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**ENTERPRISE RESOURCE PLANNING IN SMALL
AND MEDIUM-SIZED ENTERPRISES IN SERBIA**

The current study examines the enterprise resource planning (ERP), within the existing or newly envisaged information technology (IT) solution for small and medium-sized enterprises (SME) in Serbia. The results indicate that ERP should be profoundly based on more or less developed business infrastructure and not on sophisticated management methods, but on some form of formal but effective business planning model (BPM). The suggested conceptual approach is based on the adequate selection of IT solutions for a particular SME. It is significant that Serbia's SMEs underestimate complexities and the resource draining effect of ERP at least in the initial phases of adoption. The paper gives the reasons pro and contra the adoption of ERP by SMEs, also pointing out the relationship with adequate BPM as well as financial planning and forecasting as a foundation for any, even very simple ERP. Capital budgeting technique is a sound and solid foundation for ERP introduction and development in SMEs in Serbia. ERP as a strategic orientation could offer to Serbian SMEs the capacity to increase competitive edge, improve management and performance in the long run.

Keywords: enterprise resource planning; small and medium-sized enterprises; Serbia.

JEL Classification: G3, G31, L21, L29, M15.

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**ПЛАНУВАННЯ РЕСУРСІВ ПІДПРИЄМСТВА: ЗА ДАНИМИ
МАЛИХ ТА СЕРЕДНІХ КОМПАНІЙ СЕРБІЇ**

У статті досліджено планування ресурсів підприємства із застосуванням новітніх інформаційних технологій для малих та середніх компаній Сербії. Результати аналізу даних підводять до висновку, що для впровадження систем планування необхідні хоча б мінімальна бізнес-інфраструктура, а також формальна та найпростіша модель бізнес-планування. Продемонстровано приклад вибору програмного забезпечення для планування на конкретному підприємстві. Керівники малих та середніх підприємств у Сербії часто не розуміють складностей та витрат, пов'язаних з введенням такої системи. Крім того, вони забувають про те, що основою будь-якого планування ресурсів є комбінація бізнес-планування, фінансового планування та прогнозування. Окремим важливим елементом планування ресурсів є планування капітальних вкладень. Система планування ресурсів підприємства може підвищити його конкурентоспроможність, якісно покращити менеджмент та показники розвитку у довготривалій перспективі.

Ключові слова: планування ресурсів підприємства; малі та середні підприємства; Сербія.
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**ПЛАНИРОВАНИЕ РЕСУРСОВ ПРЕДПРИЯТИЯ: ПО ДАННЫМ
МАЛЫХ И СРЕДНИХ КОМПАНИЙ СЕРБИИ**

В статье исследовано планирование ресурсов предприятия с применением новейших информационных технологий для малых и средних компаний Сербии. Результаты анализа данных приводят к выводу, что для введения систем планирование необходимы хотя бы минимальная бизнес-инфраструктура, а также формальная и простейшая модель бизнес-планирования. Продемонстрирован пример выбора программного обеспечения для

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планирования на конкретном предприятии. Управляющие малыми и средними предприятиями в Сербии зачастую не понимают сложностей и затрат, связанных с введением такой системы. Кроме того, нередко забывается, что основой любого планирования ресурсов является сочетание бизнес-планирования, финансового планирования и прогнозирования. Отдельным важным элементом планирования ресурсов является планирование капитальных вложений. Система планирования ресурсов предприятия может повысить конкурентоспособность фирмы, качественно улучшить менеджмент и долгосрочные показатели развития.

Ключевые слова: планирование ресурсов предприятия; малые и средние предприятия; Сербия.

Problem statement. Small and medium-sized enterprises in Serbia are specific in nature and operations, quite different from large corporations, due to a prolonged period of economic stagnation and institutional environment of economic and social transition. That is one of the main reasons why models and operations of contemporary management theory and practice could not be easily transferred to SMEs. Most enterprises here work in trade and commerce. Economic scene, business conditions and process of decision-making are difficult for the existing SMEs and even more for new ones. New enterprises lack capital, skills, know how, management etc. Limited resources are a visible obstacle to growth. Hesitant and slow implementation of information technology (IT) is a big obstacle to the implementation of the enterprise resource planning approach (ERP). Those SMEs with successful management are more prone to adopting ERP.

SMEs owners are mostly managers, and the decision to implement ERP depends exclusively on them. SMEs are faced with the ever increasing inflow of internal and external information which should be handled properly. In the countries with strong SME sector growth (APEC members, most of the OECD member countries, ASEAN); the government is supporting SMEs investments in IT.

Only significant investments in IT and ERP could support the survival of the SME sector in Serbia. The future is to assist SMEs as potential buyers to become aware of the advantages and disadvantages of introducing IT and ERP. The right step is education of prospective customers in business planning, budgeting skills and managerial techniques.

Literature review. As the first step in our research we have opted to envisage how much Serbian SMEs really in practice do apply business planning models, e.g., at least budgeting techniques. One of the few areas in which big performance improvement is possible in Serbian SME sector is the application of simplified business planning models. These companies are hungry for external capital and funding, but on the other hand, they are not adequately prepared to absorb efficiently external financial resources in the most profitable way, while maintaining the lowest liquidity. The step by step approach in introducing first some basic management skills and approach is a prerequisite for business planning and forecasting, which in turn pronounces needs for some kind of IT solution, and later on ERP system. The simplified approach we are proposing is possibly the only one which could be applied by Serbian SMEs. The efficient business planning model for SMEs is a sine qua non for IT, MIS and ERP, the reverse sequence is not logical, even less viable. Our research points out that the effective and efficient business planning model is mainly relying on the following

components: business history, employees, investment criteria and marketing strategy, regulation, financial and operational performance and management.

Business planning concept is based on the adequate choice of IT for SME, and on that ERP in even some rudimentary form. In business practice ERP system enables a company to do the following:

1. To determine the feasibility of a business venture or of a single decision, and to monitor closely the results.
2. To attract start-up capital in order to finance current operations or development.
3. To develop a pattern for SME business operations, strategic developmental goals, profit activities and possible internal special production or business informal units/profit centres.
4. To create financial budgets, timeframe and direction of SME operations and development on which business progress and performances shall be measured.
5. To direct attention of SME management to real problems and bottlenecks, especially high risk areas, since only contingency business plans give a possibility to react proactively in real time.
6. To focus on to a market potential development.
7. To implement efficient SME management of all business processes and activities.
8. To attract external investors.

We are aware of the fact that business planning and ERP as a logical sequence and an improvement in processes planning do not in any way replace the common sense and logic of SME managers and owners, just the contrary, our argumentation for ERP is pointing out to the fact that logical reasoning is only possible if SME is having and improving its ERP.

We have researched some of the characteristics of ERP systems preparation in Serbian SMEs. The information needs of Serbian SMEs are drastically increasing, and we have noticed the demand for external and internal generated information is growing progressively. An efficient SME business plan is a very detailed formal document, not a wish list. This approach is an adequate response of the SMEs IT and ERP to supply the manager (very rarely – several managers) with financial and non-financial information on how to achieve business goals, how to determine key partners and opponents, how to predict possible outcomes of decisions and actions, while at the same time business goals are quantifiable. ERP systems are enabling SMEs in Serbia to plan and test assumptions and forecasts in advance, with a set of strong financial projections, budgets, while possible problems and risks are also unavoidable under this approach.

Definition of the target problem. The main target of our research is to determine how much information that the small ERPs are offering to SMEs in Serbia is limited in scope and to what extent. For any SME in Serbia with a turnover more than 2–3 mln EUR a year, additional capital of around one 100 ths EUR ERP is the only system which could give at least partial answer to some of the following questions:

1. How to choose the best business proposal or an idea for a particular SME?
2. How to produce or sell new products or services?
3. Where are the prospective markets located, and who shall be the new buyers?

4. How main competitors shall react?
5. How to select business partners and associates?
6. Shall I buy or establish a new SME?
7. How much shall a new venture cost me?
8. How shall I fund the whole new venture or a project?
9. What shall I do if partners or investors do not join, or quit, or if it shall be a big equipment failure or production stoppage?
10. What shall I do if main suppliers and buyers stop to cooperate or slow down the dynamics of trade?
11. What information, knowledge and skills do I need to start up a new venture line or expand the existing one?

ERP system is the only system enabling SMEs transfer business ideas into real profits, since it is much easier and simpler to transfer business idea through ERP into maximized profits than only with business planning on paper and with pencil or IT which is not embracing an ERP in it.

SME managers are highly motivated, able to define alone his/hers goals, to stress strong points, to increase efficiency, to deal with key performance indicators and variables on the individual analytical base, to undertake responsibly calculated risks which he/she is able to control efficiently, and to be in contact with key people and information internally and externally (Stamatovic, 2013).

Key research findings. Today's business planning in Serbian SMEs is consisted of financial forecasting and budgeting techniques, with elements of marketing, human resource and operation management. Financial budgeting techniques are enabling forecasts of future cash flows, trend of income statement, profitability and liquidity, as well as internal and external capital and financing flows, especially the process of construction and creation of consolidated pro forma financial statements as evidenced in (Beierlin, Schneeberger and Osburn, 2007).

Our methodological approach is in some elements different from the standardized methodology of business planning that most SMEs in Serbia use. We strongly stress the need to construct pro forma statements (e.g., balance sheet, profit and loss account, cash flow statement etc.). Serbian SMEs are adopting on the fast track budgeting based on the International Financial Reporting Standards information.

Financial planning and forecasting in Serbian SMEs are first of all very delicate and precise tasks, based on the adequate knowledge of financial management elementary techniques and models. On the basic skills needed in everyday SME operations is financial management, since methods, models and techniques of financial management of large corporations could not be all transplanted to small businesses and vice versa (Ljusic, Ljusic and Marjanovic, 2011).

ERP is enabling a profit oriented firm in Serbia to envisage future financial position, profitability and capital strength. Without ERP any Serbian SMEs is like a blindfolded man driving the bus, while the deaf man/lady is giving instruction how and where to drive. It is possible, but it is not feasible, even less practical. SME which is opting for an integrated IT approach and without any hesitation to introduce ERP since only this system is enabling firm of such a size to assess financial needs to finance the existing and the expanding operations (Wilson and Bates, 2003).

ERP should be redefined as SME wide IT solution which is facilitating information flows and it is also the only platform which integrates information and enables management coordination of all resources and activities. SMEs in Serbia are just entering the prolonged and even deeper financial and economic crises. Many shall disappear and went out of business; only the strong ones shall survive. General lack of resources, not only financial, but more of managerial skills and vision is the limitation factor which in turn is a great obstacle to control costs, efficiency and decision-making (Crownier, 1991).

One possible strategic solution for leading ERP vendors to SMEs in Serbia is to increase awareness of benefits from introducing ERP. But trying to sell "solutions" without knowing a particular client (customer) is more of illusion. Strategy of knowing your customer is first of all to invest some resources in education of SME owners and managers in some basic management and business planning techniques, while at the same time persuade these companies to restructure their business processes and the way of thinking and operating (Miller, 2004).

Also, it is very important to keep the prices for ERP systems as some kind of controlled integrated package, since the approach of the "street dealer" (just to sell anything and then we shall sell whatever we want and at any price we determine) is illusory. Most owners shall react swiftly by abandoning at any cost such an ERP supplier, with possible negative and discouraging effect on many potential buyers from the SME sector.

Dynamic and venture-oriented SMEs in Serbia should adopt ERP as early as possible since the results of serious studies indicate that early adoption is improving drastically the financial performance indicators like:

1. Return on assets (ROA).
2. Return on investments (ROI).
3. Asset turnover ratio (ATO).

Even in the period of prolonged economic crises the pyramid of financial ratios of non-adopters SMEs deteriorate while the ones which adopted were able at least to maintain the pre-crisis levels.

The main conclusion is that early adoption of ERP helps local SMEs to gain and maintain competitive advantage over nonadopters and consequently survive even under the harshest economic conditions (Hunton, Lippincott and Reck, 2013).

Each SME company in Serbia is a different story with its own specific needs for business planning, management, IT and ERP solutions. A simplified but not effective approach is to consider and take stance that it is possible to introduce ERP without adoption of some even very simplified form of SME management, business planning, IT and MIS.

Although specific modules and models we take into account are more than complex even for large, well-structured corporations, at the same time these elements and vital ingredients of business success for SMEs in Serbia. It is very important that most SMEs work in sales and trade, while manufacturing enterprises are the minority. ERP could be a part of the solution but also the generator of problems and conflicts.

Main criteria for SMEs in Serbia when choosing an ERP system is not only the vendor and quality of solution, but also its costs and potential profits from that solution. Of course, ERP is not a solution for anything and everything, it is not capable to

generate a rational answer to any question, but effective ERP could enable profitable SMEs drive business process to standardization, efficient and effective information management in real time business environment. It is still an open question why SMEs in Serbia purchase ERPs, to increase competitive edge or just to solve the problems which intact these firms often cannot define, and therefore are not able to solve. The difference between voluntary adoption and the situation when an SME is pushed to the wall of unsolved problems with no perspective business growth paths on the horizon is very significant for the outcomes and results of ERP adoption. First of all, SME should restructure itself, implement some reengineering solutions, and improve management and business performance. The second step is gaining business advantage through achieving financial goals, to improve information flows and IT management solutions.

The level of knowledge and information what really to expect from ERP is very low in Serbia. Our intuitive perceptions and the questionnaires' of SME owners show that ERP shall bring positive change and profits overnight, that is not a valid expectation at all. On the contrary, the ERP introduction requires financial and other resources, commitment of SME owner or a manager. ERP solutions are not universal, like any human experience and the learning curve it takes a lot of time, efforts, sacrifices, and last but not least money, to make a proper selection, choice and good decision.

1. Each SME is different, needing some level of customization.
2. SMEs should adopt modular ERP implementation, as a process not as one step approach.
3. New ERP should integrate as much as possible with the existing IT.
4. SMEs in decision to buy should implement the criteria of the lowest prices for all phases from buying until the obsolescence of the ERP.
5. It takes few years of rigorous implementation before a new ERP system could improve profitability.
6. Each SME has different information and decision-making needs, so the customization of configuration is necessary.
7. SMEs in Serbia should make strategic decisions to introduce ERP.
8. Most SMEs in Serbia underestimate the total costs, and other resources that such a project will absorb over a long time span, also it might need a lot more of coordination and business planning, for example (Ljubic and Stamatovic, 1995).

This research brings out holistic conclusions, since SMEs in Serbia do not record accounting data on tangible and intangible benefits of ERP exploitation. Generally, SME promoters, like owners and managers are considering ERP but high costs of IT are an obstacle in the period of economic crises and uncertainty about business future. SMEs which have adopted ERP systems from different vendors still are not certain how much that investments and costs have contributed to the ongoing improvement of their internal efficiency and reducing operational costs. ERP is sine qua non for larger industrial SMEs which are the Serbian affiliates of large multinationals (Vijayakumar and Rakesh, 2012).

Conclusions and perspectives for further studies. ERP is a universal solution for everything that SMEs in Serbia need to adopt in order to increase sustainability in their competitive edge. It enables Serbian SMEs deal with everyday business infor-

mation, increasingly demanding business activities. It improves the risk management process. The costs of ERP adoption for SMEs are rather high. The most profitable and dynamic SMEs are reaping the full benefits of ERP, as a way of running profitably business, increasing customer satisfaction, continuous business process improvement, creativity, development and growth.

ERP solution is giving a capability to SME to continuously monitor the level of customer satisfaction, their present and future needs, improved internal audit and business process monitoring, capacity to improve performance measurement and management. The ERP doctrine is assisting SME in continuous efforts to streamline and standardize business process and outcomes, to control better resources, to improve business performance and the quality of management functions. Better SME management, IT and ERP are the intertwined and inseparable elements of success in this process. The benefits that early adopters encounter are better human resource performance, improved operational management, efficient production planning and control, increased sales and financial performance. Fast growing SMEs in Serbia are those which have implemented the best ERP systems as effective solutions to their operational and strategic needs. ERP is offering better use of organizational resources closely integrating manpower, machinery, technology, finance, management and IT.

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