INTERACTIVE AND GRAPHICAL MANAGEMENT SYSTEM AT THE MARAMUREŞ COUNTY COUNCIL

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The Maramures County Council (Romania) implements a computerized graphic system for assisted public management. A performing public administration is a key issue for the present local and regional development. Having an interactive graphic interface based on the county geographical map, the SIGMA2 system act as a scoreboard for the management of the County Council, as well as an integrator of different software modules that consolidate local administration data. Among its results are the automatization of different financial operations and the provision of informational support for managerial analyses and decision making.

Keywords: assisted management, scoreboard, computer system, county council, Maramureş

Introduction

The concept „Interactive and Graphical Management System at the Maramureş County Council" (SIGMA2) aims to assist the management in public administration in the analysis and decision-making regarding resource management, expenditure, and relations with partners and citizens.
SIGMA2 has in center an interactive interface based on graphical representation of the district composed of elements of interest (roads, settlements, investment objectives, elements of road safety, etc.). Connections are based on Web services (XML) functional in Intranet and Internet.
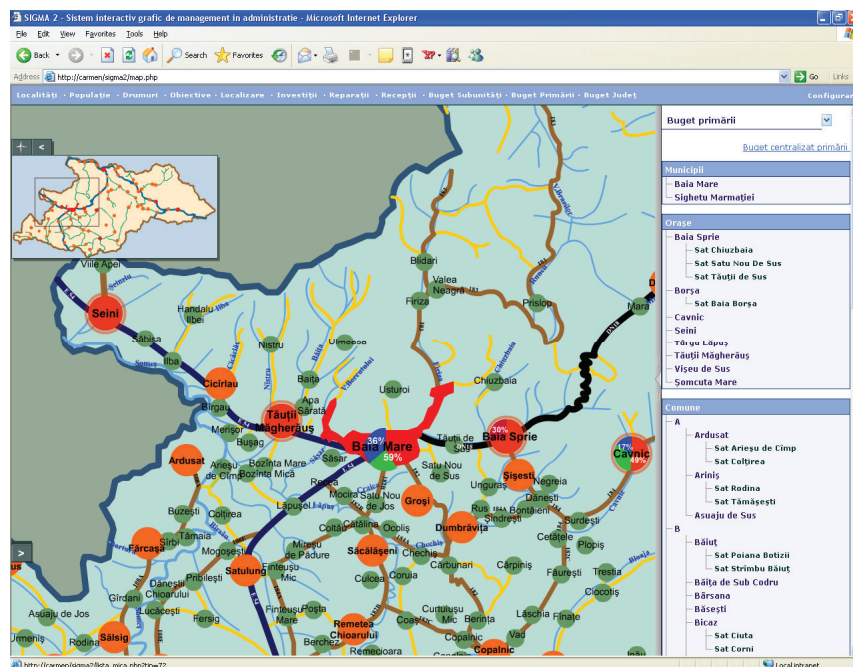

Fig. 1 The main window of the SIGMA system

The system is designed in a flexible and scalable architecture and structures a solid framework for computerization of activities of management and tracking specific to County Councils.

SIGMA2 is also a scoreboard for the Maramures County Council management and an integration solution for specialized software modules and of consolidation at the county level of data managed by local authorities.

Research Methods

1. The specialized modules on which SIGMA2 is based are:
1.1. eCUB Complete integrated accounting system for budgetary units
1.2. INVEST records of investment and maintenance and rehabilitation works that involves public funds.
1.3. SPASGEN tracking and management of social benefits (complementary and single-parent family allowance, minimum guaranteed income, local transport, canteen).

