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Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics
Düsternbrooker Weg 120
24105 Kiel (Germany)
E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)
<https://www.zbw.eu/econis-archiv/>

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Key Performance Indicators for SMEs in Producing Industry

Alfred Tieber

Doctoral School of Engineering and Management of Technological Systems, Politehnica University of Bucharest, Romania,
E-mail: erfolg@alfredtieber.com

Abstract *Key performance indicators (KPIs) have been playing a key role in managing enterprises in various economic sectors for several decades. Over the course of time, the number of indicators as well as their significance has risen sharply. This report presents the study results about the development of KPIs for SMEs in producing industry in German speaking region. It happened a field analysis concerning key indicators and key indicator systems, especially in the sales and marketing of producing industry. Targeted and useful key indicators were sought which, on the one hand, fulfill the order content for the relevant customer and, on the other hand, support suppliers and sub-suppliers in their own business management. The findings ascertained were then evaluated and critically examined in terms of the sustainable, internal applicability for suppliers and sub-suppliers in the manufacturing industry. A developed concept of streamlined, cost-effective and cross-sector key indicator management system for key sales and marketing indicators for the purpose of managing small and medium-sized enterprises of producing industry was prepared.*

Key words Key Indicators, Performance Measuring System, KPI models

JEL Codes: M21

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1. Introduction and Literature review

Key performance indicators have been playing an important role in managing enterprises in various economic sectors for several decades. Over the course of time, the number of indicators as well as their significance has risen sharply. The pioneers and driving force for this development came especially from the financial sector and manufacturing industry. This tremendous acceleration in the use of key indicators in all specific business processes also meant that the use of key indicators became increasingly relevant for their suppliers and sub-suppliers.

Based on the analysis of the actual state of the art on KPIs in producing industry the following literature review conclusions were found: Many different approaches to defining 'key indicators' and 'key indicator systems' can be found in the literature. However, during the literature review, it could not be clearly determined whether there is a standard valid definition of these terms which applies to all industries in general. In principle, it is evident that there is a wide range of different key indicators and highly specialised key indicator systems. Some of them are used across many sectors, whereas others are only applicable in one or few specific industries. Yet, there is a commonality among all PMSs and KPIs; they always pursue the aim of successfully placing the enterprise, corporation or business unit on the market strategically for the long term and they closely link the corporate strategy to the operational units in order to achieve this aim (Kaack, 2012).

Key financial indicators are always dominant. Besides the distinct strength of financially oriented key indicators, production-related, logistical and quality-relevant key indicators are likewise used to a large degree and have also been thoroughly examined in the specialist literature. This means both in theory and in practice that special attention and a considerable amount of expense are committed to developing and applying financial or production-related key indicators. Key indicators for sales, marketing and human resource management frequently play only a secondary role. According to a study by *Brunner and Roth*, 80 percent of managers are dissatisfied with the management information systems currently available. Too much technical financial information and too little 'soft' key indicator values are hampering business controlling (cf. Tavasli, 2008).

In the meantime, experts are also openly discussing the effectiveness of these indicators and their benefits as against the expenses incurred. Does the outlay in terms of funds and resources stand in reasonable proportion to the outcome? However, it is evident that the number of key indicators and key indicator systems used in larger companies and organisational units has taken on inflationary proportions. The benefit and significance of these values do not lie at the heart of the effort; instead, the decisive consideration seems to be that a visually appealing reporting document is completed on a continuous basis. Further details and information of the study can be found PhD Thesis *Manageable Ratio Systems for SMEs in Producing Industry* (Tieber, 2018).

2. Methodology of research

Based on the literature review focused on the business processes involved in marketing and sales, as well as those processes specific to production, which significantly fulfill contractually agreed customer requirements, a field analysis concerning key indicators and key indicator systems in the sales and marketing of manufacturing industrial enterprises as well as their suppliers and sub-suppliers were concerned. The findings ascertained were then evaluated and critically examined in terms of the sustainable, internal applicability for suppliers and sub-suppliers in the manufacturing industry. Targeted and useful key indicators were sought which, on the one hand, fulfill the order content for the relevant customer and, on the other hand, support suppliers and sub-suppliers in their own business management. Companies in the producing industry in the DACH region were defined as the target group for the study. Over the course of collecting the data, 350 companies in the producing industry in German-speaking Europe were contacted directly and invited to take part in the study. More than a thousand companies were contacted indirectly by email and newsletter dispatches. Data from 102 companies in total could be used for the study. Based on the data and conclusions drawn from the present state of the art, the following research and development directions were assessed as being currently relevant in relation to performance measurement systems in producing industry:

- analysis of representative KPIs in producing industry;
- continuous analysis of the utilisation level of KPIs in producing industry in the German-speaking region, especially of sales and marketing KPIs;
- review of practices and technologies, that have a positive influence on KPIs usage;
- development models for SMEs which could facilitate the usage of KPIs.

