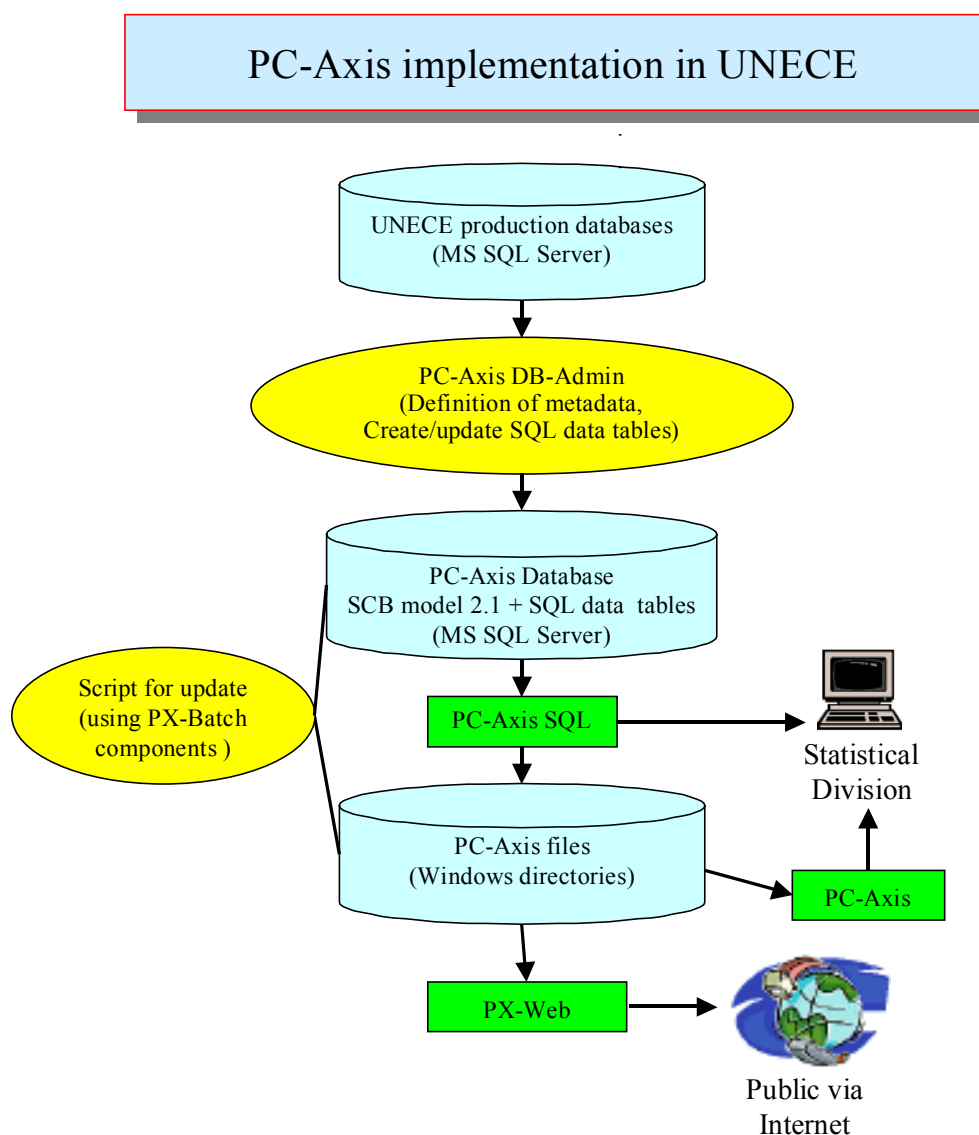




2007 Report on the Use of PC-Axis in UNECE

Introduction

The Statistical Division of the United Nations Economic Commission for Europe (UNECE) has used the PC-Axis family of products to disseminate statistical data via the Internet since February 2005 (see www.unece.org/stats/data). The PC-Axis tools form the “front-end” of a system of SQL databases used in the statistical production process.

