SAS® - THE POWER TOOL FOR INFORMATION PROFESSIONALS

Shane Wood, Housing Corporation of New Zealand

Abstract

Information is Power. We are in the midst of the Information Age, the period of most rapid technological change since the Industrial Revolution.

Information is the life-blood of any organisation. Accurate and timely information can provide significant, competitive advantages to a company, and incorrect or late information can destroy it overnight!

An essential requirement for informed decision making in business, and life in general, is prompt access to accurate, consistent and credible information. Many different products are available for the storage, management, access and presentation of information, but there is only one that provides both skilled and unskilled users with a completely integrated solution embracing all these areas and many others. This product is SAS®.

The vast volumes of information generated in a modern organisation also create the new problem of information overload. SAS is a valuable tool for providing managers with rapid access to key performance indicators, while also retaining detailed analytical capabilities.

This paper discusses the Housing Corporation’s experience with SAS as an integrated Information Centre support tool, and its benefits from both a user and organisational perspective.

It also considers possible objections, and presents arguments against these.

The paper is aimed at both novice and experienced SAS users, as well as Information Professionals and Managers.

Introduction

The new power is not money in the hands of the few. It is Information in the hands of the many. (John Naisbett, Megatrends).

The Housing Corporation and its predecessor, the State Advances Corporation, has for over 50 years been the Government’s principal vehicle for the delivery of housing policy in New Zealand. It manages a stock of over 70,000 rental houses, acquiring up to 2,500 additional houses each year. In addition, over the last 5 years it has assisted over 61,000 households into home ownership, and currently administers over 130,000 mortgages. The Corporation has historically targeted its assistance towards low income households and those with serious or special housing needs.

With gross assets valued at around $6.5 billion, and over 200,000 existing clients, the Housing Corporation of New Zealand is a major player in the financial and property investment sectors. In order to manage the organisation effectively, it is crucial that decision makers are provided with accurate, timely and appropriate information on all areas of corporate performance.

The role of providing this information belongs to the Corporation’s Information Centre.

One Solution Replaces Many

The job of satisfying the information needs of a multi-billion dollar organisation with over 1,500 staff is by no means trivial.
As part of its role in fulfilling these needs, the Information Centre performs a number of key tasks including:

- Maintenance of a historical database of corporate activity
- Producing regular reports for management
- Presentation graphics for reports and seminars
- Statistical analysis
- Forecasting and 'what if' analysis
- Importing and exporting data from/to external sources
- Providing clients with access to high quality information.

In order to perform these tasks the Information Centre requires a set of tools incorporating the following capabilities/functionalities:

- Database and access engine
- Query facility
- Manipulative capability
- Report writer
- Statistical analysis capability
- Graphics facility
- Spreadsheet
- User friendly access facilities

Clearly, there are many products available that would provide acceptable means of carrying out each of the tasks above.

Some of the products historically used by the Housing Corporation to satisfy some of its information requirements are EXCEL®, LOTUS®, dBASE®, ORACLE®, SPSS®, RBASE® and MULTIPLAN® as well as a host of internally developed systems programmed in languages ranging from LINC® and COBOL® to BASIC® and PDS-ADEPT®. Each of these, however, only satisfies some of the requirements of the Information Centre, and not only are there overlaps in functionality, there are also gaps.

The Corporation has been fortunate, however, in discovering one product which provides almost all the functionality previously provided by the many products above. This product is SAS.

The developers of the product, SAS Institute Inc., define it as "The integrated applications system that gives you complete control over data access, management, analysis, and presentation." While this might seem like typical advertising hype, it is the experience of the Housing Corporation that, in fact this definition is not far from reality. This is particularly the case with the advent of Version 6.07 of the SAS system.

The SAS system is modular and this enables users to select those features required for their own specific purposes.

The Housing Corporation Information Centre uses the following SAS products to fulfill its information access, management, analysis and presentation requirements:

- SAS (Base software)
- SAS/FSP® (full screen product)
- SAS/STAT® (Statistics)
- SAS/ETS® (Econometrics & Time Series)
- SAS/IML® (Interactive matrix language)
- SAS/AF® (Applications Development Feature)
- SAS/ASSIST® (Main drain user interface)
- SAS/GRAPH® (Graphics)

In addition, a further product, SAS/CALC®, soon to become available, will add a valuable, integrated spreadsheet capability to the SAS system.

**Portability**

One of the most powerful advantages of the SAS system as an Information Centre support tool is its exclusive MultiVendor Architecture™.

The concept of MVA™ ensures that users can be truly vendor independent, and not be locked into retaining one particular hardware platform.

