus on the distinct domains of Enterprise Architecture, EA management, inclusive of governance, processes, policies, IT strategy definitions aligned with business strategies, and growing and solidifying the skills of the architects. There was a strong focus on the training of architects, with Architecture training presented by Graham McCleod (2002 and 2005), .NET training



by Microsoft (2003), UML training in the evenings (2003), Architecture training by Deon Pollard (2005), the Internal Consulting development programme by Infochoice (starting in 2005), and IAA by IBM and Silvermoon (2005). This period also saw the establishment of SOA and a multitude of associated processes, policies, new tools, new languages and new roles being established alongside SOA.

The period from 2007 to 2014 kicked off with a reorganisation of the IT department,

whereby the Architecture function was distributed across various teams in the IT organisation, from architects in the Enterprise Architecture team to solution and team architects in the IT Development teams to specialists in the Architecture competency centres. Despite the fragmentation of the Architecture discipline there is a much higher level of maturity in many of the Architecture processes and practices, as they have become institutionalised and accepted by cross-company governance forums.



Infrastructure



As part of Sanlam's decentralisation model in the late 1990s, IT infrastructure services were also outsourced. This, however, changed partially in 2003, when it became clear that owning certain IT assets could lead to significant cost savings.

At the beginning of the 2000s, Sanlam and Santam embarked on a co-operation initiative that also affected IT and its infrastructure service providers. The result of this co-operation agreement was a decision to manage all infrastructure services and service providers from one central business unit and, as such, Information Technology Infrastructure Shared Services (ITISS) was established. ITISS now provides a range of infrastructure services to the Group, including the management of shared platforms across the Group.



Infrastructure outsourcing, contracts and cost savings

In the mid-1990s Sanlam followed a decentralised model, with the establishment of different businesses in the company, each with its own IT department under the leadership of its own chief information officer (CIO) or head of IT. Previously, a central IT department was responsible for the infrastructure and application development services of the entire Group.

In 1998 Sanlam decided to outsource all non-core business, including IT infrastructure services. The IT Infrastructure Services Department (also known as Business Technologies) was separated from the IT application development environment in order to prepare for the outsourcing of these activities.

All infrastructure services and service level agreements were described and Sanlam entered into a request for proposal (RFP) process. More than 10 companies tendered, three of which made it to the short list. A five-year contract was then awarded to Debis.

In January 2000 Debis took over all IT services, including the mainframe, servers, network, telephony system and workstations, as well as all the hardware and software assets. Almost all of Sanlam Infrastructure Services' staff members were transferred to Debis. Initially, Group IT was responsible for the management of this contract.

In 2002 Debis was acquired by Deutsche Telecom and the company's name was changed to T-Systems. In 2003 Sanlam adapted the outsourcing model, as the anticipated savings were not being realised.

When Group IT was unbundled in 2003, Francois Venter, then head of Sanlam Life: Architecture and Strategy, was given the responsibility of managing the outsourcing contract. At the end of 2003 notice was given to T-Systems that the telephony services would be discontinued and a month later the wide area network followed the same path. Following evaluation of the RFP responses, these services were awarded to Dimension Data.

It also became clear that, by owning the assets, Sanlam could save additional funds. When the desktop workstations reached replacement age, Sanlam decided to acquire these assets again. This process was followed for all other assets when their renewal date was reached, with the mainframe being the last asset to be obtained by Sanlam in October 2009. By changing the outsourcing model, Sanlam was able to save significant amounts of money.

In 2005 another RFP process followed and the contract was once again awarded to T-Systems for another three-year period.

In 2007, a year before the next RFP process was due, T-Systems made a savings proposal to Sanlam on condition that there would not be an RFP process. The proposal was accepted.



In 2008 the Helix Programme was initiated to consolidate outsourcing contracts between Sanlam and Santam in order to save money for the Sanlam Group as a whole. Bulk printing and desktop management were separated from the rest of the IT services and RFP processes followed for bulk printing and desktop management. The contract for bulk printing was awarded to Lithotech and the contract for desktop management to Gijima AST.

BCX, Santam's service provider at the time, won the contract for the data centre with effect from 1 January 2010.

