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Re-engineering the UK National Accounts System

Prepared by the UK Office for National Statistics

Re-engineering the UK National Accounts system

Background

1. All the processing systems throughout the UK Office for National Statistics were reviewed during 2001 as part of the ONS modernisation programme. The National Accounts system was identified as one of the systems most at risk and in urgent need of complete overhaul. We use the term "re-engineering" to describe this overhaul. One of the aims of the modernisation programme is to achieve standard generic systems and processes throughout ONS (for example seasonal adjustment, time series, deflation). The re-engineered National Accounts system will therefore make maximum use of standard ONS tools.
2. ONS compiles and publishes both the UK National Accounts and UK Balance of Payments. The figures for the Rest of the World sector have always been fully consistent with the BoP figures. However they are produced via a combination of largely separate systems and so the data go through a process of reconciliation. Re-engineering will enable the compilation of both datasets on one central system. National Accounts throughout this paper includes Balance of Payments.
3. The business case for the fundamental re-engineering of the National Accounts was approved in April 2002 and the project was started in May 2002. It is planned to have a fully tested and quality assured system in place by March 2006.

Outline of the Project

4. The project is to re-engineer the methods, business processes, data flows, computer systems and organisational structure that underpin National Accounts production. The aims of the project are to:
 - develop processes and systems that are more standard, more transparent, faster, more efficient, less complex, less labour-intensive, less error-prone, less risky;
 - enable delivery of better quality and more reliable estimates of National Accounts;
 - provide better, more reliable evidence of economic activity on which government and other key stakeholders can base decisions;
 - provide a better and more responsive service to key customers of the National Accounts.
5. Expected benefits in addition to those above are
 - less stress and greater job satisfaction for those operating the system
 - more time across the National Accounts team for analysis, validation, briefing
 - significant savings released in first full year after implementation.

6. One of the key strengths of UK National Accounts is the high level of integration, particularly between financial accounts and the rest of the system, and the inclusion of Balance of Payments with the accounts for other institutional sectors. The output figures are integrated but the systems producing them are not. The project aims to build on this methodological strength by developing a fully integrated National Accounts system rather than separate systems for, say, Balance of Payments, GDP, Government, Financial Account.

Timetable, Milestones and Targets

7. The first milestone was a full User Needs Review. All major users and stakeholders were consulted to confirm their current and future needs. Data delivery was an important part of this review. It was completed by March 2003.

8. The second important milestone was the completion of a High Level Methods Review by the end of 2002. The Review confirmed the basic structures of the National Accounts and set out a number of statements that will underpin the compilation of the National Accounts. For example the central role of current and constant price supply-use tables was clarified and a key finding was that the integrated framework of the National Accounts should be strengthened. In particular the Review confirmed that "Balance of Payments estimates are strengthened by being produced within an accounting framework and with confrontation with data for domestic sectors". The recommendations of the Methods Review were considered and accepted by the ONS Statistical Policy Committee.

9. Both the User Needs and High Level Methods Reviews are being used to inform detailed planning for the re-engineering project. The first key stage of the project is the business analysis stage. This is now well underway. Given the breadth and complexity of the National Accounts, the business analysis stage amounts to a major piece of work that is expected to take until the end of February 2004. The compilation and analysis process for each dataset is being identified in two ways - how it is at present and how we want it to be. The outputs of the business analysis stage will form inputs to next stage of the project - the systems analysis stage - in which system implications of the business requirements will be assessed.

10. Future milestones and an outline timetable are:

- complete full business stage: February 2004
- systems analysis: April 2004 - June 2004
- design and build systems: April 2004 - June 2005
- testing, parallel running and transition to production: October 2004 - February 2005
- fully tested and quality assured system in place: March 2006

11. Since the project's inception, the project team has initiated and maintained contact with national accountants in 17 other National Statistical Institutes. In addition, the High Level Methods Review drew heavily on experience in the international community. This has ensured ONS is sharing knowledge and learning from the experiences of others for the future benefit of UK National Accounts.

Barriers

12. It is a major project that presents particular challenges in terms of the methodological developments, nature and complexity of the National Accounts, and tight time scale. Any significant changes to the project could therefore have serious implications for the final delivery date, and lead to the current risks to the National Accounts continuing further into the future.

13. We recognise that there is a need for continued provision of good quality data while re-engineering is under way. The project team is working closely with National Accounts Group staff to ensure successful delivery of both core outputs and re-engineered systems. The problem is that experienced and expert staff on each dataset are needed for significant periods during the business analysis stage, and they will be needed for even longer periods to contribute to subsequent stages, particularly for the testing, parallel running and transition stage. These are the same people who are needed to ensure that good quality outputs continue to be published.

14. ONS considered temporarily suspending some National Accounts products in order to free up scarce skilled resources to contribute to the re-engineering project. Consultation with key customers indicated clearly that this was not feasible. Instead, where possible, we intend to scale back our development programme to concentrate resources on re-engineering. We have told major users that it is unlikely we will be able to make any significant improvements or development to our standard outputs over the next few years. Re-engineering is out top priority after the regular outputs. Users have assured us that they agree with our approach, and have promised to limit their demands.

15. The re-engineering project will need considerable investment throughout its life. Most of the costs will be on appropriately qualified people to design, build and test the new systems.

