



Managing complex SAS upgrades

Central Statistics Office, Ireland, 2008-09

Richard Hogben, Amadeus Software, UK

ABSTRACT

The road to a successful implementation of a SAS® server platform can seem more like a slow crawl through the rush hour rather than a speedy run along an empty motorway. There is always the temptation to look for short cuts, for other routes around the congestion, but there are many wrong turns and cul-de-sacs that can trap the unwary project manager.

Amadeus Software successfully navigated the route for the Central Statistics Office of Ireland, a government body with a complex upgrade requirement. With 200 desktop SAS users (and provision to add another 100 using Enterprise Guide in the new environment), it was not an easy matter to migrate them to a single server platform, but the project was achieved on time and under budget thanks to good planning and an excellent working relationship, complementing the technical teams in both organisations.

This paper will explain the management approach to the project, including the strategic and tactical approaches to the project deliverables, change control and the need to manage the expectations of everyone from the SAS users to the Director-General

This paper is for project managers, business sponsors and board members who may be interested in the non-technical aspects of a large and complex SAS implementation.

INTRODUCTION

CSO issued an open tender in the summer of 2008. With hundreds of SAS users, some using version 8 and others version 9, all on desktops, the basic requirement was simple: move all users to version 9 EBI server platform. The detail was far more complex. Nevertheless, Amadeus Software won the contract by demonstrating a deep knowledge of the SAS platform, experience with both SAS v8 and SAS v9, and by assembling a project team with specialist knowledge in key areas.

CSO divided the project into nine distinct Deliverables, each with their own Acceptance Criteria. In practice, the first and last Deliverables were split in two, meaning that there were in effect eleven Deliverables at the start of the project. Other Deliverables were added as a result of change control throughout the project. CSO stipulated that the contract had to be completed in one elapsed year, but the project plan required that the bulk of the work was to be completed in ten months. At that point, CSO needed to have the server in place and to be able to migrate users across using their own staff and resources.

PLANNING THE PLATFORM AND THE PROJECT

The first Deliverable was therefore a Design Document, which proved to be quite different in reality from the original vision.

CSO's original concept was to house all SAS functions on a single server. With three locations in Swords, Dublin and Cork, and many different departments, Amadeus recommended a series of eleven servers, providing resilience and performance for all users in all locations. This immediately meant that the project plan would be significantly altered.

It was important that the requirements were not too prescriptive, and CSO got the balance right. The initial project plan was more than a skeleton, but was not fully fleshed out. Many of the Deliverables were Plans – a Knowledge Transfer Plan, a Service & Support Plan and a Migration Plan among them. There was enough detail for Amadeus to provide fixed prices for Deliverables, even those subject to Plans, enabling CSO to budget accurately for the project and at the same time retain reserve funds for remaining requirements. This was to pay dividends later, enabling CSO to target funds more precisely at the time when needed rather than try to forecast exact requirements almost a year in advance.



The project managers planned two major contingency windows in the project, one in December for two weeks and the other in February for four. In practice, the first contingency pause was swallowed up by hardware procurement, which took a little longer than originally planned. This showed the value of planning such contingency from the outset.

As the various Plans were developed and were accepted by CSO, so the Project Plan developed in detail accordingly. When the Design was formally completed, the sub-project plan for Installation was developed in full. Likewise the Test Plan was accepted before the framework project plan for the Test Deliverable was completed. The final Project Plan was, by the end of the project, many times longer and more detailed than the original plan drafted the previous summer.

Amadeus also adopted a key policy of assigning key consultants as sub-project managers for each Deliverable. They were delegated with the task of achieving the Deliverable by the target date, and developing the sub-project plan to dovetail into the main plan. They were given authority to take any decision within agreed guidelines with regard to timescales, resourcing and priority. This had the benefit of devolving decision-making to an appropriate level, avoiding the need for anything other than serious issues from being escalated to project manager level.

PREPARING THE USERS

Once the Design Document had been agreed and hardware procurement under way, the next Deliverable was that of the Knowledge Transfer Plan. Amadeus identified the training that would be required for SAS Administrators and SAS end-users, but it also provided an opportunity for CSO to prepare the ground.

When making a major infrastructure change such as this, it is very important that the users understand the change and are involved in its implementation. So CSO – using the reserve funds already budgeted for – asked Amadeus under Change Control to run a series of “showcases” to show off the new technology.

Remember that many of the end-users were using version 8, and even those using version 9 had not seen Enterprise Guide in detail, nor were they aware of the new features that would be available to them. So, starting several months ahead of the first migrations, Amadeus set out to tour the three main locations on a regular basis with a series of five different showcases that introduced the new features such as the Office Add-In. The response was highly encouraging: nervousness was replaced with enthusiasm, reluctance with acceptance. The CSO management team were now starting to get requests from departments to be one of the first to migrate to the new platform.

