CORPORATE INFORMATION STRATEGY DEPARTMENT OF SOCIAL AND FAMILY AFFAIRS

Department of Social and Family Affairs
An Roinn Gnóthaí Sóisialacha agus Teaghlaigh
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Contents

Executive Summary

The DSFA corporate mission is 'to promote a caring society through ensuring access to income supports and other services, enabling active participation, promoting social inclusion and supporting families'. While the Department has developed the operational capacity to ensure efficient access to income supports, the active participation and social inclusion objectives require DSFA to measure the effectiveness of its policy interventions. This should be done through analysis of past and present administrative data to see 'what worked' for various groups. Also, social surveys and social research give insights into the wider influences behind outcomes for DSFA customers. The Department needs to fully exploit administrative data, in conjunction with other social statistics, to fully understand these complex outcomes.

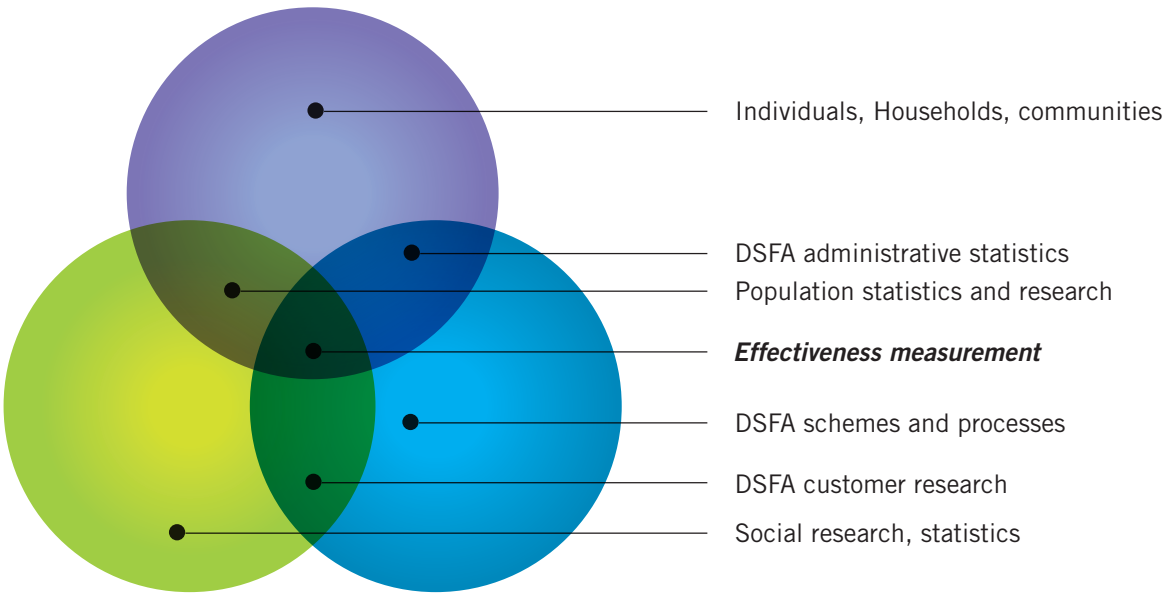
Chapter 2 of the Strategy covers data needs across the life-cycle, with an emphasis on upcoming medium term policy and operational developments. For DSFA data, a profiling approach is recommended, which will allow data to be analysed over the course of a life-cycle as well as within administrative (scheme) boundaries. Recommendations for development of CSO and other National statistical sources are outlined in this chapter, as these statistics should provide a useful monitoring framework for DSFA policies. Chapter 3 covers capacity and infrastructural issues, which are the 'enablers' that are needed to ensure that data and statistics are properly used in the Department. Issues in relation to data quality standards, data ownership, information infrastructure, data protection, analytical capacity, communication of user needs and supporting wider social research initiatives are examined in this chapter. Finally, the main strategic actions needed to progress the strategy are set out during the text and are summarised in the Corporate Information Strategy Action Plan (appendix).

1. Introduction

The DSFA corporate mission is 'to promote a caring society through ensuring access to income supports and other services, enabling active participation, promoting social inclusion and supporting families'. While the Department has developed the operational capacity to ensure efficient access to income supports, the active participation and social inclusion objectives require DSFA to measure the effectiveness of its policy interventions. This should be done through analysis of past and present administrative data to see 'what worked' for various groups. Also, social surveys and social research give insights into the wider influences behind outcomes for DSFA customers. The Department needs to fully exploit administrative data, in conjunction with other social statistics, to fully understand these complex outcomes.

DSFA is an intensive user and producer of data and statistics. As in all Government functions, record keeping is central to the administrative business of the Department. What sets DSFA apart from most other Government Departments is the scale with which this information is stored electronically given the size of its customer base. The Department has high volumes of transactions with most of the population, so customer data tends to be frequently updated and broadly based. Over 1 million people receive a weekly social welfare payment, and data holdings in relation to these customers are central to the Department's main business of scheme administration. The resultant data holdings cover significant parts of the population across the life-cycle. For instance, records are maintained for many older persons since 90 per cent of people aged over 65 are beneficiaries of social welfare. The Department also has policy responsibility for the PRSI system, which is operated by the Revenue Commissioners. Significant data holdings are held in common by both Departments for the 3.1 million people covered by social insurance, most of whom are active in the labour market. Finally, the Department is responsible for administering child benefit to 1.1 million children in 600,000 families. The Department interacts with most of the population of Ireland across all phases of the life cycle, and its business is based on regular data collection to ensure that payments/ entitlements are quickly and fairly processed.