The selected methods should be chosen such that enables an objective, valid and sufficiently reliable conclusion. In this case personal interviews, written and online questionnaires were used. From January to March 2017, a test was carried out to check the questions and survey processes developed with regard to objectivity, reliability and validity. Based on the feedback and findings from the test phase, the questions were revised and the survey process was optimized. The official questioning was conducted in the period from July to December 2017. From January to March 2018, the analysis and evaluation of the data took place. From April to June 2018, the results were processed and recommendations for action drawn up.

3. Results and discussions

All surveyed companies answered 'yes' to the question of whether they consider the use of KPIs generally useful. Several reasons were cited for the usefulness of key performance indicators (Figure 1). Use as a transparent controlling tool (20.2 percent), help in decision-making (17.7 percent) and the initiation of changes and adjustments to company processes (16.1 percent) were the most frequently named reasons. This result tallies with findings from a key indicator study in automotive logistics – with the exception of a negligible deviation of two percent (Günther, 2017).

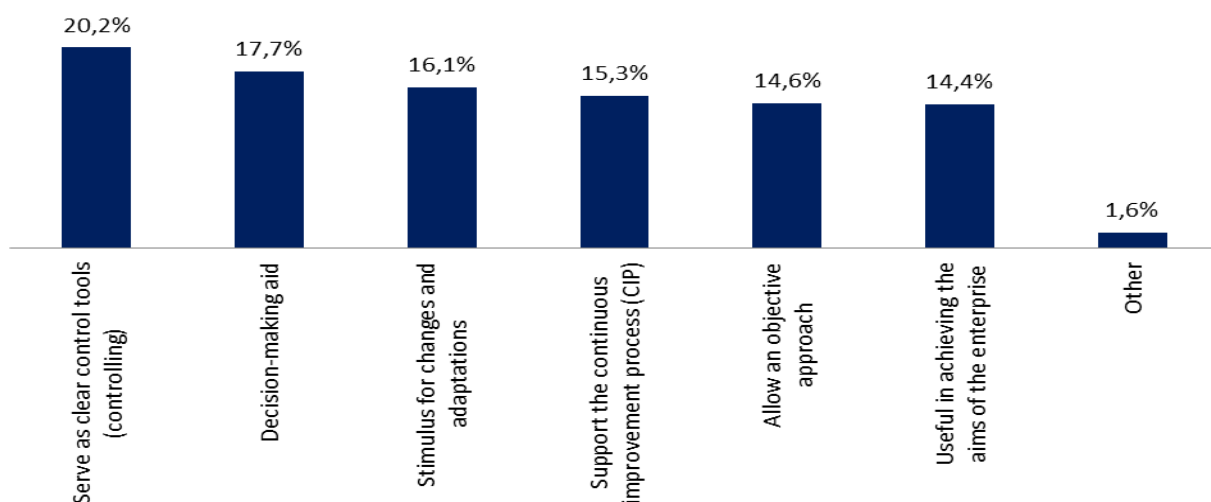


Figure 1. Application of KPIs (Tieber, 2018)

22 percent indicated that KPIs are particularly well suited for company controlling in order to attain targets. The identification of improvement potential and use as a benchmark tool for internal and external comparisons received 20 percent of responses, while the use of key indicator results for implementing performance-based remuneration (4 percent) played a relatively minor role. These findings are supported by a study by the Technical University of Munich (Günther, 2017). For instance, this study also cites the high relevance of key indicators for company targets and their support for facilitating continuous change processes. Almost 90 percent of surveyed companies answered that they currently use KPIs/KPI systems.

The question regarding the use of key indicators in business units/departments provided interesting insights; KPIs/KPI systems are used in a targeted manner in two thirds of all company departments included in the survey. Leading this trend is general management (12.7 percent), followed by sales/marketing (11.6 percent), manufacturing/manufacturing engineering (11.4 percent) and controlling at 11.1 percent. Purchasing, quality assurance and human resource management also exhibited usage rates above 8 percent. However, a closer look at the situation reveals that this mostly concerns quantity in data availability rather than data quality. The significance and usefulness of key indicators for future company controlling is certainly considered to be in a critical state.