This is possible because SAS has been designed in three discrete layers, only one of which, the host layer, is based around the specific hardware platform.
The host layer has been designed by the SAS Institute to "exploit the advantages of each particular hardware architecture", while the other layers, the core and applications layers are platform independent. This has ensured the portability of the SAS system across a large range of computing environments, a factor which has been very beneficial to the Housing Corporation and its Information Centre.

The Information Centre has experience using SAS on a number of operating systems and hardware platforms. This includes MVS/TSO® and VM/CMS® on IBM® mainframes, MS-DOS® on IBM compatibles and UNIX® on Hewlett-Packard minicomputers.

Over the last three to four years, it has progressively migrated its SAS applications and databases towards the UNIX environment, and in particular HP-UX® running on the HP9000/800 series. The ability to migrate towards cost effective hardware solutions with minimal dislocation, was solely due to SAS Institute’s investment in MVA.

This has ensured that all historical database and applications have remained accessible, and in addition, vast benefits have been gained from utilizing the power of UNIX on a hardware platform over which the Information Centre, as users, had complete control.

An Application Development Tool

Without a doubt, one of the most beneficial features of the SAS system is provided by SAS/AF, the application-development facility. This has enabled the Information Centre to develop a whole range of systems within a menu driven environment. The ability to incorporate different types of menu formats ranging from list, to pulldown, to point and click boxes, makes these systems very easy to use and reduces the level of technical knowledge required for new staff to use the system effectively.

Under Version 6.07, SAS/ASSIST will provide inexperienced users with immediate access to the power of the SAS system, and can even allow users to build their own decision support or Executive Information Systems. A further product, SAS/EIS™, builds on this area by providing an object oriented development software for building customised EIS. This offers variance responding and critical success factors as well as the ability to drill down and navigate the rough data. This facility clearly has potentially vast benefits for the business executive wishing to monitor company performance and track changes.

Efficiency and Productivity Gains

The use of one primary software tool by the Information Centre, instead of a myriad of lesser tools, has had significant benefits for the Centre, and the organisation in general.

It supports the integrity, consistency and accuracy of corporate information, by combining data from a number of discrete sources in one centrally maintained and consistent database.

This, in turn, enables more effective access to information, because one tool can be used to extract, manipulate and present the data. Clearly staff also benefit from only having to use one product, and it lets the organisation utilise its training budget in a more efficient manner, saving both time and money.

Because all the processing occurs within the one system, time previously lost on exporting and importing raw data is now spent on adding value to the data to produce quality information.
Finally the cost differential between the SAS system and the many other products it replaces, is not unfavourable, especially when efficiency benefits are taken into account.

Why SAS was our choice

In selecting SAS as our Corporation Information Centre support tool, we faced a number of objections from different sectors of the organisation. However, all of these were able to be satisfied. It is likely that some of you will encounter similar objections, so the following list gives the main ones we encountered, and the key arguments we used to defeat them.

**Cost:**

Add up the cost of all your other tools and the value of the benefits.

**Current hardware inadequate:**

New, more powerful machines are available at relatively low cost.

**Management won't agree:**

Demonstrate the cost effectiveness of the solution and the gaps it fills in the organisation's information management capabilities.

**Too much work:**

More work up front means less work later. Work smarter, not harder!

**Insufficient skills:**

Skills can be learnt, and used for the benefit of the organisation.

**Beyond my responsibility:**

Take the responsibility, take the credit.

**Specialisation makes me less marketable as an employee:**

The expanding demand for SAS skills means demand for good SAS programmers will continue to outstrip supply.

Summary

The Housing Corporation has over 10 years of experience with the use of SAS as an information management and support tool. However, since the advent of Version 6 of the SAS system, its use and value to the organisation has increased dramatically.

From having two SAS users on a bureau system five years ago, we have now progressed to the point where we have seven SAS users on an in-house minicomputer based system, as well as a number of PC/SAS users.

The Information Centre's SAS based system is now the primary system used for all corporate performance reporting, analysis and presentation outside the general ledger system.

Its use has expanded dramatically, and will continue to do so, especially with the growing demand for Executive Information Systems providing managers with rapid hands-on access to performance information.

By concentrating skills development around one tool, we have enabled rapid productivity growth for new staff, and ongoing benefits from existing staff as new features of the system are developed and implemented.

High quality information is, and will continue to be the life-blood of the organisation, and the Information Centre, together with SAS will ensure that it continues to flow.

References:


2) John Naisbett: Megatrends
Notes:


2. MS-DOS, Multiplan and EXCEL are registered trademarks of Microsoft Corporation.

3. MVS/TSO and VM/CMS are registered trademarks of International Business Machines Corporation.

4. UNIX is a registered trademark of AT&T.

5. Hewlett-Packard and HP-UX are registered trademarks of Hewlett-Packard Corporation.

6. Lotus and dBase are registered trademarks of the Lotus Development Corporation.

7. Other brand and product names are registered trademarks of their respective companies.