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POSSIBILITIES OF IMPLEMENTING THE ACTIVITY-BASED COSTING CONCEPT IN MANUFACTURING COMPANIES: CASE STUDIES

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Abstract: *Management in modern business conditions requires accurate and timely information about process and activity costs, product costs, and other cost objects. The emergence of activity-based costing (ABC) addresses such demands. Activity-based costing and activity-based budgeting are seen as pillars of an efficient process for implementing business strategies. This paper examines the prevalence and challenges of implementing modern cost accounting and management systems, with a particular focus on the ABC method, in enterprises in the Republic of Srpska. The aim of the research is to present costing approaches using case studies of large companies in the Republic of Srpska, as well as to identify the challenges of implementing the ABC system, and ultimately to propose a solution for implementing the ABC approach. The research findings provide insights into current cost management practices in the Republic of Srpska and highlight opportunities for further advancements through the adoption of innovative approaches. The paper concludes with a proposed solution for implementing the ABC method in one of the enterprises from the multiple case study, which is demonstrated using a specific example of their products.*

Key words: *ABC model, cost accounting systems, cost management, business strategy, case study.*

JEL classification*: M41, M11, D24*

1. INTRODUCTION

In the context of the rapidly evolving global economy, characterized by shifting power dynamics and the emergence of multiple economic centers, the need for businesses to adapt their strategies and optimize resource allocation becomes crucial. The concept of a multipolar world, where several regional and global powers influence economic decisions, presents both opportunities and challenges for companies operating across borders. To navigate this complex environment, businesses require sophisticated and accurate tools for cost management, such as Activity-Based Costing (ABC), which allows for more precise cost allocation in the face of growing global competition and diversification of markets.

In this research involved analyzing cost accounting systems in selected enterprises by means of case studies. The primary selection criteria for these enterprises were: being classified as large enterprises (with over 250 employees), operating as manufacturing companies across different industries, and having a long-standing market presence. A case study is a research method used in various disciplines, including business, social sciences, medicine, and education. This method involves an in-depth examination of a specific case or situation to better understand the processes, factors, or phenomena involved. Case studies typically analyze real-life situations, problems, or events to draw relevant conclusions or recommendations for future actions or research.

Robert K. Yin (2009) defines a case study as a research strategy that focuses on understanding complex phenomena within their real-life context. According to Yin, a case study involves a detailed, systematic, and thorough analysis of a single or multiple cases to gain a deeper understanding of the issues, processes, or phenomena under investigation. This approach allows researchers to explore specific situations in their natural setting, taking into account a wide range of factors and contexts. Case studies usually include the collection and analysis of various data types, such as interviews, documents, observations, and other relevant sources. This methodology enables researchers to provide deeper insights and draw conclusions about complex phenomena or problems under study.

According to Creswell (2002), the minimum sample size for a multiple-case study should range between three and five cases. Following this recommendation, three enterprises from different industries were selected for this research:

- Company A – a company specializing in the production and processing of wood products;
- Company B – a company engaged in the production and maintenance of turbojet engines;
- Company C – a company producing prefabricated houses and other products made from cork, straw, and similar products.

2. CHALLENGES OF THE MODERN BUSINESS ENVIRONMENT AND THE SCOPE OF INFORMATION SUPPORT FOR COST ACCOUNTING

The emergence of cost accounting dates back to the 14th century, and such initial forms of cost accounting were called rudimentary forms. Such forms developed together with the development of production and the ever-increasing needs of entrepreneurs for records of incurred costs, all with the aim of making important business decisions. Such initial forms of cost accounting included only direct costs, and they developed gradually over the centuries, until the sudden development of science, technique and technology, the abandonment of craft jobs and the strengthening of competition.

At that moment, the general expenses, which until then were negligible, grow at a high speed and on a large scale. Thus, in the 19th century, many faced the problem of calculating and analyzing general costs. At the end of the 19th century, it was accepted as one of the alternatives for solving that problem, which is the allocation of general costs according to time, i.e. time allocation.

However, business conditions continued to be increasingly complex. The focus was on achieving the best possible financial result, so there was a need to compile cost price calculations. Proceeding from such a need, the previously accepted time allocation of general costs is abandoned and the allocation of general costs by subject is introduced (Gajić, 2007).

According to the author Gajić (2007), management accounting represents the generation and presentation of data and information for making business decisions. Cost accounting appears as the basic and oldest part of management accounting.