The main focus of the Corporate Information Strategy is on getting more value from the Department's structured data (i.e., data held on databases in defined formats). The Department also needs to get more unstructured data into databases where it can be analysed for operational and policy purposes. These unstructured records include paper forms and data held in formats that cannot be easily analysed,



such as addresses. A range of 'enablers' need to be put in place to facilitate analysis of DSFA data, which include data quality standards/metadata, analytical software and training for data analysts. The Department's data resource could be further developed through improved usage of Revenue data and linking against other Departments' data via the PPS Number, subject to data protection requirements. There are also a range of public service obligations in relation to client authentication that need to be fulfilled using DSFA data.

However, it is recognised that the economic and social outcomes experienced by DSFA customers cannot be fully understood through improved analysis of its own data holdings. This must be supplemented with analysis of other sources and social research generally. DSFA data has valuable key qualities (such as wide population coverage, frequent updates based on transactions and a long time series available for analysis). Some important shortcomings are clear, however, when compared to e.g., the Census of Population which covers the whole population. The Department can only collect information as people transact with the social welfare system, so that changes in household composition and migration flows will mean that it is difficult to maintain complete and up-to-date records for the entire population. Furthermore, DSFA is restricted in the range of personal data it can request from a customer to that which is relevant to their claim and the Department's operational needs, even if a broader set of personal data would be useful for the interpretation of trends in schemes and underlying economic and social patterns affecting the social welfare system. As a result, DSFA schemes and policies are often assessed by the social outcomes they produce, which are measured in social surveys carried out by the Central Statistics Office (CSO). The Department needs to ensure that these statistics usefully feed in to policy development and planning programme changes. This requires that the Department clearly communicates its data requirements to CSO, and increasingly to 'fourth level' research institutes, and also understands the relationship between its policy inputs and these social outcomes.

Finally, the Department has public information obligations insofar as it is a major source of important socio-economic data (scheme data, Live Register numbers, etc.) and is part of a wider Government social policy community. There should be improvements in the range of statistics published by the Department, accompanied by better use of presentation methods (e.g., increased availability of interactive tables on the internet). The Department should actively engage with researchers to understand the impact of its schemes on individuals and society, and should form partnerships with CSO and other bodies to produce 'added value' multi-dimensional reports based on a wide range of administrative and statistical sources.

1.1 Strategic objectives

A coherent and comprehensive strategic approach is required if the Department's wide range of information needs, together with other wider national data needs, are to be addressed effectively. Four high level goals were identified in the 'DSFA Data and Statistics Strategy 2005-2007', and these goals are still appropriate for the Corporate Information Strategy, with some minor modifications to reflect an emphasis on operational monitoring issues;

1. To meet our international and national requirements for high level policy indicators, e.g., the National Anti-Poverty Strategy (NAPS) consistent poverty indicator and data on supplementary pensions coverage.

2. To develop DSFA data holdings as a resource supporting policy development, programme evaluation and operational monitoring, e.g., measuring the impact of policy change options.

3. To ensure that our data sources facilitate national developments in social and equality statistics, e.g., allowing integration of data using the Personal Public Services (PPS) Number.

4. To meet the wider public information needs regarding our schemes, e.g., the annual 'Statistical Information on Social Welfare Services' report.

1.2 Structure of the report

Chapter 2 covers data needs across the life-cycle, with an emphasis on upcoming medium term policy and operational developments. Chapter 3 covers capacity and infrastructural issues, which are the 'enablers' that are needed to ensure that data and statistics are properly used in the Department. Issues in relation to data quality standards, data ownership, information infrastructure, data protection, analytical capacity, communication of user needs and supporting wider social research initiatives are examined in this chapter. Finally, the main strategic actions needed to progress the strategy are set out during the text and are summarised in the Corporate Information Strategy Action Plan (appendix).

2. DSFA information needs and the life cycle

The 'life cycle' approach was proposed as a framework for the development of social services in Ireland in the National Economic and Social Council's 'Developmental Welfare State' report. It was subsequently recommended as the national policy framework in the most recent social partnership agreement, 'Towards 2016'. The approach envisages that social services will respond to the needs of individuals on a tailored basis, with Departments and agencies working together to deliver the appropriate mix of income support, services and activation measures required for personal development. The Corporate Information Strategy needs to support this approach by highlighting;

- the personal data needed to identify
  (i) barriers to employment for people of working age and
  (ii) income support needs across phases of the life cycle
- how can policy performance and operational efficiency be measured in such a complex social and economic environment
- how this personal data should be collected, coded and archived
- how the Department should analyse the data to support decision making
- the best approaches to data sharing in support of cross Governmental services, while addressing increasing concerns about privacy.

This chapter discusses the first two points (data requirements and performance measurement), while chapter 3 covers the more technical issues raised in the last three points.

2.1 DSFA policies and social outcomes

DSFA schemes provide income support on a universal, entitlement (social insurance) or needs basis to people at all stages of the life cycle. Most of the Department's income support is provided to individuals and families on low incomes, so poverty outcomes are particularly relevant as a performance measure for DSFA policies.

The Department provides income support to those who need it as efficiently and fairly as possible. However, it is widely recognised that work is the best route out of poverty; work and social participation also provide the best insurance against the inter-generational transmission of disadvantage. DSFA is increasingly involved in cross-Departmental initiatives to support people in taking up employment opportunities. The information required to support programmes that remove barriers to employment for customers is more complex and detailed than for a system solely focussed on income support. This applies to the measurement of both efficiency of services provision and effectiveness in helping people into sustainable employment.

2.1.1 Operational data – current situation

The operational areas of the Department are required to deliver payments efficiently to customers. Measuring efficiency of services delivery has been a key focus for the Department for many years, and has been developed through the Management Information Framework and subsequently the monthly Management Information Reports. While an accepted set of services delivery indicators has been developed over time, these statistics are sourced through a variety of means, and standards and accessibility tend to vary depending on the source. These issues are covered in more detail in chapter 3.

