



CASE STUDY: KPIS (KEY PERFORMANCE INDICATORS) IN THE CONTEXT OF A BALANCED SCORECARD AT THE LEVEL OF SMES (E.G. SMALL COMPANY THAT ACTIVATES IN THE FIELD OF PHYSICAL PRODUCTS)

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Abstract *This article aim is to create a model Balanced Scorecard and introduce new performance indicators that can be used at SMEs level that are dealing with physical products (e.g. commercialize of building materials). The findings will offer several insights to the strategies that SMEs are using through cross-selling products. The revenue streams will be analyzed and the profit margins will be uncovered. Performance indicators have specific characteristics to the physical products field and have distinct elements in their composition. Depending on the mission and objectives proposed, the development of the specific activities can be pursued. The article will create a basis for further studies regarding interconnectivity between performance indicators at the level of physical products businesses. By adjusting the key variables, a new strategy can be created to achieve high efficiency in the use of financial capital, human resources and other type of assets. The methodology used is a case-study approach. A Romanian based SME that is active in the field of commercialize of building materials is analyzed from a holistic point of view. The results show how a distinct approach can be used in monitoring an SME. We can extrapolate the findings toward businesses that are dealing with physical products, aiming to create a strategic management that would offer high efficiency in the use of financial capital, human resources and fixed assets.*

Key words:

Strategic Management, Balanced Scorecard, Key Performance Indicators (KPIs), Small and Medium Enterprises (SMEs), Physical products

JEL Codes:

**D24
G31
O15**

1. INTRODUCTION

Strategic management illustrates an overview of the enterprise that characterizes its direction and purpose. It analyzes the development of the enterprise to date and the way in which the long-term objectives can be achieved. Provides a framework for decision-making on key elements: leadership model; human capital; financial perspective; active; know-how; risks; location; competition; technology; products; market development; and so on. Strategic management

determines what an enterprise is able to achieve and what goals it cannot achieve. It establishes the type and way in which the enterprise produces added value and the form in which it is delivered to customers. It is the planning and decisions that will be taken in the medium and long term to achieve its objectives.

Performance indicators have the role of analyzing the internal entrepreneurial phenomenon and the external economic environment of the enterprise in order to provide relevant information to

management. They make it possible to diagnose the organization in order to regulate performance piloting. The balanced scorecard primarily provides a diagnosis of current activity and is an important tool in decision-making at management level.

The Balanced Scorecard serves to provide summary information on the company's business, thus providing an overview of the economic and financial elements. The Balanced Scorecard is an excellent tool for managing enterprise performance, illustrating in a simplified form key information on which management can make decisions.

The Balanced Scorecard is illustrated by performance indicators that can take absolute or relative values. Through them, the specific elements selected by the management level take a synoptic expression giving a detailed insight into the progress made at the company level. This explains in a rapid form the incidents that pose a danger to the achievement of the proposed objectives.

For the purpose of drawing up a scoreboard, the following must be met:

1. Objectives and Mission: The objectives quantify the mission goal to which the leadership model is directed. Objectives can take different forms, such as profitability, number of customers, costs, turnover, etc.
2. Establishing a plan to meet the objectives. For each objective, there must be a plan of measures that can be implemented.
3. Identification of representative indicators. It is necessary to quantify each objective through an indicator or set of indicators.
4. Balanced Scorecard formation in a simplified manner that can be easily tracked (charts, tables, performance rates, etc.).

Specific key performance indicators can be expressed in general terms under the following illustrations:

Table 1. **Examples of KPIs that can be illustrated in a graphic form**

Graphic form	Sales stream	Sales growth chart comparison
	Supply chain	Acquisition growth by supplier
	Inventory	Inventory chart development by group of articles
		Inventory chart development by store
		Share of inventory of each store by total
	Financial	Debt development chart
		Receivables development chart
	Accounting	Inventory growth by accounts
Inventory turnover by accounts		

Table 2. Examples of KPIs that can be illustrated in multi-dimensional tables

Multi-dimensional tables	Sales	Development of sales by subsidiary and clients
	Supply chain	Raw materials supplier growth
		Change of sales by products and supplier
	Inventories	Change of inventories by groups Change of inventories by subsidiaries
	Financial	Development of turnover Development of Expenses/Income Change of debts Change of receivables

