THE INFORMATION SECTOR AND ISIC

Introduction

Given the growing importance of the information sector, the UK's Department of Trade and Industry commissioned a study from the UK Economic and Research Council's Programme on Information and Communication Technologies (PICT). The study's aim was to advise how best to adopt the draft revision of service sector elements of the International Standard Industrial Classification (ISIC) to reflect the likely future trends in the information industries. In forming their advice the PICT team interviewed a number of leading UK companies (see list at Annex 1).

The Information Sector

The PICT definition of the information sector in terms of existing classifications is micro-electronics; computer hardware, software and services; telecommunication equipments and servicesl the mass media of radio, television, film and press, book etc publishing; electronic database and information services; print and postal services; education and research and development. To make sense of the information industry as a coherent units, the PICT team leant towards the French "filiere" approach in which the industry is structured as:

1)	Conception	-	Informational raw materials
2)	Editing	-	The working up of this material into a saleable product or service.
3)	Production	-	Translation of product or service into a technical form.
4)	Programming	-	Creation of catalogues or repetoires (eg TV schedules).
5)	Distribution/Transmissions		
6)	Reception		

Recommendations

Annex 2 shows the recommendations of the PICT study. Both the terms of reference given to the PICT team and the advice they received from the companies they visited indicated that continuity of statistics and their classifications were important. In the main therefore, the team concerned themselves with recommendations for a further breakdown in the draft UN classifications and have not proposed a major reconstruction of the classification to group together an "information" sector. Some proposals for minor restructuring are included.

While the PICT team were asked to restrict their comments to the service sector, the importance of the computer to the information revolution has meant they felt compelled, even at this late date, to ask that the computer manufacturing industry should be separately identified from other office equipment **(Recommendation 1)**. **Recommendation 2** suggests that the expected rapid growth of retail trading of IT based computer and telecommunications hardware and software makes it desirable for the residual retailing category to be further broken down separately to identify such activity.

While the PICT team were not entirely happy with the placing of the telecommunications industry within the classification, their main problem was the lack of any breakdown in class 7530 between basic telecommunication services and the fast growing newer areas. They suggest the separate identification of VANS and other enhanced services from basic telephone service **(Recommendation 3)**. The same problem applies to class 8502, Software supply. In the PICT team's view distinct activities are emerging in this sector covering for example the production and supply of packaged software as opposed to "bespoke" software, (ie software tailored substantially and specifically to meet an individual customer's requirements). They suggest that some disaggregation is needed and the UK propose that shown in **Recommendation 4.**

The PICT team welcomed the Japanese proposals for the identification in separate classes of market research etc and business research **(Recommendation 5)** and a breakdown of research and development between natural and social sciences **(Recommendation 6)**. The advertising industry was another key element of the information revolution where more detail now seemed desirable. The team suggested a breakdown of the group separately to identify public relations and direct mail operations from other advertising services. This would involve the move of public relations from 8913 and direct mail from 89[illegible] where it is a component of CPC 89795. In both cases, these are new activities closely bound up with the advertising industry and their current allocation is no longer appropriate **(Recommendation 7)**.

Recommendation 8 proposes that commercial IT training is now a sufficiently large and enduring activity to warrant separate identification in division 93. **Recommendations 9 and 10** propose that the production and distribution elements of film and tv need to be separated. The present classification reflects a pre-information revolution structure of the two industries which the emergence of independent tv and film producers is now changing. The team suggest that this trend is likely to accelerate and the classification needs to acknowledge it sooner rather than later.

Recommendation 11 is perhaps the most controversial. While welcoming the move of publishing to the service sector, the PICT team were dismayed that it had not been accompanied by the elements of the printing industry not related to publishing. The two industries are closely linked and are both important elements of the information sector. The team propose they should be kept together. The team were also somewhat uncertain about where best to place databank activities which combine aspects of telecommunication and computing. The suggestion adopted here is to classify them as electronic publishing (especially in view of the development of CD-rom) and place them alongside conventional publishing.

