

Organisation of statistical information systems

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Various factors during the last 20 years encouraged the often autonomous and sometimes anarchistic development of sectoral statistical information systems within certain statistical institutes: provision to the users of PCs and user-friendly software packages which make it possible to develop applications locally, decentralisation of the production of statistics, necessity to react rapidly, etc.

However constraints on the consistency of information, on economy in computer management, on transparency and on traceability force us to reorganise in a more effective way the sectoral information systems developed in the various departments of the statistical organisations.

The reorganisation, to be successful, has to propose to the producers of data, solutions which give services at least comparable with those of the initial systems; to management, economies of scale and transparency that the purely decentralised approach did not give; and to the end user, increased user-friendliness. It has to serve the objectives of the institution and to fit its structure to be efficient.

The manager responsible for such a reorganisation lacks adequate tools or theory. Various alternatives exist:

- data driven approaches;
- model based or functional approaches;
- approaches driven by the software and competences which are available;
- approach based on the organisation of the statistical institute;

or hybrid solutions, as one can observe in the majority of cases.

Unfortunately, few theoretical elements appear to exist to model the existing situation, to measure its complexity, to define a targeted structure, to formalise the problems of integrating, finding common denominators and linking the systems in place. The institution is confronted with a population of complex objects - the information systems - with human, technological and procedural dimensions (interfaces, use of common tools, shared management, etc.) that have to be rationalised. Some papers on the treatment of symbolic objects (statistics) or architectural styles (software engineering) can provide formalisation elements which could help to provide a theoretical basis for the problem.

The contribution will seek to present in more detail the various aspects of the problem of reorganisation of the information systems, will propose some concepts and typologies and will illustrate them from an experiment in progress in Eurostat, the Statistical Office of the European Communities. An architecture will be designed, which, while fitting Eurostat's sectorial organisational structure, will make certain data available across domains and use a modular approach for certain functions. The problems of comparability between the target structure and the current situation will be approached as well as the problems arising from migration.

RESUME

Différents facteurs au cours des 20 dernières années ont favorisé le développement souvent autonome et quelquefois anarchique de systèmes d'information statistique sectoriels au sein de certains instituts de statistique. Des contraintes de cohérence de l'information, d'économie dans la gestion informatique, de transparence et de traçabilité imposent cependant de réorganiser de manière plus efficace les systèmes d'information sectoriels développés dans les différentes unités des organisations statistiques. Le responsable informatique confronté à cette réorganisation est étrangement démuni. Différentes alternatives existent : des solutions qui structurent l'ensemble du système d'information de l'institution à partir essentiellement du type de données à traiter, d'un modèle fonctionnel et normatif du traitement des données statistiques, des logiciels et des compétences disponibles, du mode d'organisation de l'institut statistique, ou des solutions hybrides, comme on en observe dans la plupart des cas. Malheureusement, peu d'éléments théoriques paraissent exister pour modéliser la situation existante, mesurer sa complexité, définir une structure cible, formaliser la problématique d'intégration, factorisation, articulation des systèmes en place. L'exposé cherchera à présenter plus en détail les différents aspects du problème de réorganisation des systèmes d'information, proposera quelques concepts et typologies et les illustrera à partir d'une expérience en cours à Eurostat, l'office statistique des Communautés européennes.