Traditional product costing methods often focus on directly related manufacturing costs, such as materials, labor, and factory overhead. However, in today's business environment, the overall costs of support activities for the production and sales process are increasing significantly. These costs include a wide range of functions and activities, such as engineering, product launch, maintenance, human resource management, information technology, marketing, distribution, and more.

Globalization, technological progress and the information revolution have led to increasing volatility in the business environment, which requires constant adaptation of management. In order to successfully cope with these changes, companies must constantly look for new methods of conducting business activities. These changes also affect the organizational structure and product manufacturing processes.

All this leads to shorter product life cycles and changes in the cost structure, which requires effective cost management in order for the company to remain competitive. Corporate goals play a key role in guiding strategy and decisions, representing a trade-off between the various interests of stakeholders. Many organizations around the world have faced a new business environment, which certainly concerns both accounting and cost management. Such a new environment in business is characterized by a focus on the customer.

Value chain and supply chain analysis is also one of the key topics, and by using value chain and activity cost information, it enables organizations to gain and maintain a competitive advantage in the market. The supply chain involves the involvement of several organizations, which are aimed at connecting producers and end consumers. Today, costs, quality, time and innovation are the key factors of business success (Jablan Stefanović, 2014). Recently, the importance of relevant information, both financial and non-financial, related to environmental protection has been emphasized. Environmental costs are high in many

industrial sectors, and regulatory requirements have tightened significantly over the past decade. Companies are under pressure to improve their environmental practices. Reporting these costs provides an opportunity to reduce them, through redesigning processes and reducing the use of hazardous materials. Also, it is necessary to prepare reports on environmental protection costs for periodic reporting, using a similar classification as in the analysis of total quality costs.

Companies must improve techniques for identifying and tracking environmental costs in order to understand the effects of product returns on these costs. The concept of Take-Back Costing (TBC) emerged to address these costs. In JIT production systems, although interest in tracking costs for inventory valuation is declining, product cost data is still needed for decision making and reporting.

Therefore, a simplified Backflush Costing (BFC) approach was developed, which allows for the allocation of daily production costs to inventory and cost of goods sold. Based on the above, starting from the shortcomings of traditional approaches, including global changes in the market and changes in the interests of companies, new approaches to calculation and cost management are required. New approaches began to develop in the last decades of the 20th century.

The most common modern approaches to calculation and cost management are (Jablan Stefanović, 2014; Knežević, 2016):

1. **Activity Based Costing (ABC)** focuses on identifying activities in the organization and assigning costs to each activity based on its actual impact on products or services. This method provides a more detailed insight into the actual costs of production or service provision. Activity costing provides the basis of information for monitoring and managing one of the key sources of competitive advantage, namely low costs. This method enables continuous monitoring of business processes and elimination of unnecessary resource consumption. ABC has been applied in modern companies since the late eighties and early nineties of the last century, enabling more precise determination of production costs. With the ABC approach, the allocation is made based on the output measures of the receiving activity, and these costs of the receiving activity can be caused by the number of parts received, etc. In fact, ABC takes a more detailed approach to cost allocation, identifying activities that drive costs and allocating them accordingly.

Figure 1. Structure of the ABC approach

Source: Drury, C. (1996), str. 392.

2. **JIT and Backflush costing** - Just in time (JIT) procurement and production concept stems from the management's need for more efficient inventory management and it is assumed that the flow of materials as well as the production process take place without interruption. The application of the JIT system requires highly efficient coordination of procurement, production and marketing. With the introduction of the JIT system, it is considered where it would be desirable to introduce automation, so the literature mentions: computer-numerically controlled (CNC) machines, flexible production system (FMS) with the use of robots and other automated equipment under computer control, and finally the computer integrated production system (CIM). In JIT production systems, interest in tracking costs for inventory valuation purposes declines. Given that there is still management interest in product costs for decision-making purposes, a simpler approach to calculating the movement of production costs, Backflush Costing, has been developed (Jablan Stefanović, 2014).
3. **Total Quality Costing (TQC)** - represents a methodology that focuses on the identification, measurement and management of costs that are directly or indirectly related to the quality of products or services. This methodology is used to ensure that quality is implemented in all stages of the business process. TQC includes the costs of prevention, evaluation and internal non-conformities, as well as the costs of external non-conformities and recoveries. The goal is to reduce total quality costs through systematic process improvement and elimination of defects. TQC relies on activities such as cause and effect analysis, continuous improvement management, and the involvement of all levels of the organization in achieving high levels of quality. Quality costs refer to: prevention (costs that arise in order to

prevent errors and relate to the creation of high-quality products), detection (costs that arise in order to detect qualitative defects in products and relate to various inspections, as well as testing of input materials, products during and after production, and feedback from consumers or customers in the domain of product quality), internal failure (costs that arise during production and concern waste, damaged products, loss of working time due to lack of materials or raw materials, etc.) and external failure (costs incurred after the sale of the product, concerning various repairs, replacements, court cases, etc.)