The Department has developed control procedures to ensure that welfare fraud is minimised, and to also minimise errors in claim registration and processing. Control work in the Department is heavily data driven, and uses data matching across DSFA systems to identify potentially fraudulent claims. Fraud and error levels in claims are assessed through a programme of surveys; around three schemes per year are surveyed on a rotating basis. Benchmark levels for fraud and error have been established for most DSFA schemes at this point. In addition to these activities, the Department's

systems facilitate event notifications between scheme areas, so that risks are notified as they are identified for individuals or groups of customers.

The main information challenges facing the operational areas of the Department are to (i) develop case management information and (ii) develop a more advanced, risk based approach in control procedures. This should be facilitated by the Department's systems modernisation programme (SDM), which is described in more detail in chapter 3.

2.1.2 Policy data – current situation

In addition to Departmental administrative data, National statistics are essential for monitoring DSFA customer outcomes, and also facilitate comparisons with the wider population. To fully support policy development in the Department, three broad areas which need to be developed are set down at 2.2 below;

- improve the range and analysis of DSFA administrative statistics to facilitate assessment of the impact on social outcomes of policy changes (section 2.2.1)
- improve national statistics in light of the data gaps identified in section 2.2.2 of this chapter; also, more detailed analysis of survey data based on policy issues arising in DSFA is required, ideally to be done in house by DSFA staff
- develop combined survey and administrative sources that help DSFA's understanding of the impact of schemes (e.g., the SWITCH tax-benefit model, data matching by CSO of DSFA and survey data and development of take-up statistics – section 2.2.3).

2.2 Developing data to meet DSFA information needs

2.2.1 DSFA administrative data

Based on the results of the 2007 Data and Statistics Strategy data needs survey, and the experience gained in the DSFA/ESRI employment activation programme (part of the Social and Economic Participation Programme), a basic case management/outcomes measurement profile for individuals could be built up using the following personal information at PPS Number level[1];

1. This proposal is intended as a base for further development of the profiling approach. Having a profile available at customer level means that every subsequent field added to the profile is enhanced by the information that is already available. For example, when questions on pension coverage were added to the Quarterly National Household Survey it was possible to assess coverage by age, sex, occupation, industrial sector and hours worked based on the information already collected in the survey.

Draft proposal for a DSFA reporting profile;

Personal data	Date of birth
	Sex
	Marital status
	Occupation (last recorded)
	Family relationships
	Number and ages of children
	Outcome of medical assessment for claims where relevant[2]
	Description of disability/illness[2]
	Household composition[3]
	Nationality
	Housing tenure(may need to be augmented over time)
	Geographic location of household (precision will need to be improved through future use of An Post's GeoDirectory and/ or, if implemented, postcodes) and address history
Personal data not currently available[4]	Literacy/numeracy difficulties, access to transport (own car or public transport), level of education attained
Information on transactions with SW and Revenue	Social welfare claims history – date of award, payment type, claim amount to date (stored on an annual basis), additions for adult dependants/CDAs, date stopped
	Earnings (P35) – earnings per employment during the year, Weeks of Insurable Employment; industrial sector and size of employer (total employment per. the Revenue employer number) – further information might be usefully recorded from employer investigations as well
	Contributions by insurance class and credits during the year
	Self employed income during the year
	Means broken down by source; income/means before disregards are applied also needed
Employment related information not currently available	Supported employment history and general FAS activity
	Full or part time employment
	Hours worked

2 Outcome of medical assessment and description of illness/disability could either be the last recorded information or else be collected on a transactional basis, i.e., with every new illness or disability claim. These fields could only be included by agreement with certifying doctors and medical assessors

3 Household composition is difficult to update based on administrative data; maintenance of household information may be possible through other methods, e.g. whether people still reside in the same geographic location

4 These fields were identified as key barriers to employment in the activation programme, though there may be data protection concerns to be addressed in collecting the information across all customers

However, for reasons set out in the introduction, DSFA systems will never be in a position to provide a 'rolling Census', as information is transaction based and only captures information relevant to the Department's activities. To fully assess customer outcomes, data from other providers will always be required to supplement administrative data.

2.2.2 DSFA requirements for National statistics

Data on labour market outcomes are crucial for monitoring how DSFA schemes support people in

returning to employment, while poverty data show the effectiveness of income supports in supporting an adequate standard of living for DSFA customers. The Quarterly National Household Survey (QNHS) and the Survey of Income and Living Conditions (SILC) meet most of these needs at present. In addition the longitudinal childrens' survey ('Growing up in Ireland') and the proposed TILDA ageing longitudinal survey will support policy developments in various areas. Data needs for these surveys are set out below:

QNHS - more detailed information is needed on the relationship of the unemployed as identified in surveys to the Live Register (LR) unemployed; given recent LR trends, the flows into unemployment in both sources may need to be reconciled. Analysis of flows in the QNHS is needed to help with customer profiling, and more analysis generally of the inactive population is required to help with activation policy. In addition, given recent labour market developments, a more intensive assessment of recent flows into employment and unemployment might be considered.

SILC – more detailed analysis of the profile of low income families and the impact of child income supports on family incomes is needed.

Longitudinal surveys – there are two studies in development which will inform DSFA policies in the coming years, covering opposite ends of the life cycle; the TILDA study covers people aged 50+ over a ten year period while the Growing up in Ireland Survey is the national longitudinal survey of children.

The **TILDA** study will provide extremely detailed information on disability prevalence and acquisition of disabilities for people aged 50+. It will also provide information on how the acquisition of a disability affects peoples' work patterns and incomes. This group form 50% of all claiming the three main DSFA illness/disability payments at present, so the information will have a direct relevance to activation approaches for this group. In addition, the TILDA study will provide useful information for pensions policy development, such as the reasons behind retirement decisions and the level of replacement income that people attain at retirement.