Indeed, the constant addition of data to existing KPI pools without the simultaneous removal of unnecessary key indicators from the system clouds the overall picture. As often described in the specialty literature, the key indicators that are applied intensively typically concern economic and production-related key performance indicators as well as process, logistics and quality key indicators. This study likewise corroborates the significant presence of key indicators in these areas (Figure 2). However, other areas are also gaining in importance, such as customer/supplier key indicators including customer satisfaction (14 percent) and environmental key indicators (10.8 percent). There is a significant desire for change in the use of key indicators. Conventional, financial-based key indicators no longer suffice to describe a company in its entirety. A substantial increase is needed in the use of non-financial key indicators (Gräf, 2017).

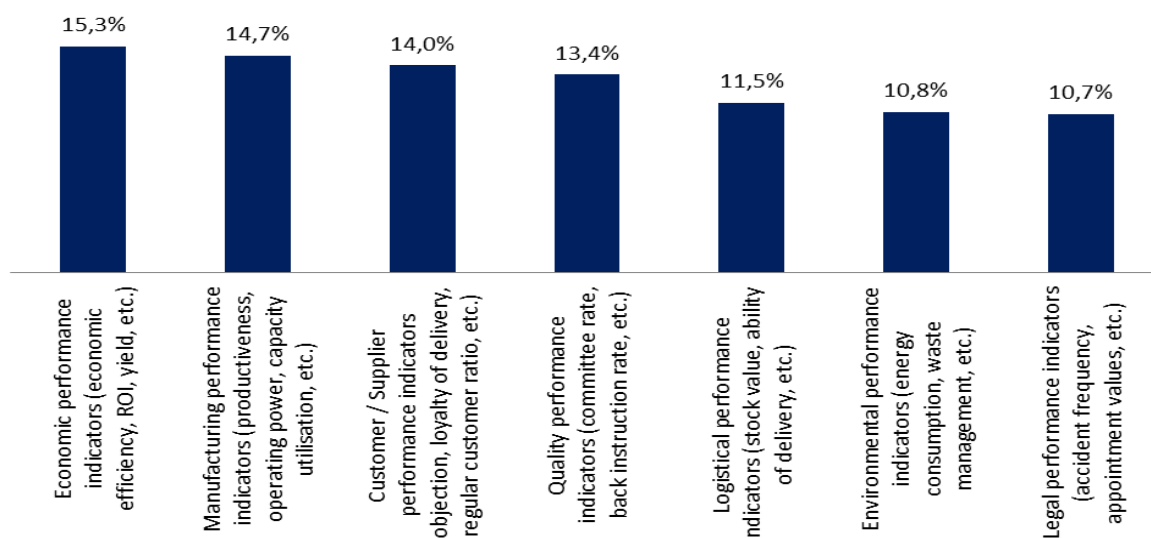


Figure 2. Categories of KPI use in companies (Tieber, 2018)

83 percent of respondents agree completely or largely, that KPIs are an efficient means of assessing the enterprise. More than 68 percent agree that KPIs offer clear information and two of three respondents use knowledge of KPIs for everyday work. Publication by means of conventional short reports and postal or email dispatches accounts for the leading communication channel (38.3 percent). The use of online reports is also progressing (25.5 percent). Here, the results are distributed using the company intranet or similar internal online platforms. The distribution of information through direct verbal communication (meetings/discussions) still, however, plays an important role. This is undoubtedly also due to the enormous rise in the use of technological systems at the communications level, as well as the rapid pace of the underlying availability of information and their urgency of distribution. This result was essentially confirmed by a study by Günthner and Dörnhöfer (Günther, 2017).

In the study, a corresponding question regarding customer requirements for the use of key indicators was, however answered with 'yes' in only 38.5 percent of surveyed companies. Customers primarily ask for the use of key indicators in

the areas of quality and logistics (~30 percent in each case). Requirements in other areas were stipulated to only a much more limited extent. For example, price and sales performance as well as process and production key indicators were specified in 11 percent of cases. Moreover, 90 percent of these companies confirmed that they also know why their customers require the use of these key indicators. Here, the main reason was minimizing risk (25.9 percent), followed by improving cooperation between the customer and supplier (22.4 percent).

