

ADVANTAGES OF AN INFORMATION SYSTEM MONITORING AND STOCKS AGRICULTURAL PRICES. CASE STUDY – ROSIM

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Abstract

Abstract agricultural policy in our country is based on information dispersed, especially because there is no centralized monitoring system, who to provide reliable information, while the agricultural and food market is experiencing a general feeling of instability - basically, it consists of channels and a dysfunctional organizational structure, based on communication systems do not operate in real time.. An integrated on-line monitoring of prices of agricultural products is of great interest due to the integration of computer technology (communications and agricultural sciences, based on specific concepts: client / server architecture, the integrated platform software, decision support, database distributed relational distance communication through the web, object oriented programming, mathematical modeling, interactivity etc.).

Key words: agricultural, information system, market, monitoring, prices

INTRODUCTION

It is known that the Internet has revolutionized many sectors of the economy and restructured and provided new targets of their activity, generating opportunities and challenges for existing businesses and start-ups that have direct relationships with customers. In supply chain intermediaries were new, while others have been replaced. Novel business models have emerged which showed how organizations use technology to achieve a competitive advantage and an income to match.

An ecommerce platform that is based on a market information system can become a support level of individual decision makers that are on the food chain product, especially agricultural policy needs to adapt to the distribution and changes of demand and supply market. Such a structure can integrated people and IT tools aiming at collecting, sorting, analysis, evaluation and distribution of accurate and real-time information to support decision makers in their planning activities, implementation and control marketing[1].

New models must solve the problem of client satisfaction for the achievement value and product quality. Integrated Monitoring System (ROSIM) pursue an integrated software, which provides information on the state of food prices in markets, in each county and then to ensure the transmission of information to a national administrator of the markets. Basically, data collection and processing is done in agricultural markets in order to report in real time and provide quick and reliable solutions regarding the prices of agricultural products.

MATERIALS AND METHODS

The system is an application of this type database accessible online with a web portal to support the collection and dissemination of data, based on concepts, methods and modern solutions.

ROSIM has distributed databases (local, regional and central) that provides collection, storage, processing and transmission distance, the structures and specialized areas designed as a virtual space where they can be accessed

in the shortest time in the best conditions. For the project we considered ROSIM

software solution based on LAMP (Linux-Apache-MySQL-PHP) platform is working best option, especially due to two key factors, namely: the combination has been demonstrated on many popular websites and the technology is free to use[3]. These factors are those due to which many people have chosen this combination to launch website production base. LAMP system have full control over both their own web server, and remote access, which enables easy administration of Linux server from any location[3],[4]. In addition, Linux provides the ability to run (execute) the services required to run without Graphical User Interface and therefore it uses fewer system resources - resources that could be used to speed up the delivery process website audience[2].

As software and hardware requirements for running ROSIM, software configuration runs on LAMP (Linux-Apache-MySQL-PHP) or similar, and the configuration WAMP (Windows-Apache-MySQL-PHP)[5],[6].

Hardware and programming environments software system are included, minimal, on hierarchical levels:

1. Minimum requirements for the central

- Central computer system contains the central database with replicas of each local database.

2. Minimum requirements for the regional (county)

- Territorial systems have databases that can contain, finally, with the development of market-wide integrated system, each local database replicas;

3. Minimum requirements for local, integrated system for development by including, in terms of information and food markets

- Local markets systems that transmit data collected in the first phase, fax or other means of transmission, the development, the system will have PCs with databases, placed in food markets that will ensure data transmission Internet.

RESULTS AND DISCUSSIONS

Features a ROSIM

Integrated system to monitor stocks and market prices of agricultural products

(ROSIM) is a collaborative process management for marketing agricultural products market to provide an overview on supply, demand, distribution channels and price stocks of agricultural products. With this system you can better manage the market, offering the opportunity to request orientation, can make decisions based on accurate information. Thus, it is a decision support in development:

- orientation strategies and support measures to support competitiveness;
- marketing plans farmer level;
- assessments consumption of agricultural products.

Integrated management facilitates decision making at different levels (strategic, tactical and operational) for the purpose of taking effective decisions that lead to optimization and stabilization activities on agricultural pricing. The decision to form specific higher information processing, aims to establish actions or commands on the operation or modification of the prices of agricultural markets and its monitoring.

ROSIM was founded in order to:

- general information mainstream farmer level,
- provide a viable mechanism for storing information about: prices, stocks and networks marketing of agricultural products market.

ROSIM is made and used in an architecture of client / server distributed relational database, in the first instance county level (agricultural directions, prefectures, etc..) And central level (ministries and central agencies etc.). As basic functions it allows acquisition, storage, processing and transmission of data for monitoring agricultural prices, remotely through the Internet network.

The integrated, functional and managerial levels used gives a new dimension to quality management by creating a framework for optimal coordination and monitoring of agricultural prices. The integrated system comprises the components (subsystems) and functional links between them, all activities which contribute to the process of price monitoring.