INSTALLING AND TESTING

Now the project entered its longest and most critical phases – installation and testing. Installation started later and took longer than originally envisaged, eleven servers were being installed rather than one. Nevertheless, due to planning the first contingency window, and despite problems with Webtier configuration and SAS licensing issues, testing started on time in early January.

Platform testing was conducted to ISO 9126 standards, and proved to be the key activity in ensuring a successful project. A major problem was encountered when the team ran into difficulties in integrating the Webtier. The reconfiguration and retesting of the platform architecture swallowed up a significant proportion of the second contingency window, but once again forward planning had allowed the first migrations to start on time as planned. CSO took part in an acceptance handover, and were able to verify that the installation and testing had been completed to their own satisfaction before the next stage commenced.

This was typical of every Deliverable – the project plan built in a five-day Acceptance period during which CSO either accepted any Deliverable or notified Amadeus of issues to be corrected or addressed. Building in such acceptance periods mitigated against starting work late on dependent stages.

PLANNING AND IMPLEMENTING MIGRATIONS

Migration Planning started in early January, and the Plan was developed alongside testing. This



approach meant that the migration procedure, designed to be implemented by CSO's own SAS team, could be adjusted and modified to reflect any issues or problems encountered during testing. The Plan is written as a generic document applicable to any department or group within CSO, with flexible elements to meet individual departments' needs.

The first department to be migrated was Crime & Criminal Justice, based in Cork. This also served as a test of the Migration Plan and associated procedures. The migration took place over about three elapsed weeks, reflecting the importance and size of this particular department.

Formal training classes in Enterprise Guide were also co-ordinated to give the users appropriate training in the new tools. Timing was critical, so courses were planned to train the users at a time which allowed them to return to their desks and use the new software and platform immediately. This maximised the effectiveness of the training. The courses had been organised under Change Control, a benefit of CSO's approach that training was only specified after the Knowledge Transfer Plan had been approved. CSO could now target their training budget precisely at the needs of their end-users and know that not a cent was wasted.

CHANGE MANAGEMENT

Change management did not always result in additional costs, but was used to control changes to timescales and milestones. During migration, a security audit run by Amadeus revealed a possible loophole that might allow sensitive information to leak between departments. A change request was raised and migration dates for the second department, Census & Population, adjusted to allow this loophole to be closed. As a result, the Migration Plan and procedures were amended to ensure that the loophole did not reopen during future migrations.

ADMINISTRATOR AND SYSTEM SUPPORT

To ensure that CSO would become self-sufficient, CSO also appointed two SAS Administrators from within their ranks. The administrators attended training in SAS Administration at Marlow, and to reinforce that training, CSO also decided to ask for additional Administrator Support via a change request to Amadeus. This allows CSO to call upon Amadeus whenever a new department is being migrated to the new platform.

Separately, post-project support is in place to give CSO added reassurance and backup in the event that problems and issues occur. The support is based on the Service & Support Plan, one of the nine Deliverables, which defines the ongoing maintenance and administrative support procedures to be undertaken by CSO's own SAS Administrators. Support comprises Planned Maintenance, usually on a monthly basis, and On-Demand Support for unforeseen issues.

Amadeus also provide the training courses for end-users during migrations, which CSO found to be the most cost-effective way of handling end-user education.

PROTOTYPING

The last of the nine Deliverables started out as the least well-defined, but has ended up pointing CSO at the future with SAS. Having agreed a "design" document with CSO, Amadeus then created a series of workshop modules that showed key users how to get the most from the new features of SAS version 9. In the early stages, much of the SAS work on the new platform will be running old code developed under version 8, but CSO have seen what the power of SAS9 can do and can now move smoothly into a world of new features using the Webtier to surface information to information consumers and share information between departments.

CONCLUSION

When setting out on such a complex implementation, and with so many users to migrate, it is very easy to rush into implementation without preparing the ground first. Therefore, advice to project managers embarking on such a task would be:

- **Allow** plenty of time for design and project planning.
- **Build** contingency windows into the plan.



- **Change Control** is a must for changes to timescales, whether costs are affected or not.
- **Delegate deliverables** to competent sub-project managers.
- **Everything need not be pinned down in detail at the start, instead plan for planning.**
- **Finish every deliverable with a formal acceptance period.**

REFERENCES AND ACKNOWLEDGEMENTS

Jennifer Banim: Central Statistics Office, Cork, Ireland.

CONTACT INFORMATION

Your comments and questions are valued and encouraged. Contact the author at:

Author Names Richard Hogben
Company: Amadeus Software Limited
Address: The Old School Hall, 11 Wesley Walk, Witney, Oxon, OX28 6ZJ
Phone: +44 (0) 1993 848010
Email: Richard.Hogben@amadeus.co.uk
Web: www.amadeus.co.uk

SAS and all other SAS Institute Inc. product or service names are registered trademarks or trademarks of SAS Institute Inc. in the USA and other countries. ® indicates USA registration. Other brand and product names are trademarks of their respective companies.