4. **Target Costing (TC)** - It originated in Japan in the 70s of the 20th century. The basic idea is to set a target price for a product or service based on market expectations and demand, then adjust the design, production process, and costs to meet that target price while making the desired profit. TC is applied in the early stages of product development, where design and production costs are planned in a way that allows the target price to be achieved. Management is carried out continuously, adjusting processes and costs in order to maintain competitiveness in the market. This strategy involves the integration of various functions within an organization in order to achieve cost and quality objectives for products or services. Target costs are obtained by subtracting the target profit from the target sales price, and analytically, the product prices that customers are willing to pay for a product of appropriate quality, design, lead time and after-sales service are obtained. In order to successfully implement this approach in the company, it is necessary to create a team organizational structure, which requires experts from different functional areas of the company, as well as other organizations with which the company cooperates.
5. **Calculation and management of life cycle costs - Life Cycle Costing (LCC)** - this approach is a continuation of the TC tool. a methodology that takes into account all costs that occur during the entire life cycle of a product or project, from the idea until its removal from production and withdrawal from the market. Specifically including all costs from acquisition, use, maintenance and disposal. This analysis enables organizations to make informed investment decisions, properly assessing all costs throughout the life of a product or project. The goal of LCC is to minimize total life cycle costs, which may include investing in better quality products or technologies that have lower maintenance costs or higher energy efficiency. This approach is important in industry, especially in areas where maintenance and exploitation costs are significant factors for the economic viability of a product or project. Thus, in LCCM the focus is on cost reduction, not cost control.
6. **Value Chain Analysis (VCA)** - This concept represents the broadest approach to management, and involves monitoring the relationship between activities that create value with the aim of reducing costs, with the overall problem of monitoring, measuring, analyzing and managing costs spreading beyond the company's borders. VCA actually implies the identification of those internal and external connections that result in the establishment of a sustainable position on the market. Management of organizational and operational cost drivers is an important input to VCA, with the goal being to control cost drivers better than the competition.
7. **Lean Manufacturing and Value Stream Accounting (LM)** – Lean manufacturing evolved from the Toyota Production System. LM is an approach that focuses on meeting customer needs through process optimization to produce a high-quality product at an acceptable price and within a given time frame. Lean philosophy promotes cost reduction, elimination of all forms of waste and continuous improvement of quality and speed of response to customer requests. The introduction of the key principles of the Lean concept in the company can be achieved through the use of various tools and techniques such as cellular production, total productivity maintenance, pull/kanban systems, value stream mapping, fast switching, workplace organization, production preparation processes, Kaizen and Lean Six Sigma. A value stream map is a key tool used to identify unnecessary activities in a business process, enabling companies to identify and eliminate redundant transactions to ensure quality information. Lean accounting, or Lean Accounting (LA), focuses on monitoring and calculating the costs of the value stream instead of the traditional view of costs by products, departments or activities. The main goal of LA is to establish a performance measurement system that motivates lean behavior and encourages continuous lean improvements, identification of financial benefits of lean improvements and establishment of a strategy for their continuous increase, implementation of more adequate ways of monitoring and calculating product costs and value stream costs, elimination of all forms of wastage in accounting and redirection of the time of finance employees to work on lean improvements. Information about defined

value streams in the company should be available at all organizational levels in order to achieve perfect harmony in the overall business process, which is the main goal of LA. Since the lean manufacturing philosophy emphasizes the complete elimination of all forms of waste, especially inventory, relevant cost information is vital to successful value stream management. In this context, the role of cost accounting is changing within the new accounting system in order to track the costs of activities and processes in existing flows. The goal of cost accounting is to enable a complete understanding of costs through the value chain and more precisely allocate costs for objects whose profitability is measured, such as products, activities, customers, distribution channels or specific organizational segments of the company (Jablan Stefanović, 2014; Knežević, 2016; Novičević Čečević, 2016).