Database structure

Integrated interface is shared working environment, using in this context - as a way of cooperation - elements such as shared databases as data integrator, intranet / internet, hypertext, e-mail, videoconferencing, chat, shared applications in real time, working synchronously (at the same time with activities such as video conferencing etc.) and asynchronous work (coordinating action within a period of time such as through e-mail).

Databases satisfy the information needs and decision regarding the monitoring of agricultural prices, data are recorded, updated and searched:

- type
- variety
- price
- quantity
- place
- statistical data
- economic and financial data etc.

Computer applications at the local level will replicate data at the local level (county) which - in turn - will replicate data at central level.

System generates two types of applications:

- *applications for the management of distributed databases*, local and central, which function definition, consulting and querying databases, entry, modification and deletion of data as well as data transmission procedures for updating the central server;
- *monitoring applications specific agricultural prices*, based on mathematical models and algorithms that reflect the phenomena of markets for agricultural prices, the calculation procedure of specific indicators.

Territorial levels and central processing queries and consultations include the calculation of synthetic indicators and statistics, price forecasts, studies on data archive, retrieve data from local servers, dissemination of data on web sites, located throughout the country (county).

- Making convenient multiple applications through multitasking;

- Providing a high degree of security against both accidental hardware failures, software errors, and unauthorized intrusion;
- Ensuring accessible interfaces for system engineers, network administrator and database administrator;
- Providing software support for database management;
- Cooperation and communication network components.

The operating system provides functions of management software applications (input, modification, query, fitrare, sequencing etc.).

Integrated on-line monitoring of agricultural prices (ROSIM) developed and used in an architecture of client/server distributed relational database, initially, at the county level (agricultural directions, prefectures etc.) and central level (ministries and central agencies etc.), purchase, store, process and transmit data for monitoring agricultural prices, remotely over the Internet. The system is based on working with the web. Internet operates under client/server (browsing a user accesses data from a web server via a client application, web browser) leading to DBMS-R's (Database System Management-Relational) involvement in web applications.

Integrated monitoring system consists of distributed databases in different points of the territory (cities, districts) to store data for monitoring agricultural prices.

Ways to use the system

The hierarchical structure of the integrated system has organizational levels of decision processes aimed at monitoring agricultural prices. System users are decision makers place on different levels of expertise, professionals who need several variants of decision analysis and students are trained in matters of agriculture.

The database is multi-modular is structured as follows (fig. 1):

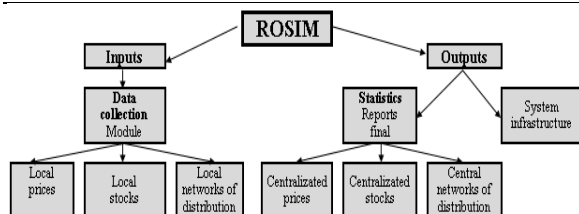


Fig.1. Modular structure of the platform ROSIM

Integrated web system operation is based on:

- running web server software, program that understands and responds to HTTP requests made by a web client;
- uniform view on different monitors, documents made public on the web, made in a special way;
- definition of browser or browser running on the computer;
- achieve a set of computers connected to the network.

ROSIM system is designed for a wide range of users:

- decision makers in central and local authorities (Ministry of Agriculture and Rural Development, Agricultural Departments, municipalities etc.).
- farmers
- processors
- distributors
- Research and education
- other users

Below are the main windows ROSIM system. In the main window, on the left there is a navigation menu that allows selection above modules, namely:

- *General information*

Figure 2 presents some general information about the system and in Figure 3 are instructions for users of computer platform.

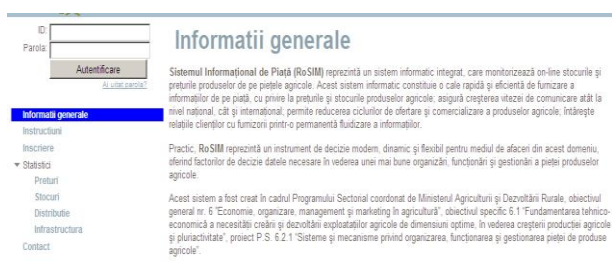


Fig. 2 - General Information

Source: <http://www.rosim.infoagroturism.ro/?page=home>

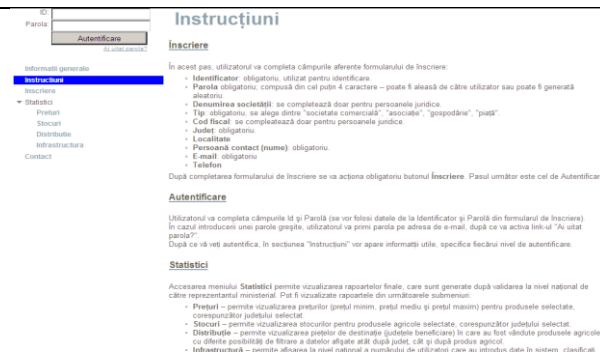


Fig. 3 – Instruction for users

Source: <http://www.rosim.infoagroturism.ro/?page=instrucțiuni>

• *Registration / Log in*

Module registration / authentication - in this mode there are two sections, namely (fig. 4): a) Section authentication - allowing users already registered login for entering data; b) Registration section - which allows registration of new users of the system. In this section, users who wish to enroll must complete a form that includes: name of company or agent; kind (company, association, individual household or agent). Following completion and registration, the user will receive a user name and a password, which will then log in to the system.



Fig. 4 Module registration / login

Source: <http://www.rosim.infoagroturism.ro>

• *Data Collection - Prices, Stocks, Distribution networks*

Data collection module (figures 5, 6, 7) - consists of 3 submodules, namely: prices, inventory and distribution.

Submodule Prices - within its data is collected agricultural prices over a period of time. The user chooses the reporting date, the product and price.



Fig. 5 Submodule Prices
 Source: <http://www.rosim.infoagroturism.ro/?page=preturi>

Submodule Stocks - stocks collects this sub products that have been previously entered sales prices. Here, the user has the choice reporting period. In stock collection window, the user must enter: product name, initial stock (if any), inputs, outputs (sales), followed by the system to calculate the final stock, end stock will be reported as initial stock in the near Next.

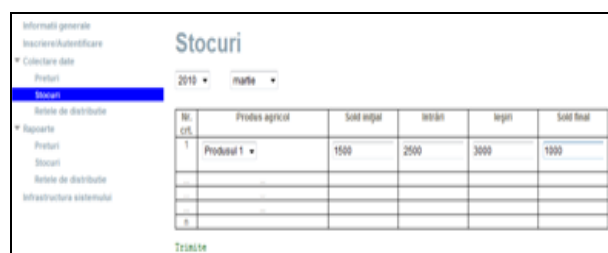


Fig. 6 Submodule Stocks
 Source: <http://www.rosim.infoagroturism.ro/?page=stocuri>

Distribution networks submodule - allow location-tracking product movements (county) and destination (processor, consumer, distributor). This is particularly important as it allows finding the size of demand of a product or multiple products in a certain area of the country, enabling fast and effective decisions to regulate it.



Fig. 7 Submodule Distribution networks
 Source: <http://www.rosim.infoagroturism.ro>

Next image shows the Sales window where users can select the date, county, agricultural product categories, quantities, prices, beneficiary, destination.

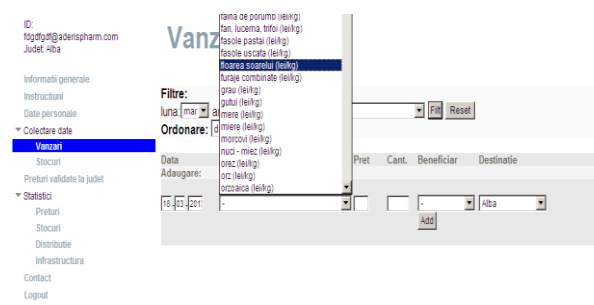


Fig. 8 Sales window
 Source: <http://www.rosim.infoagroturism.ro/?page=vanzari>

- *Reports - Prices, Stocks, Distribution networks*
- *System infrastructure*

The last section of the program, system infrastructure is actually a database summarizing some information on the number of markets, family farms, associations and companies registered in the system.

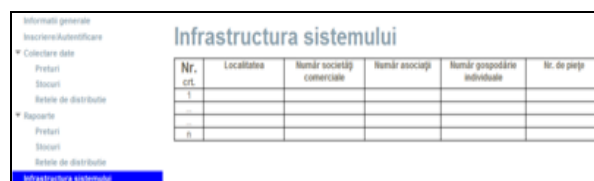


Fig. 9 Infrastructure system
 Source: <http://www.rosim.infoagroturism.ro/>

Price data monitoring must take into account the circumstances in marketing because sales conditions and dynamics can impact the price of the product.

CONCLUSIONS

ROSIM was created so that it becomes a support level decision makers are on different branch of the food, especially agricultural policies need to adapt to changes in supply and demand and supply in the market. ROSIM was created with the intention of bringing together scattered elements and raw data and to distribute them in the form of coherent information.

Established experimental model system structure and its components, working as a cooperative decision support and web assisted in architecture client / server to connect to the Internet, distributed databases and software applications to achieve process monitoring prices of agricultural products.

Such a system is not a lot of data and information organized, it is also a tool that provides ways of interpretation. Thus, ROSIM is intended as an IT personnel structure and tools aimed at collecting, sorting, analyzing, evaluating and distributing accurate and real-time information to support decision makers in their action planning, implementation and control marketing activities.

Making software ROSIM shows wide possibilities offered by this product information to process on-line data, Internet data collection, processing and transmission of agricultural prices in food markets at county level and ministry in the decision-making.

The integrated system has a systemic character, open that allows development and enlargement by including all markets, nationally and connection to the European Union to meet the requirements of the acquis communautaire, effective management processes in agriculture. and integration in Europe. The integrated system achieved a unitary concept, a platform with distributed databases in client/server architecture, network connected to the web at the national level and, in the future, possibly at European level to ensure the discretion, the advice and information for institutional bodies and other agricultural organizations.

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