2. PROPOSED KEY PERFORMANCE INDICATORS (KPIs)

After analyzing over 114 articles in the field of balanced scorecards, (Z. Hoque, 2012) finds that overall, the distribution of past studies indicates a heavy emphasis on the design, implementation and use aspects of the balanced scorecard. As he states, “future research might explore these aspects further in different contexts, there might also be increasing interest in linking these aspects with other organizational strategies or processes such as total quality management (Hoque, 2003), operations management (Kaplan, 2012), time-driven activity-based costing (Kaplan & Anderson, 2004, 2007), supply-chain relationships, IT, business-process-management, and value chain analysis.” With the exception of Cheng and Humphreys (2012) researchers have paid little attention to recent concepts around the balanced scorecard such as “strategy map”, “strategy execution”, and “total strategic alignment”.

Having this in mind, I propose a new set of KPIs that can be used in the field of physical products businesses:

Key performance indicators proposed for SMEs that are selling physical products:

- c. Value of cross-selling products vs total products;
- d. Product management time for each product compared to its profit;
- e. Surface area of the product occupied in the deposit related to profit;
- f. Purchasing frequency vs. profit;
- g. Risk of damage to the product;
- h. Frequency of monthly acquisition;
- i. Product-level profit;
- j. New Customer Recommendations / Total New Customers;
- k. Profit compared to storing space.

KPIs - example:

We assume that IDG's mission is to increase its market share to 7% next year. In

order to achieve this, a business diagnosis is needed to create an effective strategy.

I've decided to use the following performance indicators for the Balanced Scorecard to get the most insight into the business. Typically, with the help of specialized software, this analysis can be done in relative values, always having a basis for comparison. For the sake of simplicity, in the example below we will take abstraction from the

base of comparison and I will present as far as possible the absolute values and their relevance in a Balanced Scorecard:

2.1. Market share:

The market that the IDG company is activating is a relative small market. Here are the main competitors and the market share over a period of two years:

Figure 1. Market share (2014)

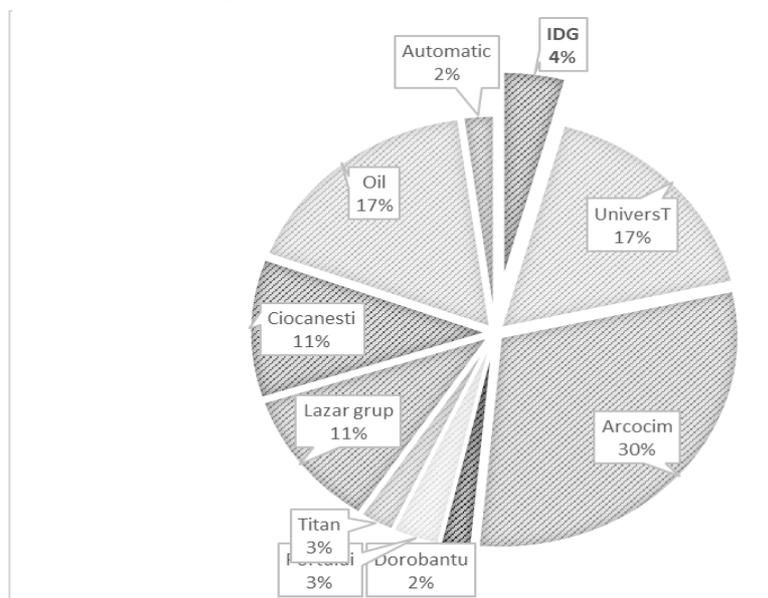
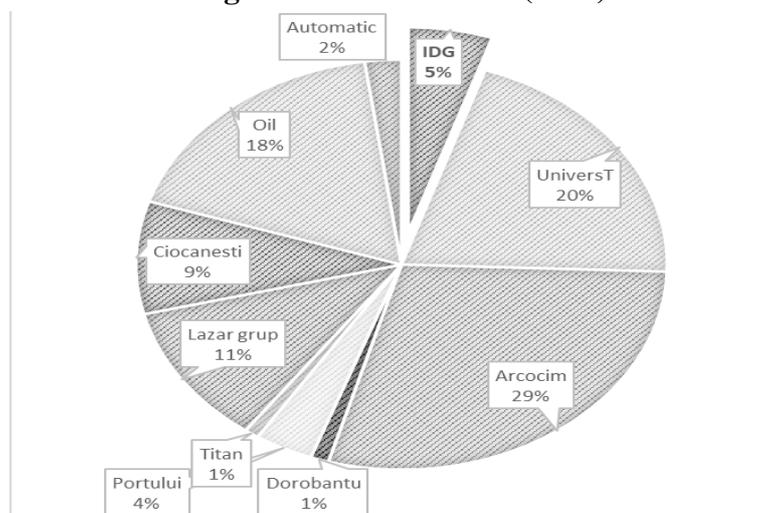


