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QUALITY IMPROVING OF FINANCIAL MANAGEMENT OF AGRICULTURAL PRODUCTION IN CONDITIONS OF AN INFORMATION SOCIETY

Summary. Nowadays it is inevitable to apply the effective system of management information security in agricultural production. Company information infrastructure should be built in accordance with the needs of financial management of a company and it should contain actual trends of information system and technologies development. In this article we pay our attention to problematic fields which need to be respected in the process of automated management of agricultural production. Only the manager is considered to be the most substantial element in the whole system and also his abilities to use information solution for agricultural production process.

POPRAWA JAKOŚCI ZARZĄDZANIA FINANSOWEGO W PRODUKCJI ROLICZEJ W WARUNKACH SPOŁECZEŃSTWA INFORMACYJNEGO

Streszczenie. Obecnie niezbędne jest zastosowanie skutecznego systemu zarządzania bezpieczeństwem informacji w produkcji rolnej. Infrastruktura systemu informacji o spółce powinna być zatem tak skonstruowana, by odpowiadała na potrzeby systemu zarządzania finansami i była zgodna z aktualnymi trendami i rozwojem technologii. Z uwagi na aktualność i wagę zarządzania bezpieczeństwem w produkcji rolnej w niniejszym artykule podjęto próbę identyfikacji problematycznych obszarów automatyzacji zarządzania w produkcji rolnej. W artykule podkreśla się także rolę menadżera i jego umiejętności w budowie systemu zarządzania bezpieczeństwem informacji w przedsiębiorstwie.

1. Introduction

All countries of the EU try to use ICT meaningfully in order to quicken the development of their companies and business. They directly tie up with the “Framework program for

competitive ability and innovation (for years 2007 – 2013) made by the European commission in April 2005. Program supports the activity for development of the unified European information space and reinforces the domestic market for information products and services. Its aim is to encourage the innovation by the means of extended implementation and investment to ICT in order to develop the accessible information society. The effort of society is to enable mainly the development of mutual access and coordinated activities, the change of good procedures and implementation of interoperate solutions in the whole Union (2005).

The strategy of the European Union accepted in March 2000 in Lisabone is laid on the unique statement according to which the future of Europe consists of successful entrepreneurs, mainly the small and medium companies, and also how they use information and communication technologies (ICT).

The government of the Slovak Republic as the governments of other countries of the EU equally realizes the need of formulation its own policy for the development of the information society in SR. One of the main priorities is to create the company climate and the incentives for company investments and the development of information-communication and knowledge-based industry in SR mainly in the field of small and medium businesses and also the leakage of its results to all spheres of the national economy and the life of society.

According to Škorecová (2008), Kučera (2006), Ubrežiová (2008) and Michaláková (2007) the building of information system has an important meaning on a level of agricultural companies in order to increase the quality of management and decision making where is necessary to respect the specific features of agricultural production.

Main problems of financial and internal management information security are concerned in this article. The aim is to:

- present the results of our research in the fields of management information security in agricultural companies,
- point out the meaning of qualitative information base`s creation in companies.

2. Materials and methods

Realisation of the set aim required the analysis of current status information system at our market, but also current status in chosen agricultural subjects. In the concrete we directed to:

1. information infrastructure in relationship to data processing,
2. monitoring of trading income,
3. environmental economy.

We applied the methods of observation, analysis, synthesis, directed discussion with software company developers, and also with operators of information systems in business

subjects in the research of mentioned topic. We specialized in the monitoring of the conception system, its components, integrity and functional characteristics, quality and possibility of additional development and the attention was also directed to the system reliability, stability in regard to company management.

For the solution of this topic we utilize the information sources of available domestic and foreign literature including the actual internet domestic and foreign sources.

In this article some data and partial results are used from the research task E-XI realised in the department of information systems: Transformation of company information systems in agro resort in connection with the entry to the EU.

3. Results

Financial management of agricultural production has its own specific features given by the character of this production, which increase the intensity for information security. Nowadays it is impossible to manage the whole process without computer processing.