Lean accounting was developed to best reflect the business performance of companies that implement lean manufacturing. It uses a new way of measuring and evaluating business performance, requiring the collection of cost data at the "value stream" level, changing inventory valuation methods, and modifying financial reporting systems to include non-financial performance (Brosnahan, 2008).

ABC models are widely used in both academia and practice for effective cost management and big data analytics. Building on cost management and deep learning (DL) theories, authors Bodendorf and Franke (2024) develop a multilayer perceptron (MLP) optimized with a nested particle swarm optimization (PSO) algorithm to enable self-controlled architecture and weight optimization. This innovative approach enhances ABC modeling by improving prediction accuracy.

The relationship between ABC and innovation management is crucial in today's dynamic environment, where continuous change and collaboration drive value creation. Open innovation encourages external collaboration and knowledge-sharing, enhancing cost management and efficiency. ABC helps allocate costs more precisely, supporting process improvements and strategic decision-making. Studies highlight that firms adopting open innovation benefit from improved financial performance, market expansion, and increased competitiveness. By integrating ABC with open innovation principles, organizations can optimize internal and external resources, reduce innovation costs, and enhance long-term sustainability in a rapidly evolving business landscape (Quesado & Silva, 2021).

The authors Okpe, Echobu and Abu (2024) evaluates the adoption of Activity-Based Costing (ABC) in selected foam and mattress companies in Kaduna State, Nigeria. It examines the extent to which these companies implement ABC, the challenges they face, and the benefits they derive. The research highlights that while ABC provides more accurate cost allocation and enhances decision-making, its adoption is limited due to factors such as high implementation costs, lack of technical expertise, and resistance to change. The findings suggest that companies could improve cost efficiency and profitability by overcoming these barriers and embracing ABC more widely.

3. FUNCTIONING OF COST CALCULATION IN SELECTED COMPANIES - CASE STUDIES

This studies examines the cost calculation methods used in three selected companies operating in different industries. Each company applies a distinct cost accounting approach tailored to its production processes, organizational structure, and strategic goals.

Company A

The company was founded in 2001. Its main activity is the processing and production of wood products for the construction industry. The greatest emphasis is placed on the production of massive laminated panels, construction carpentry (windows, balcony doors, shutters, window assemblies, boat floor, paneling and timber, all types of entrance and room doors, three-layer lamella elements and multi-layer lamella panels for the needs of construction carpentry) and other carpentry products that are characterized by a high degree of quality. The quality of the product guarantees a high level of export to Western European countries. The products are made from the highest quality wood, which is assembled into the highest quality wooden elements using a special method of separation. Production takes place in plants: plant for primary processing, plant for the production of laminated elements, plant for the production of construction carpentry and automatic dryers. In the company that is the subject of the first case study, there are a total of nine main processes and six auxiliary or support processes, i.e. the main processes are: marketing and sales process, production planning and preparation process, primary wood processing process, hydrothermal treatment, production of laminated panels, process production of construction carpentry, the process of storage and packaging, shipping and distribution and the assembly process. Auxiliary processes have also been established: ensuring and improving QMS, finance and bookkeeping, general and legal affairs,

maintenance, control and logistics. Criteria and methodology have been defined for each process, which ensure smooth execution of each process. Auxiliary processes enable the smooth functioning of the main processes. The decision to implement and meet the requirements of the ISO 9001:2008 standard is the desire and commitment of this organization in order to increase the satisfaction of customers and service users, employees and the continuous progress of the entire system.