Use of Sales Management KPIs

In the study, 88.5 percent of participating companies stated that sales controlling holds strategic importance in their company. At 82.6 percent of these companies, sales controlling is also performed regularly, systematically and throughout all sales areas. Significantly, the vast majority of companies (94.7 percent) have high expectations regarding substantial improvements to the company result through the use of sales controlling. The key indicators are applied in an attempt to achieve specified sales targets (80.8 percent), recognize potential for improvement in the sales process (69.2 percent) and control the sales team or individual sales employees (65.4 percent). More than two thirds of companies indicated that the sales targets are aligned with the company goals in advance.

Over the course of the study at hand, it was determined that market key indicators are collected and evaluated both widely and intensively. Here, the customer distribution of around 80 percent of the companies is considered relevant. Relative and absolute market shares, as well as the market potential and volume shares are likewise used by a majority of companies (>57 percent). A more differentiated picture can be seen in the analysis of turnover key indicators. Sales performance (21.1 percent) and return on sales (20 percent) received the most frequent mentions. They were closely followed by revenue structure (17.8 percent) and customer turnover rate (16.7 percent). Sales potential and sales share almost tied at around 11 to 12 percent. In contrast, the purchasing power index was hardly used at all. In general, the companies determined their actual sales success (Figure 3) predominantly using the product profit margin (26 percent). Sales profit margin (18.2 percent) and the use of sales success (16.9 percent) followed at a relative distance. It is surprising that the order profit margin is only collected regularly by around 14 percent of companies. The customer result share and sales structure fared even worse.

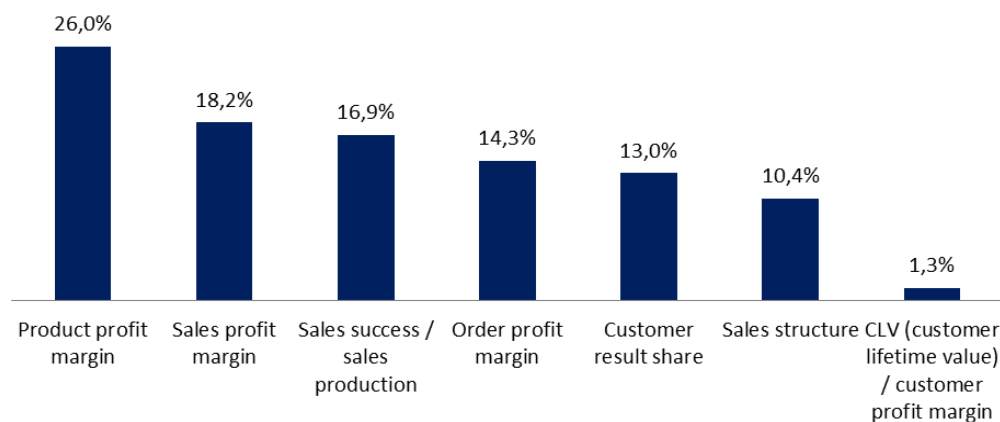


Figure 3. Sales success KPIs (Tieber, 2018)

It is evident that a predominant proportion of companies is satisfied with the current KPI system and also considers it generally sufficient for sales controlling purposes. However, less than one half of respondents believe existing KPI systems are useful in identifying reserve capacity in sales. Continuous customer contact is undoubtedly perceived as one of the most important controlling measures for successful sales. In response to the question regarding the use of customer contact and support key indicators, more than half of the companies stated that they measure at least frequency of contact (31.3 percent). Notably, more than a third do not use any key indicators in this area at all. The customer success rate (18.8 percent) holds second place among the most frequently named key indicators, at 14.6 percent. It is clear that there is great potential for improvement, particularly in the area of customer support.

In order to clarify the effectiveness of KPI use in sales, the application of key indicators was also taken into consideration in the analysis of regular and new customers. As already demonstrated in many studies previously, this analysis once again confirms that the measurement of customer satisfaction accounts for the top value (25 percent). It is therefore unclear why only one in two companies uses this key indicator professionally as a controlling tool. The fact that only 19.3 percent of surveyed companies analyse customer loyalty and also that 13.5 percent of study participants admitted to not using any

such key indicator reinforces the assumption that there is currently by no means universal and effective use of key indicators in sales. Another component of the survey dealt with the data collection of sales key indicators in the companies. Here, it is evident that 57.5 percent of companies collect their sales key indicators at least every two weeks. 26.9 percent do so monthly and 11.5 percent every week. Only 3.9 percent of surveyed companies collect sales key indicators once per quarter.