Figure 2. Market share (2015)



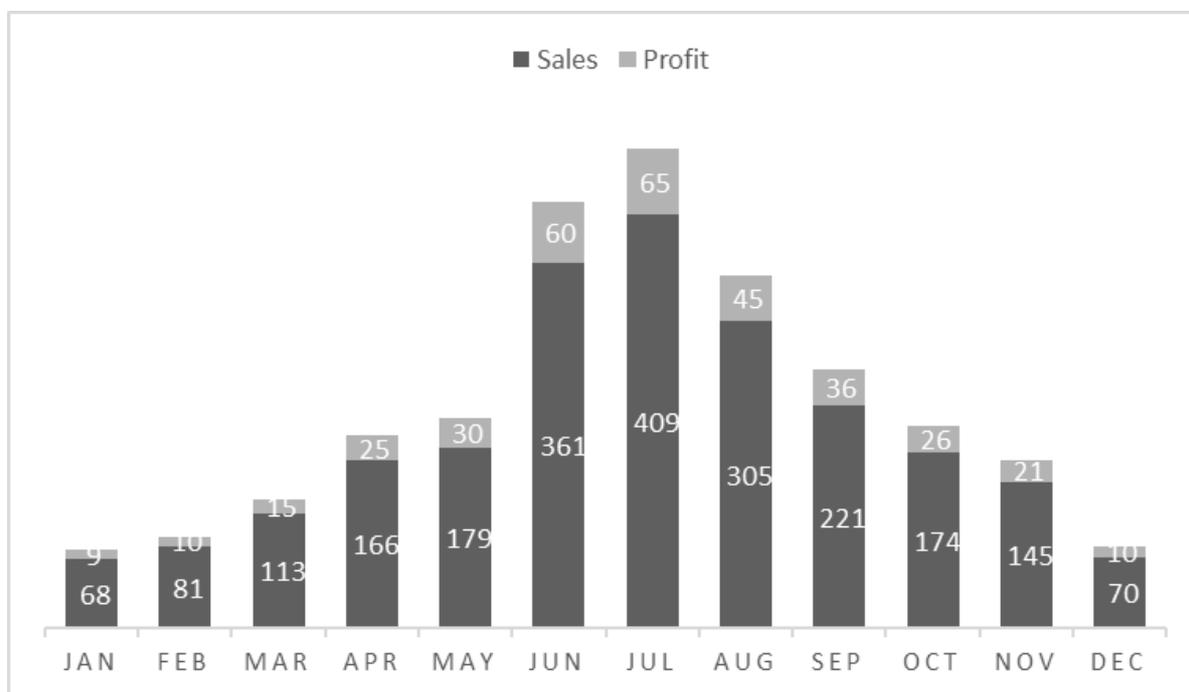
2.2. Seasonality of sales:

To give a broad insight into monthly earnings, we'll illustrate the value of sales (RON) per IDG company in 2016. (figure 3)

Sales seasonality is noticeable, with June, July and August accounting for 40% of total sales. This sales

chart may be representative of the construction materials industry. Due to variable sales, companies are forced to dispose of their resources in an efficient way. If a comparison is made between January (responsible for a sale of 68,000 RON) and July, (responsible for a sale of 409,000 RON) we can see a difference of 600% of the volume. This discrepancy makes it almost impossible to use resources efficiently.

Figure 3. Seasonality of sales compared to profit in thousands (2016)