The application development group was never outsourced. The database administrators (DBAs) initially remained within Sanlam, but were outsourced to Gijima AST in 2005. In 2012 they were insourced once again.

Today, Information Technology Infrastructure Shared Services (ITISS) is responsible for the management of these contracts in line with its multi-vendor strategy.



IT Infrastructure Shared Services: Creating a shared IT infrastructure service capability in the Group

The intention to improve co-operation in order to save costs was initiated in the Sanlam Group about three years before the launch of Programme Helix, the co-operation initiative between Sanlam and Santam, in 2008. However, Programme Helix gave momentum to this intention and the consolidation of Sanlam and Santam's outsourced IT services resulted in significant cost savings for both companies. The programme was aimed at saving costs and growing the joint business for the Sanlam Group through maximum co-operation between Sanlam and Santam.

Consequently, various transitions to new vendors took place. The first significant project was the consolidation of the mechanism for authenticating laptop and PC users in the IT environment by placing the contract for this service with a single service provider. It was the first of six bigger projects where IT services were explicitly contracted with the aim of optimising IT infrastructure services across the Group. Others included projects focused on Sanlam's telecommunication services, the transition of desktop services, infrastructure security, bulk printing and data centre services.

As part of this initiative, a Group-wide IT infrastructure shared services business unit, ITISS, was to be established, whereby services would be managed centrally for the Sanlam Group, including the Sanlam Group Office, Sanlam Personal Finance, Glacier, Sanlam SKY, Sanlam Investment Management, Sanlam Collective Investments, Sanlam Employee Benefits and Santam.

At the end of 2008, SPF IT Operations and Sourcing was extended and rebranded into a fully-fledged new business unit reporting directly to the chief executive of SPF, Lizé Lambrechts. This new, independent business unit was called ITISS, with Francois Venter at the helm as executive head.

ITISS's main goal was to optimise the cost of IT infrastructure for the Group on a sustainable basis while maintaining or improving service levels. The measurement was a year-on-year reduction in IT infrastructure costs from an agreed baseline, as well as adherence to agreed service levels. To this end, ITISS would drive further consolidation and standardisation in the Group in the quest to provide an effective and secure platform for Group collaboration.

In 2009 the focus was on vesting the ITISS organisation, as well as the completion of the new infrastructure supplier migrations, and the selection of a single data centre service provider for the Group. Apart from

aggregating and managing outsourced IT services, ITISS also delivered other shared services within the Group, such as document management and application integration services. One of the first major initiatives was to consolidate the IT networks and to move all employees within the Group onto the same network. The Sanlam and Santam environments were therefore consolidated in one data centre and a single security platform was created for the Group.

Another achievement was the implementation of a common call centre technology stack across the Group. Through standardisation initiatives such as these, the organisation was able to move

all employees in the Group onto a single collaboration platform, namely Microsoft Exchange/Outlook.

The consolidation and optimisation of IT services has indeed resulted in significant cost savings – more benefits were achieved than expected – which has, in turn, resulted in lower unit costs across the different businesses that ITISS supports.

By 2012 ITISS had exceeded its savings targets, as well as its service levels and employee equity targets, year on year. The bar has been raised continuously, but in response ITISS has grown and been able to offer more and improved services to businesses in the Group.



Conclusion

IT has come a long way since 1990: The mainframe, although still around, had to start competing with open system platforms, Assembler had to make way for Java, VDUs were replaced by PCs. Increasing numbers of online, browser-based and mobile applications started to be developed. Pure in-house development had to make way for packages and multi-vendor sourcing models. New terms such as methodologies, processes, object-orientation, UML, SOA, SLAs, business cases, risk management, technical debt, optimisation, synergies, restructuring and cost-cutting have become part of our daily vocabulary and dictate the way in which we approach our work on a daily basis

Over the years IT has proven itself to be a responsive, creative and trusted partner to the business and is set to improve its contribution in the years to come as new technologies are added and new challenges are faced. We look forward to continuing the journey...



Acknowledgements

The compilation of this book was truly a team effort. Thank you to every one of the more than 80 people who contributed – whether by delving into the history of IT within Sanlam to establish a chronological order of events or by supplying technical and factual information about past events.