Table 1. Example of cost price calculation of product X in company A

BASIC MATERIAL

	MATERIAL	Unit of measure	Quantity according to net measures	Increasing %	Increasing	Increased amount of technical waste %	Normative for calculation and planning	Price of materials (KM / JM)	TOTAL (KM)
1	Table top - Oak D/L A/B rustic	m³	0,03150	8,0	0,0340	3	0,0350	4283,00	150,079
2	Top and bottom plate - Oak D/L A/B rustic	m³	0,02240	8,0	0,0242	3	0,0249	3697,00	92,121
3	Side pages - Oak D/L A/B rustic	m³	0,00826	8,0	0,0089	3	0,0092	3697,00	33,970
4	Middle pages - Oak D/L A/B rustic	m³	0,00402	8,0	0,0043	3	0,0045	3697,00	16,548
5	Shelf - Oak D/L A/B rustic	m³	0,00449	8,0	0,0048	3	0,0050	3697,00	18,461
6	Front drawer - Oak D/L A/B rustic	m³	0,00858	8,0	0,0093	3	0,0095	3697,00	35,299
7	Drawer sides - Oak D/L A/B rustic	m³	0,00306	8,0	0,0033	3	0,0034	4350,00	14,807
8	The back part of the drawer - Oak D/L A/B rustic	m³	0,00335	8,0	0,0036	3	0,0037	4350,00	16,214
9	MDF for ships	m³	0,00774	8,0	0,0084	3	0,0086	1246,00	10,722
10	Veneer	m³	1,93392	9,0	2,1080	3	2,1712	12,00	26,055
11	Chipboard for the floor of the drawers	m³	0,78750	8,0	0,8505	3	0,8760	3,45	3,022
12	Hardboard for packaging	m³	0,14700	8,0	0,1588	3	0,1635	3,45	0,564
I						Total basic material:			417,862
II						Total paints, varnishes, thinners and glues:			14,783
III						Total fittings:			85,140
IV						Total grinding and auxiliary material:			7,875

PACKAGING MATERIAL

	MATERIAL	Unit of measure	Quantity per product	Increased amount of waste	Cost per product (pcs)	Price of materials (KM)	TOTAL (KM)
1	Guarantee certificate / employee code	pcs	2,000	2%	2,0	0,10	0,204
2	Box label	pcs	16,000	2%	16,3	0,10	1,632
3	Self-adhesive sticker	pcs	4,000	2%	4,1	0,33	1,357
4	Installation instructions	pcs	1,000	2%	1,0	0,60	0,612
5	Styrofoam 50 mm	m³	0,000	2%	0,0	90,00	0,000
6	Styrofoam 30 mm	m³	0,006	2%	0,006120	74,00	0,453
7	Styrofoam 20 mm	m³	0,000	2%	0,000000	74,00	0,000
8	Styrofoam 10 mm	m³	0,045	2%	0,045900	94,00	4,315
9	FILC / Retex	m²	7,210	2%	7,4	0,13	0,956
12	Duct tape	pcs	0,100	2%	0,1	1,30	0,133
15	Pallet EURO - disposable	pcs	0,406	2%	0,41438	98,00	40,609
17	Carton / table top box	pcs	1,000	2%	1,02000	8,72	8,894
18	Carton / chest of drawers	pcs	1,000	2%	1,02000	12,40	12,648
V						Total packaging:	71,812
VI	**TOTAL MATERIAL (KM)**						597,472
VII	**Labor costs - the number of working hours of workers in the norm (h)**						7,980
VIII	**Labor costs - The value of hourly norms for the operation of furniture NS 17.7 (KM / h)**						17,700
IX	**TOTAL LABOR COSTS**						141,246
X	**COST PRICE (KM):**						**738,718**

Source: Authors according to the company report

The management of the company acts and makes decisions at two levels: close management - top management (company director, deputy director, technical director and head of technical preparation and development) and wider management - middle management (commercial manager, head of finance and bookkeeping who is also the representative of the management for quality, the production manager who is also the manager of the sawmill, the manager of the production of laminated panels and the manager of construction carpentry). The company is managed in accordance with the set annual goals and the defined quality policy, and according to defined annual and monthly plans, so that the quality management system is permanently improved. The annual goals are set by the company's management and confirmed by the director. Goals are set on the basis of the quality policy, management review and the previous year's business results, and plans are drawn up on the basis of the set goals and business results in the previous period.

The management informs all employees about the importance of meeting customer requirements, technical regulations for production and the realization of set goals. The focus on the customer is crucial for any company that is process-oriented. The company's management ensured that the customer's requirements were met at all stages of the business process. Below is an overview of the cost price calculation specifically for product X of company A.

As for indirect costs, they are often grouped as general costs and include costs such as administrative costs, maintenance costs, rental costs, etc. However, company A does not calculate indirect costs in the cost price of the product, according to the principle that the ABC system of costing requires, namely that indirect costs are first transferred to defined activities, for which costs are planned and monitored, and then indirect costs are transferred from activities to bearers of costs and results.

All necessary activities that are carried out in the production process are listed in the work order. The production process is carried out according to the procedures 01 Procedure for initial processing, 02 Procedure for the production of laminated panels and 03 Procedure for the production of construction carpentry.