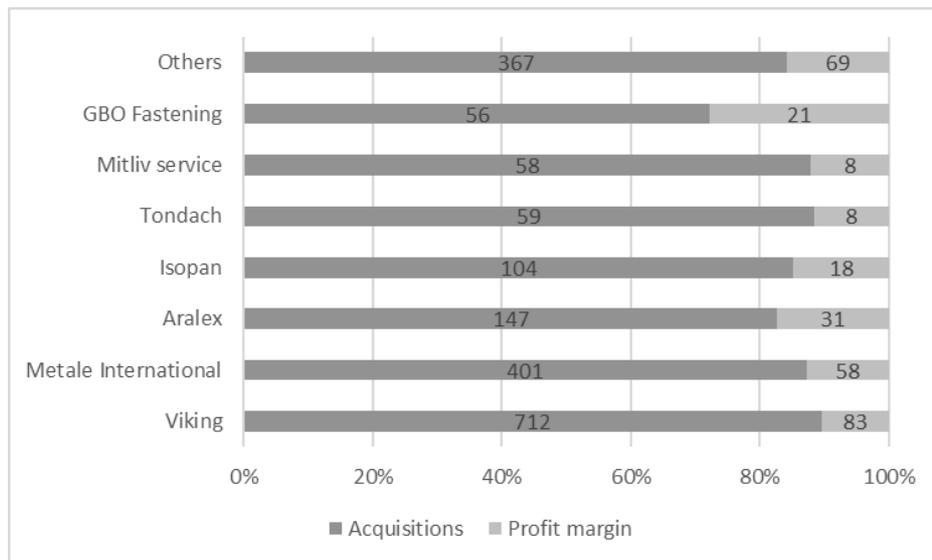


The main supplier is Viking, with a value of RON 557 thousands followed by Metale International with RON 311 thousands and Aralex with RON 112 thousands. The cross-selling product supplied by Viking and Metals is responsible for 60% of total purchases, while the remaining 40% are adjacent products.

2.3. Profit for individual suppliers:

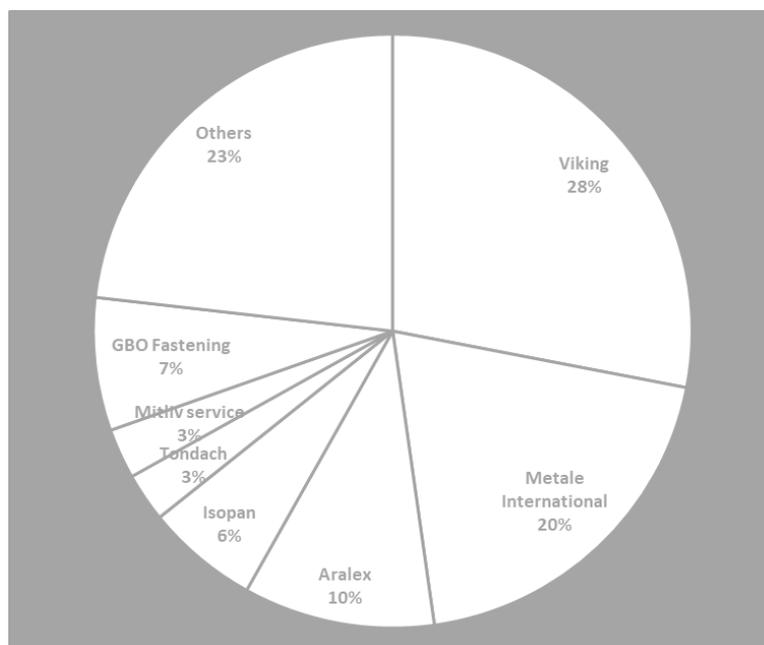
Although Viking is responsible for 38% of total purchases, when it comes to efficiency, it is only responsible for 28% of gross profit. On the opposite side, although GBO Fastening accounts for only 3% of total purchases, it shows a strong 7% of the gross profit out of total profit.

Figure 4. Acquisitions compared to profit for each supplier in thousands (2016)



2.4. Percentage of total profit for each supplier:

Figure 5. Percentage of profit out of total by supplier (2016)



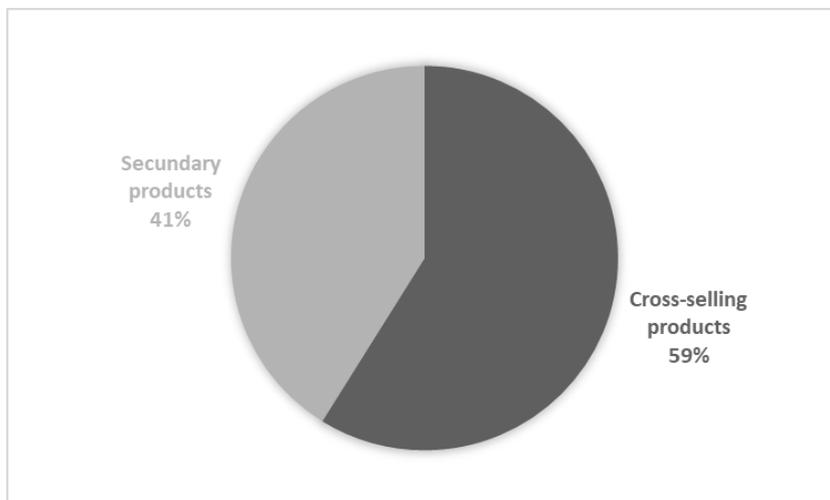
While the average margin applied in the sector is about 19%, a 38% profit margin is applied to the GBO provider. This is due to the comprised product (special screws). Since they are a by-product, customers do not show a price aversion (the price