A special word of thanks to Marietjie Kotze, Louise Tucker and Brian Harper for their relentless efforts to ensure that the information contained in this book is as accurate as possible.

I would also like to thank André Hoffman, André Prins, Barry Leo, Herman du Plessis, Marinda de Waal and Nico Ras for their input and guidance during the early days of this initiative.

Without the endorsement of SPF: IT Exco and the support of Verity Rossouw of Sanlam's Archive, this book would not have been possible. Thank you.

Jaco du Plessis
Managing editor and coordinator



Glossary

Sanlam acronyms

Description

(Original Afrikaans system name or meaning in italics)

ACE	Alpha Calculation Engine
ADW	Asset Data Warehouse
AFT	Stop Order system (<i>Aftrekorder</i>)
AGT	Intermediary administration system (<i>Agente</i>)
AKT	Actuarial (<i>Aktuarieël</i>)
ANB	Auto New Business system
B&A Web	Brokers and Advisers' Web
BBS	Investment Management system (<i>Beleggingsbestuur</i>)
BCS	Benefit Claims system
BDS	Mainframe-based Messaging system (<i>Boodskapversending</i>)
BEL	Investment system (<i>Beleggings</i>)
BGT	Budget system (<i>Begroting</i>)
BRP	Investment Series Policies system (<i>Beleggingsreeks Polisse</i>)
BSSL	Business Systems: Sanlam Life
BST	Business Systems Training department
BWG	Investment Series Valuations system (<i>Beleggingsreeks Waarderings</i>)
CCA	Call Centre Agent / Call Centre Application
CCC	Client Contact Centre
CDA	Cash Deposit Administration system
CFD	Customer Facing Documents
CIM	Client Information warehouse
CIS	Central Instalment system
CLM	Death Claims Management system
CMS	Commission Management system
DAF	Deposit Administration Funds system (<i>Deposito Administrasie Fondse</i>)
DAT	Data batch management system (<i>Data Verwerking</i>)
DBA	Database Administration department
DEB	Debit Order system (<i>Debietorder</i>)
DEP	Direct Electronic Payment



Sanlam acronyms

Description

(Original Afrikaans system name or meaning in italics)

DIS	Debit Order system (<i>Debiet Invordering</i>)
DPM	Development Process Methodology
DWH	Actuarial (Liability) Data Warehouse
EDB	Properties system developed for the AS400 (<i>Eiendomme</i>)
EDM	Properties system (<i>Eiendomme</i>)
EMF	Electronic Mail and Fax
Epsilon	Policy Administration system. Original Lamda application rewritten in Java
FAS	Retirement Fund Administration system
FINPLAN	PC-based Financial Analysis program
GCF	Guaranteed Capital Fund system
GPS	General Payment system
Group IT	IT Department in Sanlam's Group office
GSK	Deposit and Fund Administration Scheme system (<i>Groepskema</i>)
GVA	Group Benefit Administration system (<i>Groepvoordele Administrasie</i>)
HER	Reinsurance system (<i>Herversekering</i>)
HPP	Hundred Plus Policy system (<i>Honderd Plus Polisse</i>)
HUR	Property Rental administration system (<i>Eiendomme Huur</i>)
INVESTOR	PC application for investment advice for retirement lump sums
IRP/e-IRP	System for issuing IRP5s, IT3s and liaison with SARS
Isabel	PC-based client administration program
Istel	PC application providing standardised user interfaces for SPF's legacy (mainframe) online transactions
ITISS	IT Infrastructure Shared Services
ITRC	SPF IT Research Centre
ITT	IT Transformation project 2007
JHH	Document Capture Application
Jistel	Istel application rewritten in Java
KAS	Cash Receipt system (<i>Kontant Invordering</i>)
KDS	Office Services system (<i>Kantoordiens</i>)
Keusegids	Menu program for the SANPAK suite of applications



Sanlam acronyms

Description

(Original Afrikaans system name or meaning in italics)

