

UDK: 338.43.1.

Pregledni rad

Review paper

DOI: 10.5937/PoljTeh2202051A

THE IMPORTANCE OF BUSINESS DECISION-MAKING OF TOP MANAGEMENT IN AN AGRICULTURAL COMPANY THAT USES THE PRACTICAL APPLICATION OF NEW APPROACHES TO SOFTWARE SOLUTIONS IN THE IT SECTOR IN THE REPUBLIC OF SERBIA

Ivan Arnautović¹, Tatjana Davidov², Sanda Nastić³, Slobodan Popović*⁴

¹ High School of Entrepreneurship, Majke Jevrosime 15, 11000 Beograd, Serbia

² Info-stan Technologies d. o. o. Narodnih heroja 30, 11000 Beograd, Serbia

³ Public utility company „Tržnica“, Žike Popovića 4, 21000 Novi Sad, Serbia

⁴ Public utility company „Gradsko Zelenilo“, M. Leskovca 1, 21000 Novi Sad, R.Serbia

Summary: Valid making important business decisions is of particular importance in agricultural companies. Top management in agricultural companies should be in an innovative mood for the application of new technical solutions that will facilitate the business of the company and through which it will achieve better business results. In this paper, the Authors emphasize the importance of using new approaches regarding the practical application of software solutions in agricultural companies. Business management decisions of top management can be based on the application of new software solutions. The application of new software solutions in agricultural companies is related to the processes of previously established internal control processes in the regular operations of the mentioned companies. In this paper, the Authors emphasized the importance of developing software solutions whose application leads to a better overall business in an agricultural enterprise in a safe way.

Key words: agricultural enterprise, business, software application.

*Corresponding Author. Email: slobodan.popovic49@gmail.com

INTRODUCTION

Modern business decision-making in agricultural companies in the Republic of Serbia requires top management to implement new business solutions whose application can significantly improve corporate governance [1], [2], [3].

In such conditions, business management may involve the application of new software solutions. This is of great importance for the business of companies that operate in agriculture, because the turnover of capital in such companies is far less than in other activities such as: industry, trade and others.

The application of new software solutions is of special importance, especially in conditions when it is desired to improve the overall management through the use of developed new software applications [4]. Management decisions of top management should be based on the application of realistic and rational business decisions [5], [6], which will include the application of innovative technical solutions. In such solutions, the application of new and specialized software solutions can mean the improvement of the overall business of the agricultural company in a very short time.

The application of business decision-making of top management in agricultural companies should include the introduction of numerous standards in all parts of the agricultural company [7], [8], [9].

In addition, the improvement of business decision-making means the introduction and application of new technical solutions such as the application and implementation of new software solutions. Top management should adopt the application of new software that is very often developed by specialized software companies [10].

In this paper, the Authors emphasize the importance of software development according to the requirements of the top management of the agricultural enterprise towards the software development company. The required software solutions should correspond to the development of the business of the agricultural enterprise (service provider).

METHODOLOGIES RELATED TO THE APPLICATION OF SOFTWARE SOLUTIONS IN AN AGRICULTURAL ENTERPRISE

The long-term (development) goal of software engineering development in agricultural enterprises is primarily aimed at finding new, predictable processes or methodologies, which would raise the level of productivity and quality of development flows and ready-made software solutions.

Based on that, it can be concluded that the software project management process is a very responsible task that is primarily done for the needs of the agricultural company by software companies that develop software within the given deadline and in relation to the received budget.

Therefore, successful management of software projects is a very demanding job, both in relation to the set time and in relation to the costs approved by the client or agricultural company. It is most often used in the practice of making and developing software, the so-called waterfall model.

Namely, it is one of the traditional models in the development of software solutions, with a sequential approach.

The mentioned model has its positive and negative effects on the final product, i.e. on the delivered software to the client, i.e. to the agricultural company.

Clients and software companies are constantly looking for finding a more flexible, faster, cheaper and more modern way of understanding the development of software solutions. In addition, software companies should evaluate the so-called "good" practice of software solutions development according to:

- iterative software development,
- managing user and development team requirements,
- use of component architecture,
- language for visual modeling,
- continuous assessment of the quality of development solutions and finished products,
- change management.

The research was done in the first half of 2021, in 72 agricultural companies in the Republic of Serbia, with the aim of revealing the vision of the top management of the mentioned companies regarding the introduction of software solutions in companies.

This was done in such a way that it was proposed that 4 groups of influences (factors) namely: analysis of software application problems, understanding user needs, system definition and possible system scope and timely management of user request changes, evaluation of top management through the evaluation interval of 1-10 And through a description in relation to the three levels of impact (low, Medium and high impact) on the purchase of a software solution.