is not significant in the purchase). This strategy is generally used by construction materials firms, often using very high margins for the secondary products, and can truly be a revenue stream that the company would not be able to do business without. A similar

case is the accessories of a roof (Aralex), with a 21% profit margin.

2.5. Weight of cross-selling product in total products:

Figure 6. Level of Cross-selling products sold compared with other products (2016)

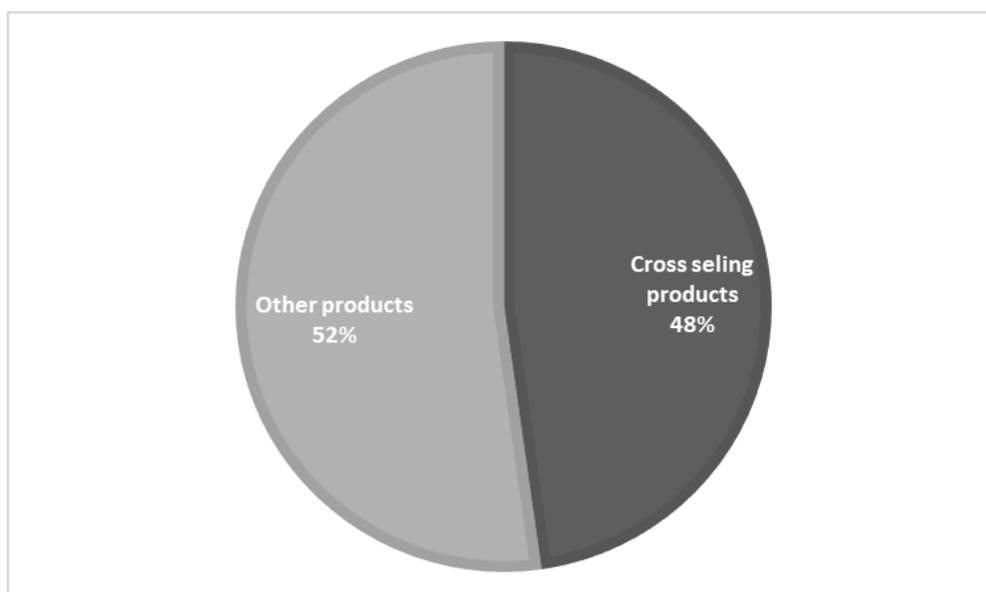


The company's main product is metal roofing. Cross-selling products are accessories, pluviat system and other adjacent products. Cross-selling product is responsible for 59% of total sales while secondary products account for 41% of total

sales. In other words, we can say that for 41% of the total sales value comes from the secondary products.

2.6. Share of cross-selling / secondary products:

Figure 7. Level of Cross-selling products profits compared with other products profits (2016)



Although the cross-selling product is responsible for a high sales value (59%), when we talk about the total profit in real values, the secondary products are responsible for more than half (52%) of the total profit. This is due to the high margin of the secondary products. While the cross-selling product has a lower margin (only 16%) in order to be

competitive on the market and attract customers, the secondary products have a margin of 25% as the customers are not so price sensitive.

2.7. Profit relative to the number of product management hours:

Figure 8. Hours required for managing the product compared to profit of the product (lower is better)

Profit/product		Hours/Year	Val.
Roofing metal	82,978	210	0.15
Fence metal	58,338	200	0.21
Accessories	30,591	230	0.45
Pannels	18,035	20	0.07
Ceramic Tiles	7,829	10	0.08
Metal tiles	8,067	80	0.60
Special screws	21,407	20	0.06
Other	68,573	350	0.31
Total	295,819	1120	

Hours / year - is the total number of hours spent managing each product.

Val . - represents the number of hours divided by the yearly profit for each year. The closer the value is to 0, the more profitable the product is in relation to the required management time.