Re-engineering the National Accounts and Balance of Payments

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Outline

- background to the project
- project aims and objectives
- progress to date
- next steps and future plans

- “National Accounts” includes BoP



General background

- Modernisation Programme across ONS
- structure, standard software, information management, systems
- project managed, full time resource, external recruitment
- expensive, takes time
- business case supported by users, Treasury



Project Background

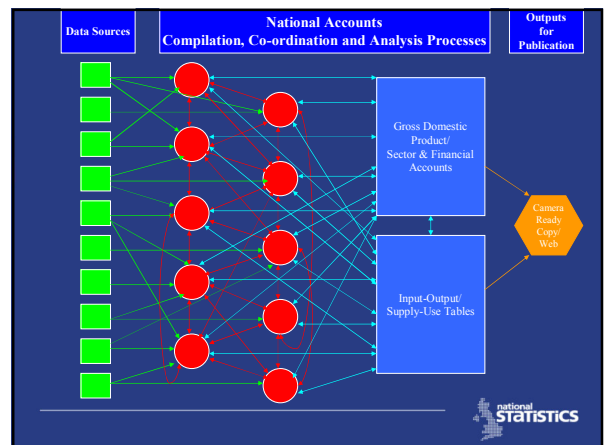
- National Accounts identified as system in need of re-engineering: 2001
- Scoping study: January - March 2002
- Business Case: April 2002
- more detailed reviews and planning: May 2002 - March 2003
- completion of project: March 2006



Findings of Scoping Study

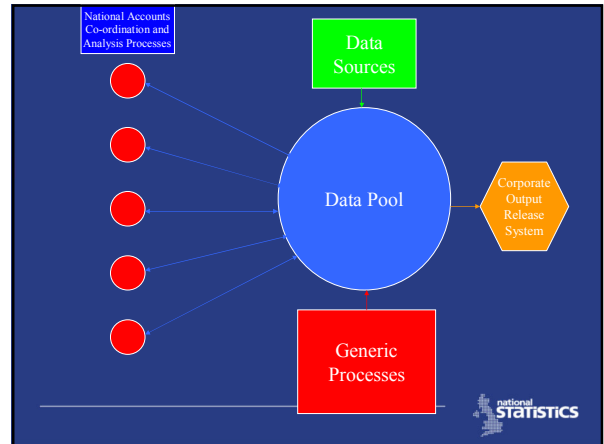
Main issues and concerns:

- over-complicated separate systems in each area
- non-standard processes and software
- data flows that lack structure
- methods based on out-of-date assumptions
- methods development was ad hoc, not corporate
- heavy reliance on small numbers of experienced staff
- little capacity or functionality for analysis



Project Aims

- develop processes and systems that are more standard, more transparent, less complex, less labour-intensive
- enable the delivery of better quality and more reliable National Accounts
- provide a better and more responsive service to key users of the National Accounts



Project Objectives

- identify future user needs
- reassess and update the methods and assumptions on which the National Accounts are based
- ensure the availability of appropriate standard statistical tools
- re-engineer the NA processes and data flows
- re-engineer the computer systems

Progress so far

User Needs Review completed:

- discussions with key users of National Accounts
- re-assessed user needs at a strategic level
- at a detailed level, need to ensure that the National Accounts of the future will be user-driven rather than producer-driven

Progress so far

- identified requirements for several statistical tools, for example time series analysis, seasonal adjustment, index number construction
- specified requirements for management and manipulation of time series in a central ONS repository for data
- consulted other National Statistical Institutes

Progress so far

- completed High Level Methods Review
- main conclusions:
 - estimates to be data based, not model based
 - clear separation of "aggregation" and integration/balancing
 - supply-use framework at centre of system
 - use of expert systems for automatic balancing

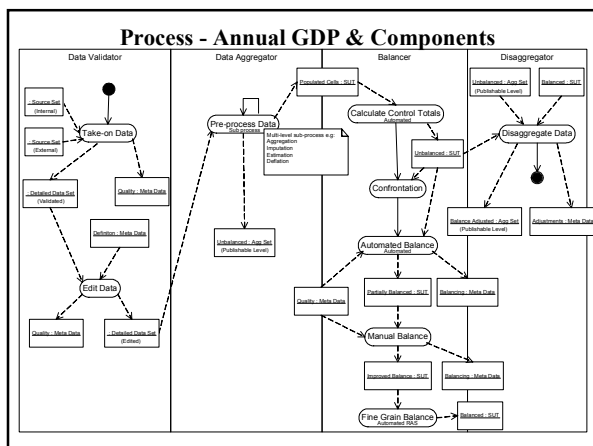
Progress so far

- detailed work programme prepared based on outcomes of User Needs review, Methods review: end March 2003
- high level specification of systems, processes and required functionality of the re-engineered system prepared: end April 2003

Current work

Business Analysis:

- establishing current processes in each area (“as is”)
- identifying the functionality, methods and processes needed for the re-engineered system in line with the Methods review
- drawing pictures to reflect high level processes needed for each area (the “to be” processes)
- completed by February 2004



Future work

- establishment of a Users' Forum: Spring 2004
- Systems Analysis: October 2003 - June 2004
- design and build systems: April 2004 - June 2005
- quality assure, parallel run, deliver systems: October 2004 - February 2006
- all new systems and processes to be implemented: March 2006.

General points

- tried to suspend some outputs to release staff time for re-engineering
- identifying new skills and appropriate learning
- may need a different organisation structure
- encourage people to see the changes as opportunities, not threats: communication and involvement