Information structure is very important for a company, because it secures:

1. Input data for management and decision. Two alternatives of data acquisition can be identified in agricultural companies:
 - a) decentralized – it means the data are processed by computer just in the place of their origination in individual operations,
 - b) centralized – data are processed by a computer on a company level. The disadvantage of such a process is that the data from the base evidence (original/primary documents) are rewritten, which causes the decrease of actuality (usually processing is made for a particular time interval) and the increase of processing error rate. Table 1, (1).
2. Processing of registered data – the quality of processing increases declared ability of data and the quality of information support for managers. Users are fully responsible for input data and the form of data processing is influenced by the quality of software solution.
3. Referred results – documents evaluated by the managers of chosen companies according to that, whether they are sufficient for financial management. Table 1, (2).
4. Distribution of processed results to managers on individual levels of organization structure – presentation of processed results depends on the quality of software and also the abilities of users to create required reports, in fact the majority of current programs disposes wide possibilities for the creation of own reports.

We analyzed the periodicity of information utilization in a chosen set of companies. This periodicity provides software processing according to time: daily, weekly or monthly. Table 1, (3).

Table 1

Results of research done in a chosen set of agricultural companies

Data acquisition (1)		Data processing (2)		Utilization of documents (3)		
Decentralized	Centralized	Documents are needed to complete	Documents are sufficient	daily	weekly	monthly
45%	55%	37%	63%	27%	17%	56%

Source: own research.

The basic element of qualitative software security is a presentation of the company organization structure. It is not sufficient, when software secures a record and consequently keeps an evidence only for particular departments. The organization structure should be adjusted so that it would be possible to:

1. divide departments in plant production into production blocks for better control of crop procedure, consumption of fertilizers and sprays, documents for subsidies, etc., the evidence of area in ha, status of land and its analysis are required as well,
2. monitor individual stables and categories of animals in animal production, the detailed evidence of animals is usually solved in a special program part: Animal store, which solves increases, decreases and transfers of animals in separated cards,
3. solve the mechanization evidence into particular garages, machines, technologies and maintenance (workshop).

Detailed organization structure is also important for requirements of managers in order to structure trading income. Monitoring of trading income by means of total annual revenues and costs, it means utilization of classic model used in accountancy, is not sufficient for the current management of agricultural production. Requirement of managers is focused on the possibility to make an analysis of individual trading income items for an arbitrary time period. We regard as the most advantageous system the one which enables to choose the required group of costs and the system will be able to present them according to several dimensions – e.g.:

- according to the place of cost origination,
- according to the time of cost origination,
- according to the internal departments,
- according to the aim of the costs use,
- in the animal production according to the individual categories of animals,
- in the plant production according to the individual plants,

- in mechanization according to the individual machines and the orders for machine works, the profitability of vehicles and so on.

The value of the mentioned analysis is increased with the possibility of showing the reference values, i. e. with the possibility of comparison with previous periods and before set values.

Nowadays the conditions are stricter for the agricultural production with the connection of the environment protection. One of the relevant requirements is following of the Directive of Board n. 91/676/EC about the protection of water resources against the contamination by nitrates from agriculture. It is known as a “Nitrate directive” in practice. Unambiguously it is an advantage for farmers if their information systems enable following of obligations resulted from this directive. Software solution should secure:

1. the evidence of fertilization in regard with the valid announcement (it means fulfil the cards of fertilizers with data separated into industrial and own fertilizers and the evidence of nutrient substitution),
2. the balance of nutrient according to particular plots,
3. the evidence of crop procedure.

We consider as the most appropriate way the creation of a separated subsystem which will be connected with other parts of the company system and mainly with the organisation structure, stocks, animal store and with the plant production. Simultaneously the subsystem should contain pre-defined files – the dial, which would consist of nutrient utilization (main and supplementary goods), the dial for the definition of other moves for identification of required documents according to which it will be possible to count nitrate directive, then the file with the actualised nitrate directive. It is also necessary to create relationships between output and organization structure (chase).