REALISTIC APPLICATION OF GOOD BUSINESS PRACTICE REGARDING THE IMPLEMENTATION OF SOFTWARE IN AGRICULTURAL ENTERPRISES

Good business practice regarding the implementation of software in agricultural enterprises depends on the desire and resources that top management wants to invest. In this sense, the Authors presented in Figure 1, which presents the possibility of a general scheme that will know how to apply software development in agricultural companies that are committed to the application of innovative solutions for the application of software in management processes.

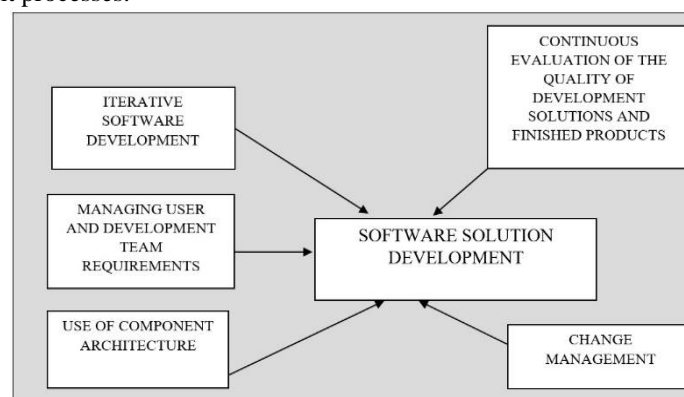


Figure 1. Development of software solutions in the system of "good practice" in agricultural enterprises

Below, the Authors provide an overview of the relationship between software development and the practical requirements of top management who are important software buyers.

The Authors present some of the important factors influencing the software solutions intended for the market of agricultural companies that want to buy software solutions for the business of their companies in Table 1.

Table 1. Overview of factors influencing software solutions intended for the agricultural company's market

Factors influencing software solutions of agricultural companies	Top management rating	
	Average rating of top management (in the range of 1-10)	Descriptive assessment of top management on the level of significance of the impact on the market-based software package of an agricultural enterprise
Analyzes software application problems	4,3	Low level
Understanding user needs	6,2	Intermediate level
System definition and possible system scope	6,1	Intermediate level
Timely management of user request changes	7	Intermediate level

General overview of factors influencing software solutions in agricultural companies that are in demand in the market, the Authors presented:

$$\text{ASAP} + \text{I} = \text{ETP} \quad (1)$$

$$\text{UUN} + \text{I} = \text{ETP} \quad (2)$$

$$\text{SDS} + \text{I} = \text{ETP} \quad (3)$$

$$\text{TMU} + \text{I} = \text{ETP} \quad (4)$$

Where symbols are marked:

ASAP = Analyzes software application problems;

UUN = Understanding user needs;

SDS = System definition and possible system scope;

TMU = Timely management of user request changes;

I = Influence;

ETP = assessment of top management.

DISCUSSIONS

Modern management of agricultural enterprises implies making valid business decisions of top management. In agricultural companies, valid business decision-making in the Republic of Serbia is becoming more and more important, and real and valid management increasingly depends on real applications of software solutions developed by IT companies for the needs of agricultural companies.

Requests for the development of new software solutions are obtained by order of the top management of the company, which are also called service customers.

Thus observed flow of the implementation of new software solutions leads to the optimization of management decisions of top management of agricultural enterprises in terms of business decision-making in agricultural enterprises.

Based on the presentation in Table 1, it is clear that the analysis of the software solution is the worst evaluated by top management, because the ocean average is 4.3 (low level of impact), while in the other 3 factors the impact is at the level of medium level of impact. All this indicates that there is a high level of misunderstanding of the overall issue regarding the introduction of software in agricultural companies in Serbia.

CONCLUSION

Making business decisions in agricultural companies in the Republic of Serbia increasingly depends on the real application of software solutions approved by the top management of the company. The aim of the paper was to emphasize the importance of introducing new processes that could improve the business result in the regular operation of agricultural enterprises. In this particular case, the Authors focused on the application of new software solutions according to the requirements of top management while maintaining a realistic framework (means-time of implementation of new software). Within Figure 2, the Authors presented frequently used factors, namely: analysis of software application problems, system definition and possible scope of software application system, understanding of user needs (agricultural enterprise), numerous management of changes in user requirements (agricultural enterprise). In addition to the basic contribution of the Authors who emphasized the importance of applying these 4 factors, the Authors emphasized the importance of the continuous process of applying software solutions to the general business of an agricultural enterprise. The comprehensive development of new software solutions in the mentioned companies is of great importance for the existence of the expected business success in the companies that decide to apply the software, especially within the regular functioning of the agricultural company.

The study indicates that in the future, top management must be further educated in the field of practical application of software solutions in the functioning of agricultural enterprises.

REFERENCES

- [1] Popović S, 2015. Implementacija heterogenih rizika u radu interne revizije, Revizor 69/2015.