For the **'Growing up in Ireland'** survey, the Department will have a particular interest in the socio-economic factors behind child development. The Department's policies are part of a wider set of social supports for families, and the Growing up in Ireland Survey will be useful in identifying how these supports interact to support child well being.

2.2.3 DSFA requirements for other administrative data and combined data

Apart from DSFA administrative data and National surveys, there is great potential for combining data across administrative data sources and survey data, which was identified in the National Statistics Board's SPAR[5] report. Some potential uses of this information include:

Other administrative data holdings – there is a wide range of Departments and agencies providing services to DSFA customers. There would be a great benefit in integrating the data holdings of these Departments to explain how customers experience difficulties across multiple social domains. This could be done via PPS Number matching or through GIS procedures, and the Department will support any proposed activities in this field, subject to data protection requirements being met. Some potential areas of interest are set out in section 3.1.5.

Matched survey/administrative data – the PPS Number is collected in the SILC, QNHS and National Disability surveys, and the Department will work closely with CSO to assist it in developing policy relevant statistics using combined administrative and survey data. This will be of particular relevance for measuring take-up levels for DSFA benefits, since it allows identification of people who were entitled to benefit in a period but did not claim it.

5 Statistical Potential of Administrative Records, NSB, April 2003

2.3 Summary of main data needs

Progressing the customer profile will facilitate improved analysis of activation measures and measurement of outcomes in the Department in the medium term. The Department, in conjunction with CSO and other researchers, needs to make the best possible use of available administrative, survey and combined data to address policy issues. Immediate requirements in this respect are in the child income support area and disability schemes. The Department will also actively participate in the development of longitudinal surveys in the coming years, as these surveys will help in understanding how different social supports combine to influence outcomes for customers. Improved data availability for vulnerable groups is the main data requirement for poverty and social inclusion monitoring. The Office for Social Inclusion will actively participate in the ongoing assessment of poverty measures at national and EU level and in particular will monitor ongoing issues in relation to future and existing NAPinclusion targets.

The action points related to this needs assessment in the Corporate Information Strategy Action Plan are under goals 1 and 2, i.e.;

1. **Develop socio-economic aspects of longitudinal surveys and liaise with CSO on an ongoing basis to develop new policy relevant statistics**

2. **Improved data availability for vulnerable groups, including poverty measurement, barriers to employment, etc.**

3. **Progress the customer profile, including family/household coding and GIS development**

Other action points are set out after the relevant text in the Strategy, while timings and responsibilities for the actions are included in the Action Plan in the appendix.

3. Maximising the value of data

Payments are processed in DSFA based on three main IT systems (BOM, ISTS and PENLIVE). Extracts of claims at a point in time are taken from these systems and are analysed to support operational and policy decisions. The older systems usually hold less customer data, and various software packages are used to analyse the extracts with varying levels of functionality. Over time, all schemes will be supported through the Business Objects Model (BOM) implementation, which is based on a 'whole system' development of services to meet the Department's needs. This improves opportunities for data availability for each scheme, and offers an opportunity to build future information requirements into information systems. This Strategy aims to inform the modernisation programme in relation to cross-Departmental data needs. This chapter identifies, from a practical perspective, various supports (a 'data office' for monitoring standards across the Department, analytical software, training, etc.) that will ensure that the improved data resource is fully utilised in the Department.

3.1 Data protection

Good quality information on individual cases is an essential 'building block' for data analysis, and a robust data protection regime is required to underpin public confidence and ensure the integrity of that data. The public need to have confidence in DSFA's data protection regime in order to provide complete and accurate personal data. Data protection is therefore central to the DSFA Corporate Information Strategy. There are eight data protection principles[6] set out in the Data Protection Commission's legislation and some practical implementation issues are set out in this section. Access to customer data should be limited to staff who need to access the information for business purposes, and customer information should not be held on active systems when it is no longer needed. While data matching is essential for the Department to perform its functions in many ways (establishing entitlements, identifying fraud, etc.), there needs to be confidence that DSFA only accesses data required to carry out its business functions.

6. 1. Obtain and process information fairly.
   2. Keep it only for one or more specified, explicit and lawful purposes.
   3. Use and disclose it only in ways compatible with these purposes,
   4. Keep it safe and secure.
   5. Keep it accurate, complete and up-to-date.
   6. Ensure that it is adequate, relevant and not excessive.
   7. Retain it for no longer than is necessary for the purpose or purposes.
   8. Give a copy of his/her personal data to an individual, on request.

3.1.1 Data access policy

The underlying security model for the Department's systems is being developed at present, which will be reflected in the Corporate Portal and other ICT systems. This work will incorporate a definition of 'who is permitted to access what', which requires agreement on how users and activities are classified in the Department. This work will be progressed over the coming year (2009-2010).

3.1.2 Data retention and archiving

Data retention is a key focus of the Department's programmes, and transferring data from paper to electronic formats allows for much more effective retention policy implementation. There are also legislative requirements in this area which specify time limits in respect of deletion of inactive information. However, in the context of an information strategy, the data retention policy needs to be backed up by a data archiving policy, i.e., removing data from active systems where details can be updated and storing it for data analysis purposes only. The three key advantages of DSFA data are its wide population coverage, frequency of updates and the time series dimension, and DSFA data analysts need to leverage these advantages. The following approach needs to be considered as part of this policy;

- A time series (e.g., monthly, annual data) is required for analysis of long term trends, which goes beyond our legislative requirements for data retention

- This time series could be accessed via an integrated repository of data for analytical purposes

- The data in the repository should be anonymised as far as possible (e.g., take out names, addresses, PPS Numbers, etc.)