4. Conclusion

Financial management of a company and its software security should be created in such a way that they would keep specific features of agricultural production and mainly:

- monitoring of a farming year. The agricultural production is different in many ways from calendar year and the evaluation should accord to this fact,
- calculation of main and supplementary goods. Main goods create the majority of products in agricultural company (milk, meat, calves...), but the calculation of additional indicators (e.g. costs and profit per ha) are important as well,
- internal transfers of costs (tractor work, combine harvester, and other machines),
- unfinished production.

We consider as one of the most important things the solution of information infrastructure so that it would secure in the process of data acquisition:

1. data report in real time – decentralized acquisition secured by the company intranet is the best solution for the security of data acquisition . It is financially more pretentious solution for agricultural companies but only this way can indeed secure operative management,
2. security of correct input data – it means to avoid mistakes in the process of input to computer processing . The responsible person for correct data is that one which inputs them to the computer and as follows the protection of correct inputs should be solved in software – it means qualitative solved dials, which do not secure incorrect input data (e. g. predefinition of activities for individual departments will be secured by relevance of production evidence for department).

After the realised analysis we recommend to secure agricultural companies by the information system in which it will be possible to:

1. record
 - costs and incomes for individual elements of the organization structure, eventually for employees,
 - record costs and incomes for individual outputs,
 - set limits for individual costs,
 - monitor signal statements about the amount of costs,
 - solve planned calculations,
2. solve
 - solve agricultural reporting,
 - solve manager evaluation including a financial analysis,
 - alternatives in the case of deviation formation from settled limits,
 - relate cost and value system of the company, secure a relation between costs and revenues for employee rewards,
3. secure
 - a relation with external programmes (export of data to MS OFFICE, MS Excel and so on),
 - solve internet trading and electronic communication with suppliers and consumers.

Software which disposes with the possibility of signal statement is a contribution for financial management and data evidence is solved in real time. Manager is able to find out and solve the deviations of originated costs, so other losses or ineffective uses of costs are avoided. Instead of a common way, in which e.g. all costs in the plant production are recorded

continuously, but they are evaluated after the data acquisition, the above mentioned way has indisputable advantages. It is almost the same in the animal production, where detailed evidence of used costs is missing – only some of the programmes dispose with the possibility of cost evaluation for individual turns of animals.

Bibliography

1. Kučera M., Látečková A.: Information systems in business practice. SPU, Nitra 2006, p. 115.
2. Škorecová E.: Nákladový systém ako súčasť manažérskeho informačného systému podniku (Expense system as a part of company's management information system). Agricultural Economics. ČAZV 8, Praha 2008, p. 342-347.
3. Michaláková J.: Information systems in company management. Proceedings of the International Conference of the Doctorate Students held in Tomas Bata University in Zlín, UTB, Zlín 2007, p. 57.
4. Ubrežiová I.: International Management and Business. SPU, Nitra 2008, p. 158.
5. Vymetal J., et al.: Information and knowledge management in practice. Lexis Nexis CZ s.r.o., Praha 2006, p. 400.
6. Frame programme for competitiveness and innovation from 2007 until 2013 presented by the commission of European community, Brussel 2005.

Omówienie

Zarządzanie finansami przedsiębiorstwa i dostosowane do niego oprogramowanie powinno uwzględniać specyficzne uwarunkowania produkcji rolniczej, a w szczególności:

- monitorowanie rolniczego roku obrotowego: cykl produkcji rolniczej znacznie różni się od roku kalendarzowego i dlatego procesy oceny i dostosowania oprogramowania powinien uwzględniać ten fakt,
- kalkulację podstawowych i uzupełniających dóbr: podstawowe dobra tworzą główne produkty przedsiębiorstwa rolniczego (mleko, mięso), ale niezbędna jest także kalkulacja dodatkowych wskaźników, odnoszących się przykładowo do kosztów i zysków z jednego hektara produkcji,
- wewnętrzne transfery kosztów (pracy ciągnika, kombajnu i innych maszyn),
- produkcję w toku.