2. SIGMA2 - central panel
2.1. Login
Access to system facilities is allowed only after the authentication based on user-password.
Granting of access rights is done by a system administrator. It has provided a module that allows management:
a. Users
b. User groups
c. users belonging to groups
d. relations between groups (inheritance rights)
e. rights of interaction with data: view, add / change, delete
Menu options vary depending on the rights granted to the user.
2.2. Map
It is the core element of the system and is composed of interactive graphical objects that facilitate access to information.
The system allows navigation on the map using the active areas at the edge of the window or arrows on the keyboard, i.e. increasing - decreasing scale (zoom) by buttons on the toolbar of the map or the + / - on the keyboard. Positioning visible area of the map can be tracked / specified on the miniature representation of the map.
Hiding / showing the map is done with the gray vertical bar marked with an arrow.
Active elements of the map are:
a. road - allow selecting a road (European, national, county) for which further information will be provided:
¬ locations list, ordered by location on the road (at km.);
¬ road investments - work positioning, cost and security;
¬ road signs, indicators - positioning, type;
¬ objectives of economic, social and cultural interest;
b. locality - used for displaying its data:
¬ budget, budget execution (income and expenditure);
¬ population;
¬ objectives of economic, social and cultural interest;
c. other objectives - completely configurable at system implementation or after.
Road structure and spatial position of the localities are fixed based on county map digitizing, other graphics (objectives, institutions, road signs and works) may be positioned dynamically from SIGMA.
2.3. Main Menu
Is displayed at the top of the window and allows entry into areas of system configuration, consultation - detailed data update, visualization of advanced statistics.

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Access to menu options is limited by the rights granted to the user, depending on the competences of the user's group. Connections to restricted functional areas will not be shown to simplify the interface.
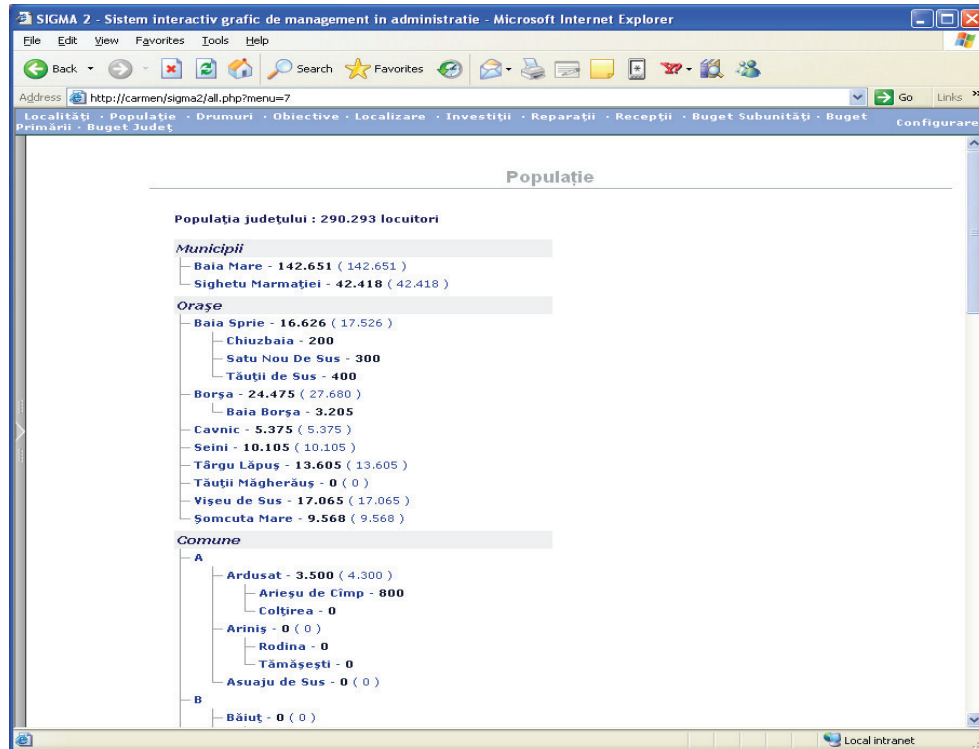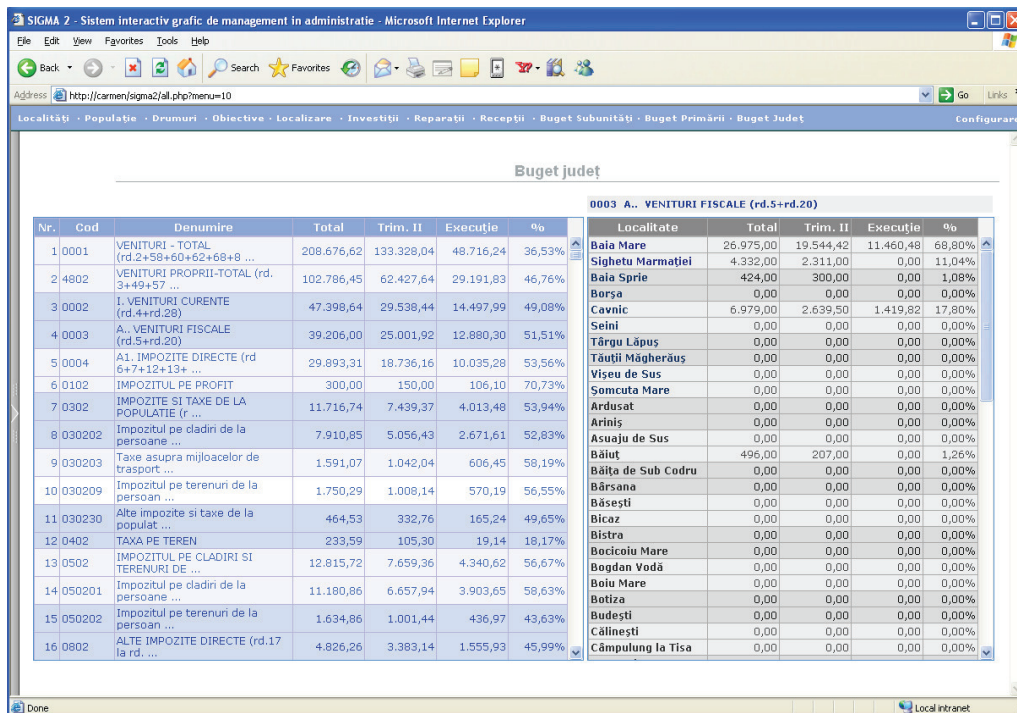