From the graph above we can see that the most efficient products according to the management time are the Special screws, the pannel panel and the ceramic tile. At the opposite end, the product that requires a longer management time is the galvanized sheet.

2.8. Reported profit per product relative to the warehouse space occupied:

Figure 9. Space occupied by the product compared to profit of the product (higher is better)

	Profit/product	Space occupied	Profit/space
Roofing metal	82,978	20	4,149
Fence metal	58,338	60	972
Accessories	30,591	25	1,224
Pannels	18,035	1	18,035
Ceramic Tiles	7,829	1	7,829
Metal tiles	8,067	20	403
Special screws	21,407	3	7,136
Other	68,573	140	490
Total	295,819	270	1,096

Space occupied - represents the space in cubic meters occupied by the specific product.

Profit / space - represents the profit for each product in relation to its volume. The higher the value, the higher the efficiency of the product compared to the occupied space.

Since panels and ceramic tiles are delivered from the supplier directly to the customer, they do not require storage space at the company's headquarters. They have a higher profit compared to other products. The third place of efficiency in terms of space used is special screws. The most unprofitable in relation to the space used is metal tiles with a profit of only 403 RON per m³ occupied.

2.9. Inventory turnover, receivables:

$$\text{Inventory TO} = \frac{\text{Turnover}}{\text{Inventories}} = 4.23; \text{ Receivables (number of days)} = \frac{\text{Recivables}}{\text{Turnover}} \times 365 = 32$$

The stock rollout is 4.23. This is the fact that the company resold the amount of stocks it normally

holds 4.23 times. The higher the value, the better the company performs. The value of 4.23 is above the average of companies in this area.

Receipt of claims in number of days is the period the company needs to collect receivables from customers. The lower the value, the faster the company has liquidity. A short period for collecting receivables can be a major asset.

2.10. Acid test:

$$\frac{\text{Current assets} - \text{Inventories}}{\text{Current debts}} = 21.35$$

If the current liquidity value is greater than 1, it means that the company can pay all its debts in the home and bank. If the current liquidity takes very high values, then we can say that the company does not use its resources to its full potential. If the current liquidity value is close to 0, we can pull an alarm because the company cannot pay its current debts.

2.11. Share of personnel expenses relative to turnover:

$$\frac{\text{Personnel expenses}}{TO} = 4.6\%$$

We can claim that the share of the expenses with the employees represents 4.6% of the total turnover. If this value is less than the total profit margin, to a significant extent, then we can say that the employees have a high degree of efficiency.

2.12. Efficiency of employees (labor productivity):

$$\frac{TO}{\text{Nr. of employees}} = 460 \text{ thousand RON}$$

We can say that each employee is responsible for creating 460,000 RON / year added value.

2.13. Return on Assets:

$$\frac{EBIT}{\text{Assets}} = 13.8\%$$

With a total of 915,000 Ron assets, the company earned 126,000 Ron profit. Return on assets is 13.8%. Compared with the industry average (7%), the company has an efficient return.

2.14. Summary of KPIs:

- a. Market share;
- b. Seasonality of sales;
- c. Profit for individual suppliers;

- d. Percentage of total profit for each supplier;
- e. Weight of cross-selling product in total products;
- f. Share of cross-selling / secondary products;
- g. Profit relative to the number of product management hours;
- h. Reported profit per product relative to the warehouse space occupied;
- i. Inventory turnover, receivables;
- j. Acid test;
- k. Share of personnel expenses relative to turnover;
- l. Efficiency of employees;
- m. Return on assets.

3. CONCLUSIONS

The Balanced Scorecard primarily provides a diagnosis of current activity and is an important tool in decision-making at management level. Depending on the mission and objectives proposed, the development of the specific activity can be pursued. By adjusting the key variables, a new strategy can be created to achieve high efficiency in the use of financial, human and other resources.

The Balanced Scorecard serves to provide summary information on the company's business, thus providing an overview of the economic and financial elements. The Balanced Scorecard is an excellent tool for managing enterprise performance,

illustrating in a simplified form key information on which management can make decisions.

As a result, the following set of KPIs have been introduced for the help of physical product businesses:

- a. Value of cross-selling products vs total products;
- b. Product management time for each product compared to its profit;
- c. Surface area of the product occupied in the deposit related to profit;
- d. Purchasing frequency vs. profit;
- e. Risk of damage to the product;
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