Longer term considerations

It must be recognised that further disaggregation of the existing ISIC represents only one step towards the provision of improved statistics on the information services or the information economy overall. In addition, an international consensus should be sought for the evaluation and development of the most practical approach to a satellite account (or other measures) for the more detailed and coherent reporting of economic activities relating to the various dimensions of the overall information sector in the future. There is a complex set of fundamental conceptual and methodological as well as practical and operational issues to be resolved here in order to provide better coverage of the information economy in national and international accounting statistics. For example, at present there are many unresolved problems in defining what actually constitutes national output-/production and trade in the increasingly important field of information services.

There is also a pressing need to develop a standard international set of economic concepts and categories in this field (including a precise commodity listing) so that comparable data can be generated to inform national and international policy making; at present there exists a plethora of different and inconsistent terms and definitions underlying the available public and private sector data in the IT industries and services fields. An economist in a computer firm pointed to the analogy with technical standards during an interview, and stressed that his firm desired standard terminology and concepts in the economic arena as much as in the technical one:

> "if standard categories are not agreed through an international forum such as the ISIC, then a <u>de facto</u> standard will be imposed by the dominant actor and other statistics providers will simply have to follow suit, although the imposed standard may be far from optimal for their own situation".

The depth and range of the potential implications of the new information and communication technologies on national economies and upon the global economy serve to underline the urgent need for a more intensive examination of the long-range implications for both national and international standardised industrial classifications. It is proposed that sofware and telecommunication-based network services should be priority areas for additional research and attention for improved statistics. Both are areas of substantial growth and pervasive impact across all sectors of the economy in the future. They involve special problems of conceptualisation, definition, measurement and recording for which an early resolution would yield long term benefits.

The growth in the importance and variety of tradeable information industries and services nationally and internationally is a matter of increasing concern to policy makers in both developed and less developed economies. For example, new IT based services have been at the core of the major contested issues in the current GATT round of negotiations on services. The inadequacy of current industrial and trade statistics relating to these services has also been highlighted by these negotiations. These are strategic policy areas with major stakes at issue but as yet there is little by way of coherent statistics or analysis to guide policy makers on the benefits and costs of alternative ajustments to policies.

Thus it is recommended that the current round of ISIC meetings be used for the promotion of the necessary fundamental research and a more intensive ongoing examination of these issues. Improved statistics on the information economy will depend upon collaborative work between statisticians and academic and other researchers concerned with these developments at both the national and international scale.

ANNEX 1

LIST OF COMPANIES APPROACHED BY PICT TEAM

ICL

British Telecom PLC

Pergamon Infoline

Logica PLC

Reuters Ltd

Independent Broadcasting Authority

Midland Bank PLC

The Post Office

IBM United Kingdom Ltd

The British Broadcasting Corporation

The Independent Television Companies Association

ANNEX 2

PROPOSED AMENDMENTS TO DRAFT ISIC REVISION

	UN DRAFT	RECOMMENDED CHANGE
1)	2330	Breakdown to
		2331 Manufacture of computing machinery
		2332 Manufacture of other office and accounting machinery.
2)	6339	Breakdown to
		6335 Retail sale of IT goods (eg micro computer hardware and software and telecommunication equipment).
		6339 Other retail sale in specialised stores.
3)	7530	Breakdown to
		7531 Basic telecommunications services
		7532 VANS/enhanced services
		7539 Other telecommunictions services
4)	8502	Breakdown this heading to
		8502A Software packages
		8502B Bespoke software
		8520C Other software services
5)	891	Add the following headings to Group 891
		8914 Market research and public opinion polling.
		8915 Business research

PROPOSED AMENDMENTS TO DRAFT ISIC REVISION

	UN DRAFT	RECOMMENDED CHANGE
6)	8930	Breakdown to
		8931 Research and Development on natural sciences.
		8932 Research and Development on social sciences and humanities.
7)	8940	Breakdown into
		8941 Public relations including sports and arts sponsorship.
		8942 Direct mail advertising
		8949 Other advertising services
8)	934	Add the following class to this group
		9340 Commercial IT training
9)	9611	Divide this class into
		9611A Motion picture and video production
		9611B Motion picture and video distribution
10)	9613	Divide this class into
		9613A Radio and television programme production
		9613B Other radio and television activities including transmission and broadcasting.
11)	9620	Consider expanding the scope of this group as follows
		9621 Publishing activities
		9222 Printing not connected to publishing
		9623 Datbank activities