The process begins with cutting the logs in order to obtain a quality board for further processing. The board is arranged according to size and prepared for hydrothermal treatment. In the drying process, complex sawn timber is placed in dryers. After the drying process, the sawn timber is stored and awaits final processing. The final products are delivered to the packaging operations. The packaging of the final finished products is done in polyethylene thermal foil to ensure that the customer receives products that will be fully protected from various weather conditions. The efficiency of the process is measured by the degree of utilization of logs and sawn timber, the amount of waste and the consumption of working hours.

The drying plants are supported by special software that guarantees that the set input parameters are checked to always give the required characteristics of the product or semi-product. The entire drying process according to the work order is recorded by the person in charge, while the control of the product at the exit, before final processing, is checked by the Head of Technical Preparation and Development. The quality of the final products is ensured during packaging, storage, shipping and distribution of the product to its intended destination. In company

A, there are several types of storage: log storage, then storage of sawn timber before drying, storage of dry sawn timber until final processing, and storage of finished products until final shipment to the customer. Proper records are kept at all stages of storage. Process performance is monitored and measured to ensure timeliness, reliability, employee reaction time to special internal and external requests, time cycle, degree of utilization of installed production capacities and cost reduction. The managers of the process record the resulting non-conformities, and the degree of success of the process is measured by reducing the number of non-conformities.

Company B

Since its foundation in 1944, company B has gone through all stages in the development of its primary activity – the overhaul of aircraft engines, and today it is a highly organized system with the most modern equipment and a strong human resources potential for the production and overhaul of turbojet engines of all types.

The company's management consists of the director, the executive director for economic affairs, the executive director for technical affairs, the executive director for quality and laboratories and the executive director for general and legal affairs. Company B is a joint-stock company that employs about 400 people. The cost accounting method in company B is defined by the pricing strategy. Therefore, the company has the following elements of cost price calculation:

Direct labor*number of working hours + Costs of direct manufacturing materials + Costs of reserved

parts + Services of subcontractors + allocated standard general costs of production (costs of depreciation, electricity, lighting, water, etc.).

Cost allocation refers to the allocation of indirect costs. Other costs can be included in the cost price, provided that they are directly caused by the production of the product, that is, that they can be directly related to the given product. For example, design and development costs may be included in the cost price for individual orders.

Costs related to non-standard consumption of raw materials or costs caused by other unplanned disruptions of production or other processes, storage costs, as well as general administration costs and general sales costs cannot be included in the cost price. In company B, it is common for general management costs, general sales costs and costs of other overhead units to be covered from the company's profit, but for the purposes of this strategy, in order to reach the minimum cost of an effective working hour, this rule was deviated from and allocated to the cost are all the costs of the overhead units of company B.

Therefore, the minimum labor price already includes the profit to cover the costs of the overhead units. The minimum price of an effective working hour includes: direct labor costs of the cost bearer - production work, allocated overhead (indirect) labor costs within the sector, allocated indirect labor costs of other non-production overhead units, direct and allocated overhead acquisition costs and depreciation. Company B is striving to implement the ABC system of accounting and cost management, but from the interview with the finance director, we conclude that it has not fully implemented that system. As far as direct and indirect costs are concerned, the company does not allocate them by organizational units.

Company C

Company C appears on the national and global market of prefabricated and wooden buildings in a completely new light of modern construction. It has more than 20 years of experience in construction, as well as thousands of built buildings around the world.

Company C employs hundreds of educated and highly qualified experts from all spheres of assembly and rapid construction. The current design, production and assembly capacity is approximately 200m2 of buildings per day, which is one of the largest capacities in the region. In addition to the Republic of Srpska, company C markets its products from several regional centers: Austria, Slovenia, Switzerland, Sweden, France, as well as in some countries in Africa. Company C cites thousands of satisfied customers as a major success. Better living today means not only a comfortable and pleasant stay at home, but also a comprehensive and responsible approach to the environment in which we live. Ecological and high-quality materials, the application of the latest technologies, a highly skilled and motivated team of professionals, aesthetics and functionality with strict respect for deadlines and customer wishes are the basic principles when creating houses and other products of the company C.

At the head of the company are the owner and the founder and director of the company, and then the organizational structure consists of the general sales manager, the technical director, the head of the project team and the marketing manager. In addition, there are employees in the company's administration, accounting and other operational employees.

Company C calculates costs exclusively by project. Based on data from the company's accounting, the type of cost calculation used in this case is "Specific cost calculation by item" or "Specific identification of costs".