Use of Marketing KPIs

42.3 percent of companies participating in the study stated that they use marketing KPIs on a continuous basis. In order to assess the market and its purchasing power, the key indicators of market share (28.1 percent), market volume (24.9 percent) and market potential (15.6 percent) are used above all. Purchase intention, purchase power, marketing productivity and various online key indicators lie significantly below 4 percent in this analysis (Figure 4).

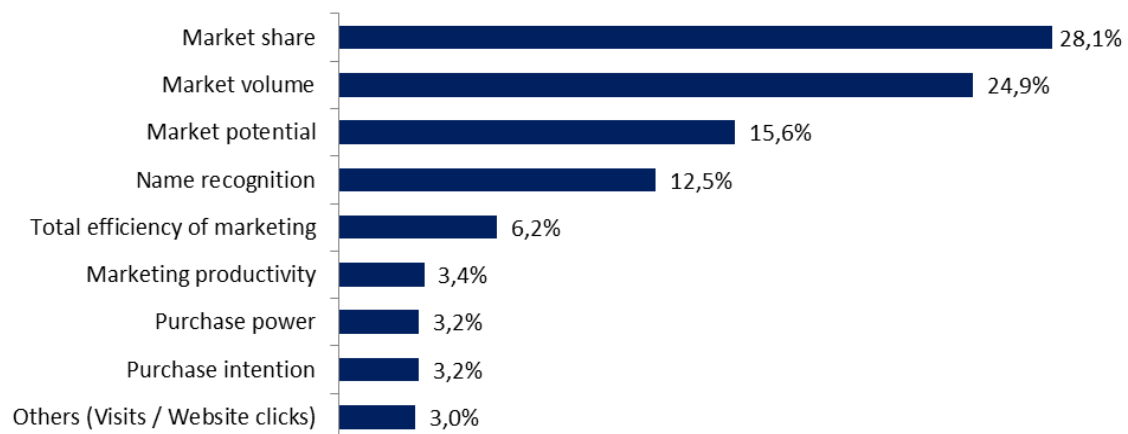


Figure 4. Marketing KPIs for assessing marketing and purchase power (Tieber, 2018)

Customer satisfaction is cited as the most important key indicator for evaluating customer performance. 49.7 percent of companies reviewed communicated this accordingly. Following at a distance, new customer acquisition and customer retention take second and third place. Only 6.2 percent considered customer loyalty to be a relevant key indicator. In the analysis of the marketing key indicators examined thus far, there is much evidence of a heavy concentration on a very limited number of marketing key indicators in companies. A study by Dr Riekhof (Riekhof, 2013) also comes to the conclusion that only around one third of surveyed companies currently consider online marketing to have high or very high importance. The frequency of use of marketing key indicators is particularly interesting in Internet/online marketing. More than 38 percent of companies stated that visits/website clicks are professionally recorded and evaluated. Social media KPIs (28.5 percent) and search engine ranking KPIs (19.1 percent) are also being used increasingly. Nevertheless, 14.3 percent of companies confessed that they do not collect any online/Internet-specific key indicators. This is an incredibly high number – particularly in an age of rapidly advancing digitalization. A best practice comparison shows that the most profitable companies exhibit around 4-percent-higher online marketing expenses than less profitable companies (Saxoprint, 2016). In summary, it is evident that the portfolio of marketing KPIs in companies is currently utilized to only a limited extent. Online marketing in combination with professional KPI controlling represents the exception rather than the rule. These study findings are also substantiated by the results obtained by PFH-Göttingen (Riekhof, 2013). Familiar offline marketing applications and key indicators that are established in the respective market are therefore generally used. As a result of the continued rise in the importance of online marketing in relation to the overall marketing (also from a budgetary perspective) of the company, the heightened implementation of online marketing key indicators offers an enormous potential for improvement in the future.