Fig. 2 Main Menu

Fig. 3 Budgets

2.4. Implementation of requirements of systems, hardware and software applications or modules, specific to un-computerized departments

For the results of implementation of integrated computer system to be conclusive, it is necessary that all activities in a county council to register the relevant data electronically.

The current project will cover areas:
- Budget Management
- Financial and accounting management
- Management of inventory items and fixed assets
- Inventory and supply management
- Investment Management
- Financial analysis
- Human resources (integration of existing solutions)
- Building permits (integration of existing solutions)

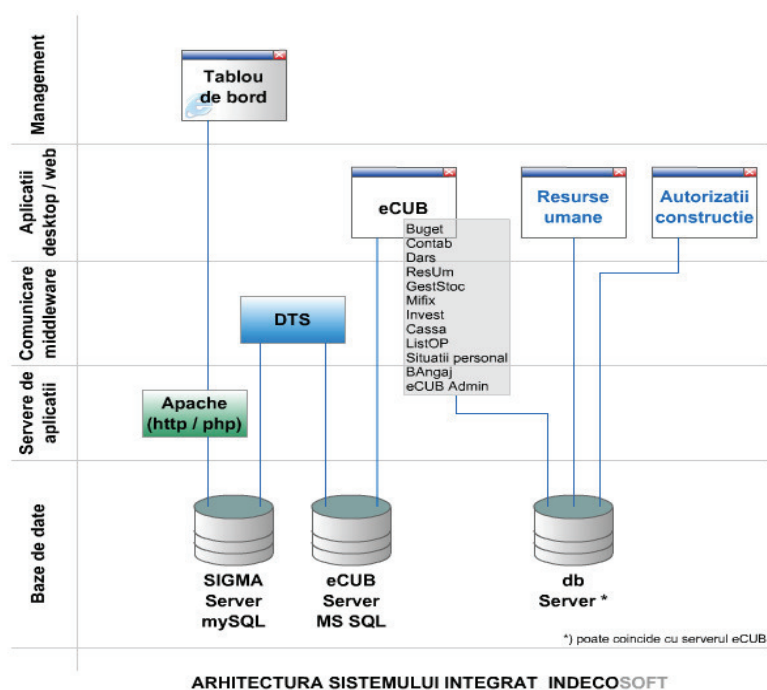The system architecture is shown in the following figure.