KOM	Commission administration system (<i>Kommissie Administrasie</i>)
KOM2CMS	Project name for the (partial) rewrite of the KOM system to CMS
KOP	Financial system for Multi-Data's bureau clients (<i>Koöperasie</i>)
KOR	Correspondence system (<i>Korrespondensie</i>)
KOS	Payment/money transfer system (<i>Kredietoorplasings</i>)
Lamda	Policy administration system originally supplied by Marlborough Sterling Group
LDS	Leads system (<i>Leidrade</i>)
LID	Member register (<i>Lederegister</i>)
LMA	Lamda Messaging Architecture
LPE	Lamda Print Engine
MDC	Mail Distribution Centre
MegKwot	Mechanical Quotation system (<i>Meganiese Kwotasie</i>)
MegPlan	Quotation system for investment policies
Millennium	Non-mainframe policy administration environment (see Lamda & Epsilon)
MIS	Management Information for SPF Distribution
MIX	In-house developed file transfer system
NFI	National Fund Investments
NUB	New Business system (<i>Nuwe Besigheid</i>)
OPS	Optional Schemes system (<i>Opsionele Skemas</i>)
PAY	Payroll system for Sanlam staff
PBA	Portfolio Management and Administration system (<i>Portefeuljebestuur Administrasie</i>)
PBB	Premium Black Box
PBI	Portfolio Management Information system (<i>Portefeuljebestuur Inligting</i>)
PC-Kwot	PC-based quotation for non-investment products
PC-Plan	PC-based quotation for investment products
PEN	Pension fund administration system (<i>Pensioene</i>)
PEP	Policy (disability) Claims and Instalments system (<i>Polis Eise en Paaimente</i>)



Sanlam acronyms

Description

(Original Afrikaans system name or meaning in italics)

PGO	Programming Support department <i>(Programmeringsondersteuning)</i>
PIG	Pipes, Integration and Gaps system - integration application for the Lamda/Epsilon environment
PMC	Project Management Centre
PMO	SPF IT: Project Management Office
PMT	Annuity Payments system <i>(Paaielemente)</i>
POL	Mainframe (Legacy) Policy Administration system <i>(Polisadministrasie)</i>
PRT	Portfolio Management system <i>(Portefeuljebestuur)</i>
PWT	Pension Valuations and Tenders <i>(Pensioene Waarderings en Tenders)</i>
REK	General Ledger system <i>(Rekeninge)</i>
Renaissance	Project name for the renewal of the Lamda application - now called Epsilon
RNT	Rental system for 'Stedelike Behuisingsfonds' (Communicare)
RPE	Risk Product Engine
S.Net	Suite of applications for the intermediaries
SanFin	Web-based suite of client management and financial planning applications for intermediaries
Sanita	Online transaction administration system for Istel <i>(Sanlam Intydse Transaksie Administrasie)</i>
SANNET	PC-based application providing online transaction user interfaces for intermediaries via dial-up
SanPort	Project name for the renewal of the S.Net and SanQuote systems
SanQuote	PC-based quotation system
SANTAX	PC-based tax analysis program
SANTEL	Staff telephone number system
SAR	Income Tax/SARS interface
Saturn	Programme for the renewal and web-enablement of the sales and advice suite of applications
SBD	Sanlam Broker Distribution
SCI	Sanlam Collective Investments
SEB	Sanlam Employee Benefits



Sanlam acronyms

Secure Services

Sentrix

SHR

SOL

SOP

SOS

SPF IT

SPI

SPP/SP²

SSO

SUTUWA

TAR

ULP

Vervaltrek

VKB

WDG

WYN

Y2K

Description

(Original Afrikaans system name or meaning in italics)

Secure transactional system on Sanlam's website

Customer Relationship Management application

Unit trust administration system for SCI - also see SUTUWA

Salary and Wages system (*Soldy*)

System Development process (*Stelselontwikkelingsproses*)

System Development Support department
(*Stelselontwikkelingsondersteuning*)

Sanlam Personal Finance Information Technology
department

Sanlam Private Investments

Sanlam Personal Portfolios/Innofin/Glacier

Sanlam Stop Order system

Sanlam Collective Investments' administration system

Premium rates system (*Tariewe*)

Unit-Linked Products system

Monthly Premium Renewal and Lapse run (*Premie
Vernuwings en Vervallings*)

First generation leads system (*Verkoopsbevordering*)

Policy Valuation system (*Waarderings*)

Wine system (*Wyn*)

Year 2000



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