3.1.3 Data exchanges and physical security

Physical security of data has been a key focus for the Department in recent years, and data transmissions based on physical media are no longer allowed to or from the Department. In addition, all data exchanges must be in encrypted formats. This policy will continue to be developed and monitored over time. In the immediate future, data loss prevention and data obfuscation (anonymisation) software will be implemented to reinforce data security in the Department.

3.1.4 Data matching – internal DSFA/Revenue data

Integration of the Department's records around the PPS Number has facilitated a range of operational initiatives across the Department, from control measures to identity management. In addition, the Department has a detailed 'Memorandum of Understanding' with Revenue in relation to shared data between the two Departments, which supports the PRSI system. While matched data has been heavily used in operational programmes, it has been used mainly on an ad hoc basis to support policy reviews. A profiling approach will help to extract more value out of this information, particularly in relation to activation and measurement of policy effectiveness. In addition, the increased use of dynamic transaction/messaging data across the Department and between scheme areas will enhance the value of the shared data resource.

3.1.5 Data matching – other administrative data

The life cycle approach is based on a tailored response to customer needs, which requires information on the background, skills and attributes of each customer. This approach has been piloted in the Department via the Social and Economic Participation Programme. The information collected in this pilot includes; Education (age when left formal education may be used as a proxy), skills level (whether an apprenticeship has been completed), literacy/ numeracy difficulty, location (urban vs. rural), health/ perception of health, motivation (willingness to move location is used as a proxy), history of employment, history of unemployment, (total of spells of employment and unemployment as well as most recent spell), access to (public/private) transport.

It would clearly ease the administrative burden on customers if some of this data was available via matching against other administrative data sources at PPS Number level, and would also support the Department's move towards paperless administration, as set out in section 3.2. However, this could only be done through negotiation with other Departments with data holdings, involving the Data Protection Commissioner and possibly CSO, to establish what data could be shared and for what purposes (case work, background profiling, policy evaluation at aggregated level, etc.). Data matching opportunities that were identified in the data needs survey included;

- Department of Education and Science data on educational attainment and qualifications

- GRO/GNIB[7] data on age, sex and immigration status

- Improved linkages to FAS and Revenue data

- Information on maintenance payments from the Courts Service

- Environment/ Local Authority data (e.g., car ownership from the Vehicle Registration Unit database and Local Authority data on housing costs and tenure).

- Individual or bulk notification of events across these data holdings for activation purposes.

7 General Registrars Office and Garda National Immigration Bureau

Possibilities for data matching were also raised in the Department of Education and Science (DES) data strategy, so links between DSFA and DES could be explored as an initial step.

3.2 Data quality standards (metadata)

While DSFA produces vast amounts of customer data, information on data quality and 'metadata' is less well developed. This can lead to issues where a number of different definitions are being used for the same data. Data standards have been developed in recent years for DSFA information through the Document, Records and Information Management (DRIM) programme. The long term aim of the DRIM programme is to eliminate the need for paper documents where possible, including claim forms. This requires that all information in relation to customers is captured and stored, increasingly through new methods (e.g., pre-populating fields from shared data holdings to speed up registration and scanning/recognition of claim forms) and new information channels. A 'taxonomy' for data was developed as part of this process, which covers the possible values, formats and classifications for data held by the Department. The SDM[8] programme, in combination with the Department's strategy on customer information channels, aims to ensure that the Department's transactions with customers are recorded electronically and subsequently used to support efficient customer service delivery. This has obvious downstream benefits for data analysis in the Department, which should be identified and informed by the Corporate Information Strategy.

An initial list of metadata/data quality indicators could be set out as follows;

Source (payment system, P35 collection, etc.)
Definitions (e.g., what does 'in payment' mean)
Date of update (timestamping)
Frequency of update (e.g, weekly, yearly, as required)
Previous values available prior to update (e.g., previous addresses)
Coverage (how many scheme records have a value for this field)
Coding frame (e.g., M/F for sex – with generic codes clearly identified)[9]
Formats (e.g., acceptable date formats)[9]
Data retention – time series held on the data repository, etc.

The approach taken for metadata and data quality can vary in line with the importance of the data collected. Clearly, for some DSFA data, standards need to be agreed centrally and implemented for all areas. This includes definitions for certain variables (e.g., definition of 'recipient'/in payment at scheme level, management information processing definitions, etc.) and requirements for data for some key processes, such as the annual estimates. At other levels, it is sufficient for metadata to be available to people who are using the data. At these lower levels, a 'data office' should be established in the Department to ensure that the taxonomy and standards generally are implemented. Metadata/data quality requirements for various levels of data are set out below.

3.2.1 'Level 1' data – public/management information and the estimates

The Department's central data areas deal with three main processes; public information provision, operational efficiency information (both covered by the Department's statistics/business intelligence unit) and the budget and estimates process, including the Annual Output Statement. Information needs to be complete and correctly recorded across all schemes for these functions, so standards need to be decided by each central area. This information will be provided through a 'single source' business information layer, since information is regularly required (e.g., monthly, quarterly and annually) on a stable, long term basis to meet their obligations. Automation of some or all of these processes would improve the timeliness and accuracy of the statistics, while freeing up resources for work in other areas.

8 The Services Delivery Modernisation programme, which is the overarching framework for all developments – BOM, DRIM, etc.

9 Already developed in the DRIM project

4. Develop automated reports for 'level 1' data

3.2.2 'Level 2' data – identity data, the customer profile and related scheme data

At this level, metadata and data quality information should be provided by scheme owners (see 'ownership' below) for items included in the customer profile. A standard template will be implemented which clearly highlights potential pitfalls in analysing information for particular schemes (e.g., common use of generic codes for occupation). Over time, data quality should improve for issues identified in the standard template, which should be supported by increased data availability from electronic data capture and data sharing. Data quality issues for the customer profile should filter up from the scheme area templates and would need to be collated and monitored by the data office. This 'bottom up' approach needs to be supported by 'top down' activities in the data office, where standards are decided and implemented in line with the information requirements of DSFA management. Client identity data quality should continue to be monitored by Client Identity Services, with the assistance of the data office.