This method is used when costs are tracked and recorded directly by individual items or products, rather than by some broader categorization or grouping.

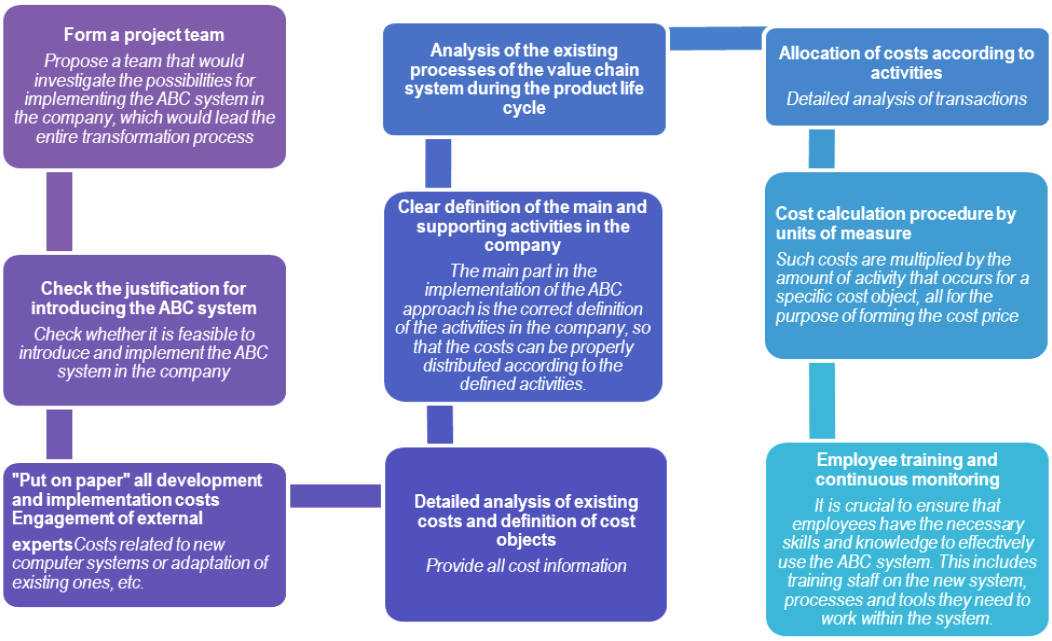
Each item in the inventory has its own unit of measure (UM), quantity, price per unit, and amount, suggesting that costs are clearly identified for each item individually. This approach allows accurate tracking of costs for each item, which can be useful in situations where costs need to be analyzed in detail or when each item is important to the final result or project.

4. PROPOSED SOLUTION FOR THE IMPLEMENTATION OF ABC SYSTEMS USING THE EXAMPLE OF COMPANY A

The introduction of activity costing (ABC system) requires careful planning and gradual steps to ensure successful implementation. After implementation, it is important to continuously monitor the performance of the ABC system and make the necessary changes and improvements in order to ensure its effectiveness and relevance in a changing business environment.

However, general costs up to 10% that cannot be precisely allocated to cost objects do not hinder the implementation and application of the ABC system. Accordingly, the authors of this research propose a solution that could serve as a guide for the introduction and implementation of the ABC system in business processes, using the example of company A

Figure 2. Solution proposal: Implementation of cost accounting by activity for company A, production of wooden dining tables



Source: Authors

For a company to be able to implement the ABC costing method at all, it is first necessary to determine which are the key activities in which costs arise. For example, these can be: material preparation, material processing machine preparation, product assembly and product quality control. After the identification of the key activities, the determination of the cause of the activity follows. So we have, for the preparation of materials, preparation of machines and assembly, the cause of activity is working hours, while for the processing of materials, machine hours are used. Finally, for product quality control, the number of finished product control reports is used as the cause of activity. The next step would be to include direct costs. The following will show the direct costs for the production of a dining table measuring 200 cm long and 90 cm wide. Let's assume that at the end of the accounting period (one month) 100 dining tables with dimensions of 200x90cm have been completed.