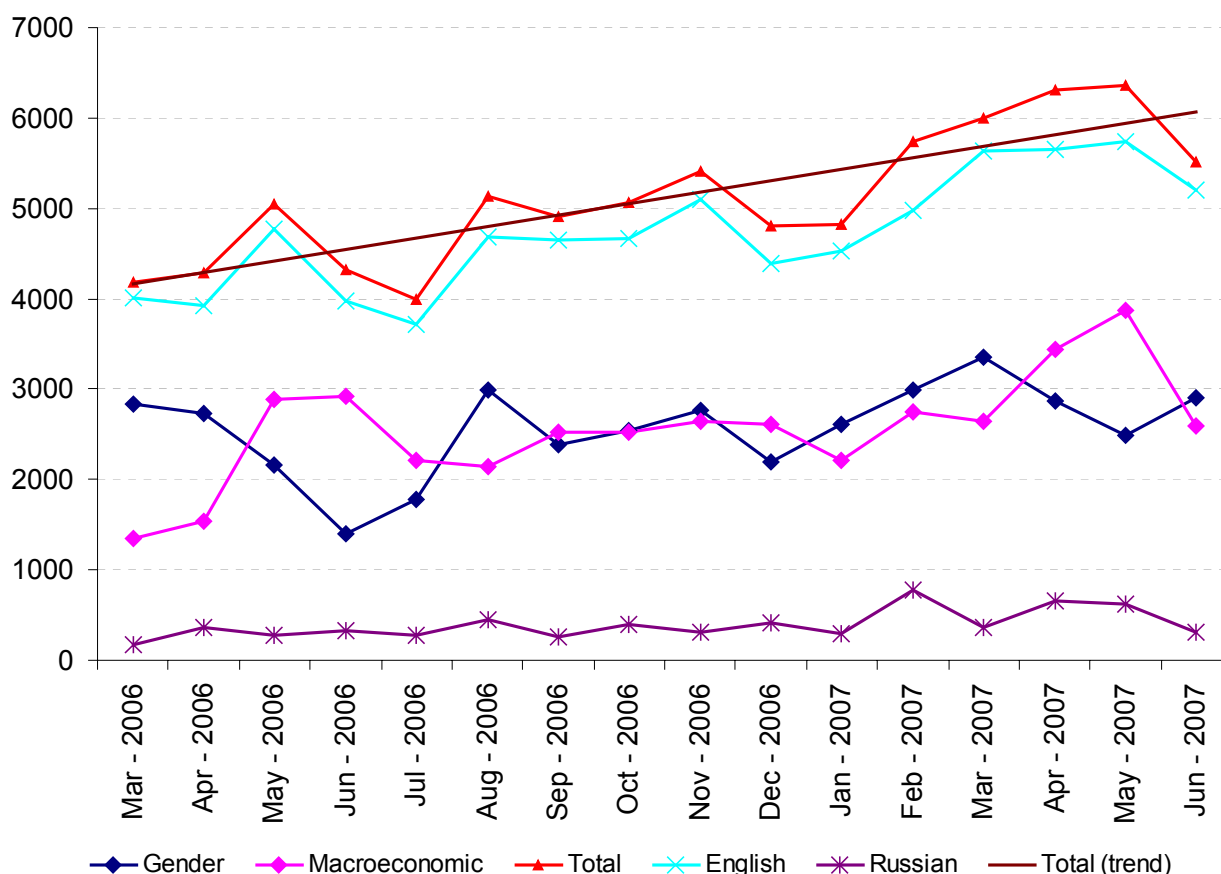


As shown in the diagram above, the UNECE PC-Axis solution includes:

- An interface between the UNECE production databases and the SCB Meta Database (macro) making use of the PC-Axis DB-Admin application;
- The use of PX-Batch components to generate the PC-Axis files that are prepared for dissemination;
- The use of PC-Axis SQL for the checking of data cubes by data producers and for internal dissemination
- The use of PX-Web for public dissemination.

The public data set currently includes 86 data cubes split between two main domains, macro-economic statistics (32 cubes) and gender statistics (54 cubes). Further cubes will be added over the coming year. The public interface is currently available in two languages, English and Russian. The growing user base for UNECE data is clearly shown in the following graph, which measures the monthly number of data downloads by various categories.

**ECE Statistical Database - Internet Usage
 Data Downloads per Month**



The remainder of this note reviews work carried out since last year's meeting on both data content and system development. It discusses a few problems we faced and presents some suggestions for priorities in the future development of PC-Axis products.