- Popović, S., Novaković, S., Đuranović, D., Mijić, R., Grublješić, Ž, Aničić, J. & Majstorović, A. (2017). Application of international accounting standard-16 in a public company with predominantly agricultural activities, *Economic Research-Ekonomska Istraživanja*, 30(1):1850–1864.
- [2] Radović, M., Vitomir, J., Laban, B., Jovin, S., Nastić, S., Popović, V. & Popović S. 2019. Management of joint stock companies and farms by using fair value of agricultural equipment in financial statements on the example of IMT 533 Tractor, *Economics of Agriculture*, 1: 35-50
- [3] Popović, S., Tošković, J., Majstorović, A., Brkanlić, S., Katić, A. 2015. The importance of continuous audit of financial statements of the company of countries joining the EU, *Annals of the „Constantin Brâncuși” University of Târgu Jiu, Economy Series, Special Issue*, pp. 241-246.
- [4] Toković, T. 2011. Softverske komponente u razvoju arhitektura poslovnih aplikacija, *Magistarska teza, Ekonomski Fakultet u Subotici*.
- [5] Radović, M., Vitomir, J. & Popović, S. 2021. Impact of internal control in enterprises founded by local self government units: the case of Republic of Serbia, *Inžinerine Ekonomika-Engineering Economics*, 32(1): 82–90.
- [6] Cantino, V. 2009. *Korporativno upravljanje, merenje performansi i normativna usaglašenost sistema internih kontrola*, Beograd, Data Status.
- [7] Bojović, R., Popović, V., Ikanović, J., Živanović, Lj., Rakašćan, N., Popović, S., Ugrenović, V. & Simić, D. 2019. Morphological characterization of sweet sorghum genotypes across environments, *The Journal of Anim. Plant Sciences*, 29 (3): 721-729.
- [8] Terzić, D., Popović, V., Malić, N., Ikanović, J., Rajčić, V., Popović, S., Lončar, M. & Lončarević, V. 2019. Effects of long-term fertilization on yield of siderates and organic matter content of soil in the process of recultivation, *The Journal of Anim. Plant Sciences*, 29 (3): 790-795.
- [9] Ugrenović, V., Popović, V., Ugrinović, M., Filipović, V., Mačkić, K., Ljubičić, N., Popović, S. & Lakić, Ž. 2021. Black Oat (*Avena strigosa Schreb.*) Ontogenesis and Agronomic Performance in Organic Cropping System and Pannonian Environments, *Agriculture* 2021, 11(1): 55.
- [10] Williams, C. 2010. *Principi menadžmenta*, Data Status, Beograd.

**ZNAČAJ POSLOVNOG ODLUČIVANJA TOP MENADŽMENTA
U POLJOPRIVREDNOM PREDUZEĆU KOJA KORISTE PRAKTIČNU
PRIMENU NOVIH PRISTUPA SOFTVERSKIH REŠENJA
IT SEKTORA U REPUBLICI SRBIJI**

Ivan Arnautović¹, Tatjana Davidov², Sanda Nastić³, Slobodan Popović⁴

¹ *Visoka strukovna škola za preduzetništvo, Majke Jevrosime 15,
11000 Beograd, Republika Srbija*

² *Info-stan Tehnologije d.o.o. Narodnih heroja 30, 11000 Beograd, R. Srbija*

³ *Javno komunalno preduzeće "Tržnica", Žike Popovića 4, 21000 Novi Sad, R. Srbija*

⁴ *Javno komunalno preduzeće „Gradsko Zelenilo“, Mladena Leskovca 1,
21000 Novi Sad, Republika Srbija*

Sažetak: Validno donošenje važnih poslovnih odluka je od posebnog značaja u poljoprivrednim preduzećima.

Top menadžment u poljoprivrednim preduzećima trebalo bi da bude inovativno raspoložen za primenu novih tehničkih rešenja pomoću čije primene će moći olakšati poslovanje preduzeća i pomoću čije primene će ista ostvariti bolje poslovne rezultate.

U ovom radu autori ističu važnost korišćenja novih pristupa u vezi praktične primene softverskih rešenja u poljoprivrednim preduzećima. Donošenje poslovnih odluka top menadžmenta može se zasnivati na primeni novih softverskih rešenja. Primena novih softverskih rešenja u poljoprivrednim preduzećima povezana je sa procesima prethodno uspostavljenih procesa interne kontrole u redovnom poslovanju pomenutih preduzeća. Autori su u ovom radu naglasili značaj razvoja softverskih rešenja pomoću čije se primene se na siguran način dolazi do boljeg ukupnog poslovanja u poljoprivrednom preduzeću.

***Ključne reči:** Poljoprivredno preduzeće, poslovanje, primena softvera.*

Prijavljen: **06.09.2021.**

Submitted:

Ispravljen: **21.12.2021.**

Revised:

Prihvaćen: **01.03.2022.**

Accepted: