

ERP SYSTEM IMPLEMENTATION IN THE SMALL AND MEDIUM ENTERPRISES: EVIDENCE FROM THE REPUBLIC OF MOLDOVA

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Abstract: Enterprise processes and their effectiveness are an integral part of marketing activities within the framework of modern approaches to marketing. Business processes are becoming faster and more complex. Communications with customers and suppliers are shifting towards the use of modern information technologies. The control and management of such complicated and complex processes require the implementation of modern information systems allowing enterprises to successfully implement their marketing strategies. In turn, the achievement of all these and other fundamental goals for the functioning of the enterprise is impossible without the use of a full-scale automated enterprise management system. In this article, some features of the implementation and use of an ERP class system in the small and medium enterprises (SME) are considered. The research methodology is based on the analysis of activities for the implementation of the Symphony ERP system at five SMEs in the Republic of Moldova based on qualitative research (in-depth individual interviews with the managers of the companies). The study was conducted in January 2022. Key benefits of ERP using for marketing processes were analysed from perspectives of product information, customers relations, targeting, pricing, marketing campaign management, performance management, ROI and insights. The implementation of ERP on SME is most often associated with serious barriers such as errors in preparation for implementation (uncertainty of goals, uncertainty of criteria for evaluating the effectiveness and depth of implementation), low level of formalization of business processes. The research shows the “Symphony” ERP system has been implemented in the above enterprises quite successfully due to the fact that this solution is specific and was developed from the very beginning for the auto service business. The developer of this program was the head of one of the companies, who actively promoted the implementation. Despite the rather high level of telecommunications development and high-speed Internet coverage, such integrated solutions are rarely used by SMEs in the Republic of Moldova. This is due to the high requirements for the qualification of personnel and management of enterprises, as well as the high cost of software and hardware components associated with the implementation of such systems.

Key-words: ERP, marketing, business processes, small and medium enterprises.

JEL Classification: Q3, M, M0, M3, M31.

1. Introduction

Within the framework of modern approaches, business processes of an enterprise and their effectiveness are an integral part of marketing activities. Along with the development of digital technologies, business processes have been accelerating and became more complex, communications with customers and suppliers have been shifting towards the use of modern information technologies. The control and management of such complex processes require the implementation of modern information systems that allow enterprises to successfully implement their marketing strategies. In turn, the achievement of all these and other fundamental goals for the functioning of the enterprise in modern conditions is impossible without the use of full-scale automated enterprise resource planning (ERP, Enterprise Resource Planning). The development of information technology in business management processes has made ERP one of the most widely used business software systems in various industries and organizations.

An enterprise resource planning (ERP) system is a computer information system designed to automate business and create a unified information environment for an organization. It is used for resource planning, accounting and control of financial and economic activities of enterprises, information analysis, supporting management decision-making (Odintsova, 2020). An ERP system is a type of automated business management solution. It includes a suite of applications that streamline and simplify both customer experience and back-office functions, including sales and marketing, finance, HR, accounting, and more. Thus, all employees can use the same system to find and share

important data in real time. ERP-systems can be considered as the information basis of the organization's main business processes. The combination of ERP and marketing provides powerful benefits that allow every employee to play an active role in the company's marketing success.

2. Literature Review

Research shows that the use of data collection and processing systems in the business system has increased significantly. This greatly facilitates the process of making managerial decisions and allows to get consumer insights about the target audience, product, and other useful ideas (Saura, 2021). Research shows a positive relationship between investment in information technology and business performance (Martin-Rojas et al., 2019; Lecerf & Omrani, 2020; Rehman et al., 2020; Bykovskaya, 2021). The effectiveness of using independent ERP data in the analysis of internal rules and statistical results for making managerial decisions to increase the efficiency and coherence of internal processes, obtaining valuable marketing information as tools for increasing the competitiveness of an enterprise has been demonstrated (Tao, Zou, et.al. 2021). Romanian data shows that ERP systems play a key role in improving the financial performance of SMEs (Bama et al., 2021).

At the same time, there is a negative experience of ERP implementation associated with the unpreparedness of the enterprise for changes, a poorly developed implementation plan, insufficient staff qualifications, inadequate technical support, etc. (Orlov, 2020).

However, it is noted that the concept of ERP management and integration in the SME sector is still not well understood (Bahit et al., 2021). This work is focused on replenishing knowledge about the implementation of ERP in SMEs, based on the generalization of the experience of implementation in SMEs in the Republic of Moldova.

3. Methodology

This paper presents an analysis of the implementation of the "Symphony" ERP in small and medium-sized enterprises (SMEs) of the Republic of Moldova, specializing in the sale of spare parts and car repair. A "Symphony", class ERP system belongs to the specific industry and was developed specifically for the conduct of medium and large car services, as well as wholesale and retail auto parts stores. By type of organization, Symphony is a private, desktop (not browser) local system (not cloud). The system is built according to a single architecture and does not provide for modular (partial) implementation.

The system includes various components connected by a single architecture:

- BPM - Business Process Management management of internal processes (production management)
- CRM (Customer Relationship Management)
- DMS (Document Management Systems) document management
- EPM (Enterprise Performance Management) monitoring and analysis of performance indicators (KPi)
- EWM (Extended Warehouse Management) - advanced warehouse management
- HRMS (human resources management system) personnel management
- PM (project management) project management
- QMS (Quality management system) - quality control
- SCM (Supply Chain Management) procurement management
- Accounting
- Tool turnover control
- Cross Reference system - accounting for cross-brand conformity of goods

- Car maintenance standards management
- Management of planned equipment maintenance.
- Trade management

The research methodology is based on the analysis of scientific literature on the topic, generalization, analysis of activities for the implementation of the Symphony ERP system at five SMEs in the Republic of Moldova (BRAVOMOTORS SRL, INTER-Koleso ICS, BOSCH Service SA, TurbineMaster SA, Autotransmission SRL) based on qualitative research (in-depth individual interviews with the managers of the companies). The study was conducted in January 2022.

Four companies from this list are small enterprises with up to 50 employees, and one is a micro-enterprise with up to ten employees. By type of organization, all are private commercial companies. Despite the small size of companies, the complicacy and complexity of internal business processes created a need for a deep systematization and streamlining of the activities of all departments and linking it to one system.

4. Results and Discussion

In nine years of using this software solution, companies have managed to significantly improve their financial performance, reduced costs and optimized the use of labor resources in the enterprises. Data exchange with the accounting system was automated, which significantly accelerated the maintenance of the product range, counterparties and primary documentation overall.

The "Symphony" implements a system for recording and analyzing staff key performance indicators. The Kpi management node allowed to take the assessment of the contribution of each employee to the overall and personal results to a new level; it allowed employees to be motivated in a new way and created an opportunity for a fairer and more transparent payroll system.

The "Symphony" ERP implements a module for calculating and forecasting future sales based on data from technical regulations for car maintenance. This node made it possible to offer consumers a unique solution that allows them to plan annual budgets for corporate car park maintenance.

When the marketing component becomes important for all departments of the company, productivity increases, communication improves and, as a result, customer satisfaction increases. When exploring ways to improve marketing functionality in organizations, we can meet specialized and complex ERP solutions. Specialized solutions are stand-alone marketing software solutions, such as CRM like HubSpot, Salesforce, AMMO CRM. Comprehensive solutions include not only marketing functions, but also production, accounting, and other key business functions.

If we consider that ERP systems contain marketing functions, then a question arises regarding the advisability of considering the introduction of narrow specialized solutions by the business. It must be understood that, depending on the vendor, an ERP system may have weaker marketing functions than a dedicated marketing solution or may not meet specific business goals.

Although a specific solution can provide a competitive advantage, it is important to integrate it with the main ERP system or other company information systems. Integration can be complex and costly, which is why many organizations decide to implement a comprehensive ERP system.

Key Benefits of Using ERP for Marketing Processes

If the docking of heterogeneous software solutions constantly causes problems, creates malfunctions in the work of various departments, then an integrated ERP class solution can seamlessly combine the disparate efforts of different departments of the

company into a single information node, which creates a number of advantages that can advance the company in its development.

4.1. Product

ERP class system can collect detailed product information. A deep understanding of company's own product, demand, sales and inventory data creates opportunity to sell it without creating illiquid stocks. By using data from other departments, some of the most useful data points can be discovered, including:

- Peak sales periods
- Customer Complaints
- Shelf life of certain items
- Optimized pricing structure
- Potential combinations of articles and products in stock
- Number of sales (top selling/low-selling items)
- Search history

For example, based on the collected data array in Symphony ERP about customer search queries, companies were able to identify a whole range of products that were not only repeated in search queries, but also demand for which began to grow. These were goods that were not available in the company's warehouses, but the increasing demand indicated that firms should start purchasing these goods for constant availability in their own warehouse.

Based on the data on the number and frequency of claims for certain brands, SMEs using Symphony ERP took their management decisions regarding the transition to other more reliable product brands. The minimum and optimal figures for stocks of the most popular products were revised, considering the time from the moment of ordering from the supplier until the moment they are received at their own warehouses.

4.2. Client

A comprehensive ERP system through the CRM module allows evaluating the entire customer journey from showing interest in a company or product, purchase to re-purchase or recommendation of a company or service to other potential customers. In a few clicks, you can see what customers are buying, what offers motivate them, when they shop, and much more. Additional items for their online shopping cart; a scheduled sales call that syncs with their order cycle. Improved customer service and support is critical for a company to retain its best customers through an effective retention strategy (Gil-Gomez et al., 2020).

The "Symphony" ERP allows you to understand which communication channels are more convenient for each specific client; at what time of the day and on what day of the week customers are more active and willing to make a purchase due to knowledge of the routine, habits, devices, social networks.

The CRM module allows you to judge which customers convert with which traits better. This works best when sales or account managers capture key communication points:

- what the client needs addressed;
- what doubts and difficulties arose;
- why he chose this company, what influenced the purchase decision;
- average check;
- financial discipline and other data.

Thus, you can not only understand existing customers, but also form an understanding of your target audience, which is very important for building the right targeting.

4.3. Targeting

Researches show that 63% of today's customers expect personalized messages (RedPoint Global survey, The Harris Poll, U.S., U.K., Canada). If the company is still delivering the same marketing message to all members of its target audience, then ERP can help change the communication strategy in favor of a more demanded – individual one.

The "Symphony" ERP makes it easy to see which products are selling best in which channels and adjust company's approach accordingly. For example, the INTER-Koleso company promoted a publication in which it advertised tires every year during the winter season among its regular customers. It was a general publication that reported discounts and high quality of products.

In 2020 and 2021 INTER-Koleso has changed its communication strategy. Their "Symphony" ERP stores data on the winter tire sizes of their customers. As a result, customers were filtered for 205/55 r16 tires, then purchase histories and annual mileage were analyzed, making it possible to compile a list of those customers for whom winter tire replacement was potentially the most relevant. Promotion of a marketing message that contained a specific offer for a specific product with a discounted price affected the increase in sales of this product by 3 times. In general, this tactic allowed to increase overall tire sales by 2.1 times compared to previous years.

4.4. Pricing

The company may offer the best product, but if the pricing structure is wrong, then the value of the offer is significantly reduced. Quick access to the history of prices and sales volumes provides the information necessary to make the right management decision. Analyzing past campaigns, one can see whether lowering the price of a company's products actually helped increase sales and customer acquisition, or whether it simply allowed the company's current audience to buy their regular favorites at a lower price, thereby reducing the company's profit.

The "Symphony" ERP data showed that a higher price was the cause of failure only in 15% of cases. A greater influence on the purchase decision was the ability to physically see and compare the tires before buying and install them on the car directly at the place of purchase. However, in the motor oil segment, the price elasticity on demand turned out to be much higher and refusals due to a higher price amounted to approximately 65%.

Employees of the "Bosch Service" found out that there is a group of goods and services for which demand exhibits very low-price elasticity. Purchasing and retail prices for certain goods changed several times upwards and downwards over a fairly long period of time, but this had almost no effect on demand. When testing the hypothesis and increasing the price of goods of several test segments, the demand remained unchanged. Through this, the company has drawn several important and valuable lessons: discounts and other pricing methods do not affect sales of these products; profitability can be increased without compromising sales volume, and additional profits can be directed to the development of new lines of business.

Offering discounts during the period of time when the system signals a decrease in demand and sales is also an important tool in the formation of a reasonable pricing policy.

4.5. Marketing campaign management

An ERP system, in particular the "Symphony" ERP, combining the functions of marketing, sales and project management, can manage marketing campaigns and events, and due to the fact that it integrates the software functionality of various departments, it can generate holistic reports and serve as the basis for collecting "big data" on the project.

Project management using the ERP system allows company to properly distribute rights and responsibilities within the project, organize and delegate tasks. All this data is available to all project participants in real time, which allows you to quickly evaluate the effectiveness of the event and make the necessary changes, as well as instantly notify all team members about them.

The "Symphony" ERP module, which is responsible for project management, is also able to manage mailings, filter them by participant groups and distribute mailings according to the calendar. The next important node of this module is the automatic construction of a sales funnel, which allows tracking the entire "customer journey" from the moment of first contact with information to making a purchase and recommending a product or brand to other potential customers.

4.6. Performance management

The "Symphony" ERP is able to automatically monitor deadlines, send motivational alerts to subordinates and a summary of the performance of the management. The system allows to set milestones that project participants will be able to navigate during the implementation of the project and its individual tasks, communicate with colleagues and exchange information. This system solution makes it possible to make the work of marketing department employees and other employees involved in the project more efficient, improve the quality and speed of communication, minimize errors associated with the transfer of information, and also free up additional time for employees by reducing the number of software applications involved in the project and the need to switch between tasks.

4.7. ROI

Most often, after the completion of a marketing campaign, it is very difficult to evaluate its effectiveness and compare it with other campaigns. This is usually due to the fact that it is difficult to measure all financial, production and labor costs in a single view.

The ERP system, being a complex system, manages not only accounting data, but also contains the information about the workload of employees in the system (phone time, chat time, time spent preparing graphic products and writing texts). ERP is able to separate the costs of a specific marketing campaign from the total advertising costs, form the cost of each lead and categorize the leads.

The "Symphony" ERP instantly generate a report on fast-selling products as part of a marketing campaign, evaluate the current effectiveness of promotion tactics and evaluate the response of the target audience (leads). This functionality allows to make changes in real time during the execution of a marketing campaign, which allows to increase the final effectiveness of such a campaign.

4.8. Insights

The first and most important insight for the "BRAVO MOTORS" was that based on sales data and inquiries, employees revealed that the company could potentially abandon multi-brand in favor of servicing VAG brands, namely VW, Skoda, Seat, Audi without sacrificing sales volume. This step allowed the company to get rid of multi-brand non-liquid assets, sales of which could not be predicted in favor of stocks of VAG vehicles spare parts. Considering the fact that cars of these brands are built on common platforms, stocks have also sharply increased their liquidity. It was possible to sell some of the unnecessary equipment and purchase more specific and new equipment, which allowed expanding the range of services.

The next insight showed that the company could refuse to service and repair cars older than 20 years. This made it possible to sharply increase the quality of repairs due to the greater residual resource of the cars that came to the service.

Through the analysis of large data sets of the ERP system, company employees can gain valuable insights about the behavior and needs of customers.

As a result of the analysis of sales data, the marketing department of "BRAVO MOTORS" found out that women are more inclined to purchase car care cosmetics and content related to products in this category attracts more attention from women, while men show a low level of interest, both in the products of this category, and in its advertising.

In analyzing ERP sales calendars, "Symphony" produced 2 unusual wave forecasts for the automotive battery category. Most of the peak sales are in November and December, however, since in July and August potential customers make long overseas trips, and average temperatures are quite high, which, along with low temperatures, is a critical factor for battery performance, the program issued a recommendation to the promotion of this category of goods. As a result of the advertising campaign, "BRAVO MOTORS" managed to increase its sales in the goods category 2.5-fold.

After analyzing the history of car repairs of regular customers in terms of car age and mileage, the system made a repair forecast for cars of new customers. This made it possible to predict the budget for corporate clients for the year, and allowed the company to plan future repairs, thus securing work and sales.

5. Conclusions

ERP and marketing are a powerful and profitable combination. Modern marketers work best when they collaborate with others. To keep up with an astute and evolving audience, it is essential to know as much as possible about the company's own products, customers, and desired target audience.

When ERP and marketing work together, employees get a holistic picture, and quick access to data allows them to act and adjust strategies in accordance with the current situation. Thus, at the disposal of the business there are tools that can fully optimize marketing campaigns, attract key buyers, new customers and develop their own brand.

The "Symphony" ERP system has been implemented in the above enterprises quite successfully due to the fact that this solution is specific and was developed from the very beginning for the auto service business. An important factor that had a positive impact was that the main processes at the considered enterprises were already well formalized and, during the implementation of the system, were finalized to a common model acceptable to all participants in the implementation. The implementation team was able to motivate company employees to participate in the project and learn new features and standards.

Another important factor that positively influenced the successful implementation of such a large system was that the developer of this program was the head of one of the above mentioned companies, who actively promoted the implementation, constantly visited partners and conducted training. Such an implementation would have probably not been possible without a person who would know this type of business from the inside,

However, it is important to understand that the implementation of such complicated and multifaceted information systems is most often associated with serious barriers due to resistance to implementation by the employees of the customer's company; errors in preparation for implementation (uncertainty of goals, uncertainty of criteria for evaluating the effectiveness and depth of implementation); incomplete and changing system requirements; the orientation of the system design (bottom-up), when information is generated that meets the needs of lower-level employees and there is a lack of information for making managerial decisions; design without considering development; randomness

and low level of formalization of business processes, the presence of non-obvious and ambiguous processes.

The level of telecommunications development in general and high-speed Internet coverage, in particular, is quite high in the Republic of Moldova. There is a developed information infrastructure and there is access to modern universal and specific systems, but such integrated solutions as ERP systems are rarely used by SMEs. This is due to the high requirements for the staff and management qualification of enterprises, as well as the high cost of software and hardware components associated with the implementation of an ERP system. Due to such limitations, serious complex software solutions are available mostly to large companies that have sufficient financial and human resources, being rarely used by SMEs.

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