5. Set up a data office to oversee standards and ownership for scheme and personal data
6. Implement data ownership, standards and metadata across the organisation

3.2.3 'Level 3' data – other scheme level data

A wide range of scheme specific information is collected to support claim processing in addition to the data covered in the first two levels. Scheme owners should record and publish standards in their own areas in respect of these data holdings for the list of agreed quality indicators. Central guidelines on data quality will be produced by the data office, and data audits will be available on request to investigate particular difficulties people are having in analysing their data sources. Data standards reporting should be included in the Memorandum of Understanding for data shared between Revenue and DSFA.

3.3 Data ownership policy

Data ownership needs to be clear for DSFA data holdings in order to implement standards effectively in the organisation. If a difficulty arises in the analysis or interpretation of certain data, there should be someone close to the source who can explain the issue. Also, data standards need to be explained to staff in operational areas and implemented in staff manuals to ensure that they are consistently and universally applied. However, there are some complications arising from the integrated nature of DSFA sources which make this difficult to apply across the board, which are set out below.

3.3.1 Data ownership at point of collection

In most instances, information held on payment systems is collected in the course of claim processing. In this case, data ownership and responsibility for implementation of standards should be in the administrative area where processing is handled. This could be either at administrative scheme level or at, e.g., Principal Officer level to facilitate metadata and data quality reporting. The data office needs to be involved in implementing this approach to ensure that it is properly enforced.

3.3.2 Data ownership at point of use

For the central data areas mentioned in 3.2.1, data ownership is transferred from the primary owner to each area when they collate and publish information. There are also other instances where data ownership may not be clearly attributable to primary owners;

1. For Public Service Identity (PSI) information – this information is updated when new information becomes available, e.g., when a customer changes address. The source of each change to PSI data and the time of update should be recorded. This approach could also be followed for the data in the customer profile

2. Where a data item used across many schemes is updated – e.g., nationality is collected on many scheme forms and stored centrally. It can

be updated at each point of collection, and thus transactions also need to be 'stamped'

3. Some data owners are Departmental owners of data collected by other organisations (e.g., Client Eligibility Services for Revenue data) and separate standards arrangements are needed for these areas.

In these cases, current data owners cannot be expected to have responsibility for past updates, and historical provenance information is required. This will become increasingly important as processing based on shared data becomes more prevalent, as foreseen in the DRIM programme.

3.4 Information infrastructure

The Department's information infrastructure is currently being re-developed through the SDM programme, including the BOM development. This strategy is mainly concerned with the reporting layer of this process and ensuring that data needs identified in chapter 2 are fed into the appropriate SDM activities. The 'Business Information'/reporting approach used at present in DSFA is covered in more detail in this section, and future proposed actions are recommended.

3.4.1 Overview of data analysis in DSFA at present

A wide range of analytical software is currently in use by DSFA staff, based on the results of the 2007 data needs survey. This reflects the wide range of data sources within the Department, and the complex, data driven work of the operational areas of the Department in particular. It also reflects the many purposes for which people use statistics at present, and the individual preferences and experiences of the people who analyse data. Some areas use many packages for data analysis at present. The most common uses were for data matching and case work, though tabulations, forecasting and data quality management were also frequently reported.

Difficulties reported in relation to these software packages included the cost of licenses, access to training and the frequency of updates of extracts from payment systems. Most non-IT areas do not develop their own software, other than through Access and Excel. Respondents tend to rely on extracts provided by Information Systems Division for data analysis, with the Management Information Framework, statistics packages on payment systems and ERIN/EAP[10] reports also being used to support analysis. The majority of respondents reported having a part time resource for statistical analysis in their area, rather than a full time analysis section or access to an external statistical resource.

3.4.2 The DSFA Business Information/Business Intelligence strategy

A 'Business Intelligence' approach should be the basis for getting the best value out of large volumes of customer data. DSFA staff might have difficulty 'at the counter' in analysing masses of customer data, but the key messages from the profile should be flagged to facilitate good interventions. This is already being developed in the Social and Economic Participation Programme, where ESRI is advising the Department on how to use personal data in an operational setting for activation purposes. The traditional DSFA approach is a 'Business Information' model, where analytical tools are used to report on scheme activity over a particular period. In both cases, analysis of the past activity of customers is used to inform decisions for individuals/schemes.

Both approaches require the use of analytical products to identify trends and present information in useable formats. This requires that (i) appropriate products are available and (ii) people are trained how to use them. The principles for selection and deployment of analytical products in DSFA are set out below.

Principle 1 Reduce the number of applications in use to a specified list of products

10 ERIN is the Department's claims management system; EAP is the Employment Action Programme

There is a wide variety of applications in use across the Department at present, and each has different training requirements and varying levels of functionality for analysis. Given the variety of data users, different purposes and capability levels across the Department, it may be difficult to 'straightjacket' all users into using the same product, which requires general principles for a limited set of products to realize most of the benefits set out in the Strategy. Many of the analytical products currently in use around the Department are used for the same purposes. This can be avoided to some extent by having a specified list of products with information available on the strengths and weaknesses of each product. This list should also be the basis for phasing out certain products with limited 'added value' that are being used at present in the organisation, and should be updated in line with Departmental needs and new IT developments. The list should be based on 'user types' which capture most of the analytical activity across the Department – e.g., 'data presenters', 'business/ management reporters' and 'statistics/research users'.

7. Develop a specified list of supported analytical products and user skills assessment based on 'user types'

Principle 2 These products are supported, internally and externally

The specified list of products will overcome some difficulties in IT support in the Department at present. For example, it is difficult to provide technical support to the wide range of available products from within the limited resources of central IT services. This may result in loss of service at critical times, e.g., when new versions of operating systems are implemented. In addition, some of the packages in use are not being updated by the software developers that produced them, which creates support and analytical limitations externally. There should be full technical support from within and outside DSFA for specified products, and training support should also be available.

Principle 3 Identify capabilities, requirements and purposes before deployment

There are a number of factors that need to be considered before deploying reporting software into a business area;

- What existing products are used in the area
- What are the current and future reporting requirements in the business area
- What difficulties are the business area experiencing in getting data at present
- How do these requirements stack up against the specified product list
- How many users are in the area and what are their skills levels

This evaluation should be carried out before a specified product is recommended and implemented in a business area, and basic needs should be met in each initial deployment before addressing more advanced requirements.

Principle 4 Agree formats for data presentation

A standard set of dimensions should be developed to facilitate data analysis across the Department. The formats involved relate to group categories (e.g., age groups, nationalities, income bands, duration bands, etc.) or to table headings and footnotes (e.g., footnotes should reference source and date of extract, time period covered needs to be clear in the heading/header rows, etc.). There are clear advantages to such an approach;

- Data tables would be stable over time for long term trend analysis
- Data tables would be comparable across scheme areas
- The period covered and date of extract would be clearly visible on the table
- It would reduce the scope for confusion for users

- It would be more straightforward for data analysts.

However, it is impossible to predict all table requirements through standard formats, so reporting at a more detailed level (based on the codes and formats held in the DRIM taxonomy) may be required from time to time.

Principle 5 Facilities for data exchange and storage

Data exchange between people who produce and analyse data within the Department is usually via direct provision of data extracts. This reduces the scope for collaboration on joint projects within the Department, as people usually take the extracts across to their own PC's for analysis. Business information systems should be networked to allow people to work together on projects and to ensure knowledge gets transferred and processes are shared between analysts.

This approach needs to be supported by an integrated repository of data for analysis purposes, which should facilitate development of a Department wide approach to data analysis. It would also be more straightforward from a data protection point of view (i.e., a single source is easier to monitor rather than having extracts distributed across many PCs), and would facilitate IS Services in implementing technical standards for data extraction from payment/central systems. Finally, it would reduce the level of ad hoc requests to IS Services for data extracts if extraction systems were embedded in the Department's IT infrastructure.

8. Develop an integrated repository for all analysis purposes

3.4.3 Specialist reporting requirements

Forecasting of future demands is carried out on an ad hoc basis for certain purposes; for example, the Actuarial Review of the Social Insurance Fund is carried out every five years, and a major data gathering operation is needed to support the review.

The Department should use the experience of the Review to build up its own forecasting capabilities, and the data requirements should be 'built in' to analytical systems. As a best practice example, in the Medical Review and Assessment system development, a future requirements model is included to forecast future demands on the service based on population trends and service utilisation information.

3.5 Developing user input

Translating data needs into technical requirements is a complex task, and requires people on the business and IT sides to have some level of common understanding of the requirements and possibilities involved. Some novel approaches to requirements gathering are in progress in the Department at present which should form the basis of future SDM releases. Apart from developing efficient payment systems, there are also wider business issues that should feed into the Department's systems. These issues include the development of Value For Money (VFM)/policy reviews, implementation of the life cycle approach and various sector-specific policy developments, such as the upcoming framework for pensions. A different approach may be required to implement these issues in scheme payment systems, as the gap between policy ideas and practical implementation is much wider than for operational developments.

3.5.1 Payment processing systems

Scheme payment systems need to be designed to efficiently support high volume claims processing. The specific requirements for each of the Department's service areas need to be built into each phase of the BOM development. These specificities need to be identified as fully as possible in the planning phase of each development in order to minimise difficulties in testing and implementation.

For the most recent phase of SDM, dealing with the Widows' Contributory Pension Scheme, the detailed system requirements are identified through a joint workshop (known as a Planning Game) involving

the Business and IT teams. Planning Games capture all the scheme rules and situations that arise in claim processing. Scheme experts and managers from the scheme area and the system developers meet about the specific requirements that need to be built into the system. Other scheme area representatives also attend the meetings when overlapping issues arise. The final system will be designed from the users' perspective, and will use data from related areas to the fullest possible extent to streamline and automate processes. The problem solving approach developed in this area should be the basis for future releases of SDM, and feedback from the testing and implementation phases will further inform the planning process.

3.5.2 Anticipating future requirements and policy developments

Data gathering exercises for policy/VFM reviews tend to be ad hoc at present, and similar issues crop up each time a review is carried out;

- Groups that are identified in surveys cannot be identified in DSFA data (e.g., the 'working poor', low Family Income Supplement take-up, One Parent Family Payment recipients in poverty, etc.)
- Policy effectiveness cannot be measured, e.g. does a scheme support employment objectives or do people end up back on welfare
- What is the previous benefit/work profile of a scheme intake and how is it changing over time
- Do income disregards facilitate employment or create poverty traps
- Practical data issues often arise, such as missing values, data in different formats on different systems, analytical software is not available, etc.

While DSFA has developed good control mechanisms for scheme expenditure and efficiency monitoring programmes, it is a risk to the Department to have difficulty in dealing with these complex policy issues. The customer profile should help to answer these questions in the longer term, but there also needs to be regular feedback from the policy/VFM review process to Information Systems Division (ISD) to deal with requirements as they arise. This feedback arrangement could also involve CSO's participation, as their statistics are heavily used in the policy review process. A data committee should be set up to ensure that long term needs for policy development are built into the Department's systems. The recommended approach is to address specific issues on an ad hoc basis through groups, organised by the Department's senior statistician, with representatives of the policy and operational areas dealing with the issue on hand and standing ISD and CSO representatives. Representation from other Government Departments/ agencies and research bodies could be considered depending on the topic, and meetings would only be held as required. This would ensure that complex policy issues are addressed across the full spectrum of Departmental and other data sources from a practical, problem solving point of view, in line with the needs assessment approach for operational systems set out in 3.5.1.