I. Work done since last year

An external review of the UNECE public statistical databases was carried out in Autumn 2006. The assessment team strongly recommended that work on the economic and gender databases continue and suggested several improvements concerning database functionality, data and metadata quality, and the dissemination interface. Some of these have already been implemented, whilst others are incorporated in the 2007-08 quality improvement programme.

One of the main improvements so far has been a re-design of our web interface for data (www.unece.org/stats/data), where we have used recommendations from the review, other user feedback and the results of usability testing, to make the web site more user friendly. Further work is planned, notably to improve the user registration functions.

A number of enhancements have been made to PC-Axis DB-Admin, the tool we have developed to manage the metadata within the metadata model. These include improved text editing features for footnotes in English and Russian, information on where footnotes are linked, a graphical query builder for developing cubes without having to write SQL code, and an alphabetical sort function for values within value pools.

Following user feedback, we have considerably simplified the way in which we present data for countries and regions, moving away from the previous hierarchical model, which required a lot of effort to maintain. We now present data for individual countries, and six regional groupings, treating all as values, and performing aggregations within our production databases.

An on-going problem for us is the alphabetical sorting of country specific footnotes. Footnotes are currently presented in footnote number order, with footnote numbers being allocated automatically and sequentially, thus in a list of country specific footnotes, a new footnote for Albania would appear at the bottom of the list. Several users have commented that they find this confusing. Our interim solution is to create large numbers of footnotes as "place-holders" so that each country has a range of footnote numbers allocated to it. When a new footnote is needed, the text is simply typed into one of the placeholders in the appropriate country range. This allows footnotes for countries to appear alphabetically for the main dissemination language (English), but does not solve the problem for other languages (e.g. Russian), where the alphabetical order is not the same.

During July 2007 we migrated our statistical databases to servers hosted by the British company Savvis. We also wanted to upgrade the underlying operating system from SQL Server 2000 to SQL Server 2005, but hit problems with bulk deletes taking many times longer than previously (over eight hours compared to less than two minutes). We have therefore decided to stay with SQL Server 2000 until these problems can be resolved.

II. Future developments

In the context of our new quality improvement programme, and to be able to better respond to user needs, we plan to launch a user-needs survey in September / October 2007. This survey will be aimed at users of the on-line interface to the statistical database, and will cover data quality as well as the user-friendliness of the web site. We will use the results of this survey to further improve how we communicate with our data users.

We are currently using the 2004 version of PC-Axis with version 2.0 of the metadata model. We intend to upgrade to the latest versions before the end of 2007, but this might be delayed until early 2008 due to programmer resource restrictions.

One area where we see significant scope for improvement is in the graphical representation of data presented to users. We currently use PX-Graph, and plan to introduce PX-Map2. We have been working with the data visualization company Swivel (see <http://www.swivel.com/users/show/1005968>) to try to find ways to better present our data, and plan to implement the results of this in 2008.

Our production databases are now several years old, and are not operating as efficiently as they could. When we have completed the upgrade to SQL Server 2005, we plan to re-engineer these databases using the latest programming methods and techniques.

An increasing number of national and international statistical agencies are developing facilities to transmit and receive data in the SDMX format. As these include several of our data suppliers and customers, we need to find a way to read and produce files in this format.

III. Proposal for future developments

- Sort codes for footnotes – As mentioned above, we have a problem with the lack of a sort facility for country-specific footnotes. Ideally we would like to see language-specific sort codes added for footnotes so that they will appear in the correct order regardless of language.
- SDMX outputs – We would like to be able to export data from PC-Axis (including via PX-Web) in SDMX format.
- Web version of PX-Map2 – We think PX-Map2 is a very useful and powerful data visualization tool, and would like to be able to make it available to our web site users.
- Hide blank dimensions - When data are extracted from a multi-dimensional cube, all dimensions are present in the output whether they are used or not. We would like at least an option only to display dimensions for which there are two or more values present in the data extracted. This would make smaller tables more user friendly.

- Flags in data tables to indicate the presence of footnotes – At present, data cells for which there are footnotes are not flagged in output tables, so users have to read all of the footnotes below the table to see if any are relevant. A flag at the level of the cell (as in Excel and in several on-line databases, e.g. Eurostat) would make users more likely to read the relevant footnotes, and help to improve their understanding of the data. The flag should, in some way, link directly to the relevant footnote(s).

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