Table 2. Cost allocation proposal in company A

DIRECT COSTS (KM)		
Direct material costs		60.000
Direct labor costs		15.000
TOTAL DIRECT COSTS:		**75.000**
INDIRECT COSTS (KM)		
Amortization costs		17.000
Utility costs		3.000
Insurance costs		8.000
TOTAL INDIRECT COSTS:		**28.000**
Allocation of indirect resource costs by activity		
ACTIVITIES	**% SHARE**	**AMOUNT OF ALLOCATED COSTS**
Preparation of materials	18%	**5.040**
Processing of materials	22%	**6.160**
Machine preparation	17%	**4.760**
Montage	30%	**8.400**
Quality control	13%	**3.640**
TOTAL:	**100%**	**28.000**

Source: Authors

The total basis for the preparation of materials is 2 hours per table, which amounts to 200 hours for 100 tables. It takes 3 hours to assemble the structure of the dining table, which is a total of 300 working hours, while the preparation of the machines takes a total of 45 minutes for one, which is a total of 75 hours. A total of 150 machine hours are required to produce 100 dining tables. Control costs are equal, given that one table is controlled only once.

Table 3. Cost allocation in company A - costs by causes of activity

Activities	Amount of costs	**Causes of activity**	**Costs by causes of activity**
Preparation of materials	5.040	200 working hours	**25,2 KM/h**
Processing of materials	6.160	150 machine hours	**41,06 KM/h**
Machine preparation	4.760	75 working hours	**63,47 KM/h**
Montage	8.400	300 working hours	**28 KM/h**
Quality control	3.640	100 quality control reports	**36,4 KM/pcs**

Source: Authors

A similar construction of cost accounting would be for other products in the company, e.g. to also produce dining room products with dimensions of 140cm length and 80cm width, then we go ahead and assume that a total of 60 tables with dimensions of 200x90cm and 40 tables with dimensions of 140x80cm were produced.

Table 4. Cost allocation in company A - proposal for two types of products

ACTIVITIES	**Costs by causes of activity**	**200x90cm**		**140x80cm**	
		The level of the cause of the activity	**Costs**	**The level of the cause of the activity**	**Costs**
Preparation of materials	25,2 KM/h	100	2.520	100	2.520
Processing of materials	41,06 KM/h	100	4.106	50	2.053
Machine preparation	63,47 KM/h	40	2.540	35	2.221
Montage	28 KM/h	150	4.200	150	4.200
Quality control	36,4 KM/pcs	60	2.184	40	1.456
TOTAL:	-	-	**15.550**	-	**12.450**
DIRECT COSTS (KM)			**200X90cm**		**140X80cm**
Direct material costs			60.000		50.000
Direct labor costs			15.000		10.000
TOTAL DIRECT COSTS:			**75.000**		**60.000**

Source: Authors

Table 5. Cost price calculation

ACTIVITIES	**200x90cm**		**140x80cm**	
	60 units of product	**Per unit of product**	**40 units of product**	**Per unit of product**
Direct material costs	60.000	1000	30.000	750
Direct labor costs	15.000	250	10.000	250
Indirect costs	15.550	259	12.450	311
TOTAL:	**90.550**	**1.509**	**72.450**	**1.311**

Source: Authors

CONCLUSION

The implementation of an activity-based costing system represents a significant step towards improving the accuracy of accounting information and more efficient cost management in manufacturing companies. This method enables detailed analysis of activities, identification of cost drivers and optimization of resource allocation, thereby contributing to making informed managerial decisions.

Especially in the modern business environment, where competition is increasing and market

conditions are unpredictable, precise monitoring of costs and their proper distribution become key success factors.

Despite numerous advantages, the implementation of the ABC method can be complex and requires adequate management support, as well as the use of modern information systems that enable automatic data processing and analysis of cost structures. In this context, it is necessary to continuously improve accounting practices and adapt to market requirements in order to fully utilize the ABC system for business improvement.

Future research could focus on the empirical analysis of the impact of the ABC system on a company's financial performance, the relationship between the ABC method and digital transformation with artificial intelligence, as well as a comparative analysis with other modern cost accounting methods. Additionally, case studies across different economic sectors could help identify specific implementation characteristics of the ABC system, while research on challenges and barriers to its application could provide strategies for more successful integration of this model into contemporary business practices.

The research findings indicate that none of the companies analyzed in the case study have implemented the ABC system. The primary reason for this lies in the complexity of its implementation, the lack of necessary expertise among employees, and the perception that traditional costing methods are sufficient for their current operations. Additionally, companies often cite high implementation costs and the lack of management support as key barriers to adopting the ABC system. These findings highlight the need for raising awareness about the benefits of modern cost accounting methods and providing adequate training and support to facilitate the adoption of the ABC system in production enterprises.

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