9. Set up a data committee to build in long term requirements to systems

10. Data supports for the upcoming pensions framework to be developed across Revenue, DSFA and National statistical sources

The aim of this approach is to facilitate 'effectiveness measurement', as set out in the introduction to the Strategy. This can only be done through complementing the unique attributes of DSFA data (coverage, frequency of updates, time series) with the additional information available in National surveys in respect of DSFA customers and the wider population.

3.6 Developing the statistical and analytical capacity of DSFA staff

At the moment a wide range of staff are involved in business information analysis in DSFA. The Department can decide to centralise analysis of this information in one area, or to continue to have

expertise spread across DSFA. The first approach would develop in-depth analytical skills and reduce training/support costs, while the second would ensure that scheme and day to day operational knowledge inform data analysis and vice-versa. The ideal approach is to have central and localised data analysts working together, using products that are appropriate to their skills and requirements. This approach should be based around the 'user types' and specified products described in point 3.4. The role of the central statistics section/data office will be;

- to provide analysis of DSFA data and National statistics to support policy reviews; this should include access to survey microdata
- to develop an intranet 'statistics and research' site to make relevant research available and to facilitate sharing 'best practice' across the Department
- to monitor implementation of standards for the customer profile and to issue guidelines on standards for 'level 3' data
- to provide data audits and analytical advice, where difficulties arise in local areas' data holdings or where local analysts need advice.

For local data analysts, the data owners in each area need to identify;

- the data analysts in their area; more than one should be identified to ensure that knowledge is retained when staff move
- a job specification and skills assessment to allow ISD to recommend the most appropriate product from the specified list
- training needs, from a IT and analytical perspective.

3.7 Participation in the social research community

The 'fourth level' sector has developed enormously in recent years, supported by Government policy (the 2006 'Strategy for Science, Technology and Innovation') and private funding. While the Department will continue to have close links with the CSO and ESRI for data and research purposes, it will also need to develop links with research consortia and universities who are developing data sources that relate to DSFA policy areas. This can be developed through Departmental representation on the steering groups of e.g., the Growing up in Ireland Survey and the TILDA study.

The Department's data sources have been identified by CSO, ESRI and other bodies as a valuable social data resource, though there are significant data protection concerns involved in granting data access to researchers. Joint projects, involving CSO, researchers and the Department's statistics unit, might offer a possible approach to leveraging the skills and capabilities of all involved. In addition, the Department needs to develop in-house analysis of external – mainly CSO – survey microdata to ensure that statistics are fully used within the Department.

The Department also has public information responsibilities in relation to its data, which are largely met through the 'Statistical Information on Social Welfare Services' publication. This publication currently reflects the scheme based reporting used throughout the Department, and any move towards profiling should be accompanied by improvements in the Department's published data in relation to, e.g., transitions between schemes and the labour market and incomes. Apart from publications, the Department should also provide statistical information via new media such as interactive tables.

11. Participate in joint research programmes with other Departments, agencies and 'fourth level' institutions

12. Improve the range of statistics in statistical reports and publish electronically via the Corporate Portal, including 'added value' outputs

Appendix Corporate Information Strategy Action Plan

	Who	When	Contingent on
Goal 1: To meet our international and national requirements for high level policy indicators			
1. Develop socio-economic aspects of longitudinal surveys and liaise with CSO on an ongoing basis to develop new policy relevant statistics	SU 4L CSO	Ongoing	Support from all involved
2. Improved data availability for vulnerable groups, including poverty measurement, barriers to employment	SU, OSI CSO	Ongoing	Support from all involved
Goal 2: To develop DSFA data holdings as a resource supporting policy development, programme evaluation and operational monitoring			
3. Progress the customer profile, including family/ household coding and GIS development	SU,Bus	Mid 2010	CES agreeing a package of work and getting approval to progress it
4. Develop automated reports for 'level 1' data	ISD, SU	Mid 2010	Agreeing standard definitions for level 1 data
5. Set up a data office to oversee standards and ownership for scheme/personal data	SU	Mid 2010	(4) will free up resources
6. Implement data ownership, standards and metadata across the organisation	SU/DO, POs	Mid 2010 onwards	Business support
7. Develop a specified list of supported analytical products and user skills assessment based on 'user types'	SU/DO, ISD	End 2009	Business support
8. Develop an integrated repository for all analysis purposes	ISD	Mid 2010 onwards	Developments under action (6)
9. Set up a data committee to build in long term requirements to systems	SU,Bus,ISD	Q3 2009	Business support
Goal 3: To ensure that our data sources facilitate national developments in social and equality statistics			
10. Data supports for the upcoming pensions framework to be developed across Revenue, DSFA, Pensions Board and national statistical sources, including PPS Number integration	DC	Q3 2009	Business support and framework being in place
Goal 4 To meet the wider public information needs regarding our schemes			
11. Participate in joint research programmes with other Departments, agencies and 'fourth level' institutions	SU,4L,CSO	Ongoing	Support from all involved
12. Improve the range of statistics in policy and operational statistical reports and publish electronically via the Corporate Portal, including 'added value' outputs (interactive tables, etc.)	SU	Ongoing	(4) and ISD support

SU Statistics Unit
CSO Central Statistics Office
DO Data Office
Bus Business areas involved in policy developments (e.g., pensions for item 10)
4L Fourth level, including ESRI
ISD Information Systems Division
POs Principal Officers/data owners
DC Data committee
CES Client Eligibility Services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