Fig. 4 System Architecture

a. Coherentization of IT components in covered areas
– Standardization and unity maintaining of common data, by bringing together similar databases, respectively identical replication
- Creation of data maintenance and management tools
- Delineation of responsibilities to these data
- Establishing standards for use and handling of common information
b. Implementation of high-level capabilities
- Implementation, configuration and launching of the manager scoreboard
- Installing access components for councilors
- Implementation of solutions for publishing information on the Internet, with open access or secured (authenticated) by category of information
- Installation of integrated computer system management and monitoring components

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c. Awareness of the need and usefulness of the system and user empowerment
- Training of system controllers and administrator
- Assessing the impact of implementation, opportunities of value continuing and increase
The project is expected to be implemented over 2 months since launch. The solution is adaptable and scalable and can be replicated at the county council subunits, with capabilities of information consolidation at the central level.

Estiamated results of the project

The integrated computer system carries out the automatization of financial transactions and will provide informational support for analysis and decision making. Data management will thus be more effective, departments will be able to follow more easily and accurately specific situations and be able to provide synthetic and detailed reports more complex and in less time. Harmonizing the institution activities and use of the management software tools will make public administrations more efficient.

Result:	Method of verification / assessment:
County Council informatization by implementing software modules according to operating specifications and needs.	Database and applications servers are installed and configured according to the architecture. Client software modules are installed on all workstations according to the diagram, are functional and have passed the quality validation tests, communication between them goes well, response times are acceptable, it can work online and competitor.
Securing access to information.	Users can access the system solely based on user / password account type, the rights will be limited by the job competency. Interactions with the system will be monitored, with the possibility of obtaining reports of "who, when and with what data they interact" type.
Data security.	Backup mechanisms are tested and validated. The data can be restored based on backup files. Transactions are persistent.
Decision support.	The scoreboard-type financial analysis module provides online, in a clear manner, valid and actual information that can be support to decisions.

Conclusions

Success of an organization depends on its people. Increasing emphasis given to the training side of organization management comes from the perception of the strong conditioning between quality human resources available, the stock of knowledge, skills and experience on the one hand, and obtained efficiency on the other hand.

All this is not possible without a strong economic informational system - a complex of people, machines, programs and practical work, a gear that collect data, transform them into information they store, process and transmit selectively to managers at all levels.

Informational system must assume a part of the managers' work, namely data and information processing, results analysis, developing variants of problems solving, and providing permanent connections between the manager system and the managed system. Investments are very large, but by introducing automatic data processing (ADP) the rate of generation of documents increases and information reaches in good time to the managers that requested it. Information obtained on time helps managers to adopt and implement the right decisions, and the profit (the result of effort) contributes to the growth and development of the organization.

Effects of its introduction and use may be: technical, embodied in reducing the workload and time of data processing, freeing personal from routine work, etc., or may be economic, caused directly by the difference between operating costs of old system and the new system, expressing increased productivity in data collecting, processing and transmission or, indirectly, from the overall results of the business given by the increased productivity in management and execution processes.

In conclusion, by introducing the computer system in the public administration, the corruption is greatly reduced by eliminating the taxpayer's physical contact with civil servants, documents are tamperproof, and processing accuracy can not be put in doubt.

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