KPI platforms for SMEs and their potentials

None of the analyzed sectors of the manufacturing industries currently have a clear and unequivocally defined customer requirement with regard to the use of a specific key indicator system. When considering the sales and market key indicators, it is clear that there is a strong connection between the company aims, the sales targets and hence also the associated key indicator requirements in the companies. This suggests a high level of quality in the use of targets and requirements within the industry. For the controlling of sales among suppliers/sub-suppliers, however, an intense concentration on key indicators that analyze sales costs, time expenditure and internal sales expenses is also

recommended. This should make it possible to generate more resources for a sustainable customer focus in sales. Massive potential for optimization can be found in the whole offer and negotiation process in sales. Starting from the initial contact through support and processing in the offer stage, as well as negotiations, to the integration of the order in the company or customer handling in the event of a lost order, there are significant opportunities for increasing success. Sales employees must learn that their work has to be evaluated in accordance with new criteria. Communication with the customer and the public on multiple digital levels represents a key challenge of the future. Companies that face this challenge and invest staff and budgetary resources in social media now will be able to attain a clear competitive advantage. The focus lies on digital interaction with the customer. Professional framework conditions are necessary to represent this new form of communication in a credible manner. It is essential that key indicators are automatically generated in this process.

KPI models for SMEs

Based on the findings of the study results and the overview platforms for key indicators developed subsequently, three cost-efficient and simple KPI models were developed for SMEs for both the business areas of sales and marketing. Adjusting the models to specific industries and using other key indicators described in the platforms is possible and indeed practical. The key indicators covered in this paper were compiled based on the premise of a high degree of application. When correlating sales and marketing with each other on a continuous basis, it is recommended to always work with both ranges of models simultaneously. However, the use of a single model is also generally possible. The developed models are subdivided into three levels. The *light* model (level 1) covers eight essential key indicators (Figure 5), which enable the company to quickly and efficiently obtain a picture of the actual situation in sales and marketing. The effort required to survey and implement these key indicators in the company is low. A number of important findings for controlling both business areas are thereby enabled. The *light* model is suitable for microenterprises, start-ups and small companies. In addition to the actual sales and marketing key indicators, key indicators from other KPI platforms are integrated to a minor extent. Thus, a basis for an initial introduction of key indicators is provided for even microenterprises.



Figure 5. "Light" sales and marketing KPI models (Tieber, 2018)

The *standard* model (level 2) covers 12 key indicators (Figure 6). In this model, the share of sales/marketing key indicators was increased for actual operations. Nonetheless, the effort required to survey and implement the key indicators is quite manageable for SMEs. This model already provides SMEs with a very useful controlling model for sales and marketing. The segments relevant to success are examined in the sales and marketing module. The *standard* model is recommended for SMEs already established in the market, with a sales or marketing team comprising several members.



Figure 6. "Standard" sales and marketing KPI models (Tieber, 2018)

The *deluxe* model (level 3) covers 16 key indicators (Figure 7). This model is recommended for large SMEs with corresponding sales and marketing departments. Sufficient resources must be made available for surveying and implementing the KPIs. In order to work effectively and successfully with the key indicators, a structured, well organised approach is required.

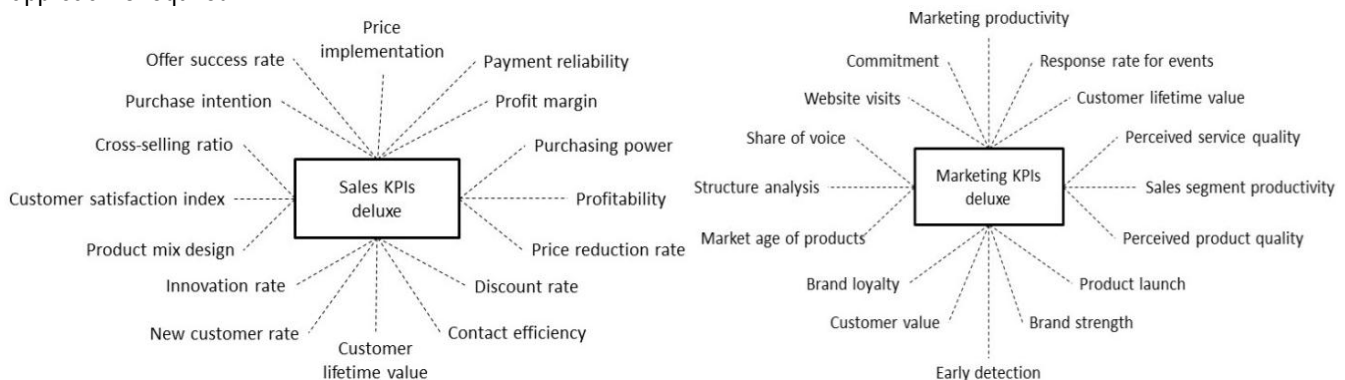


Figure 7. "Deluxe" sales and marketing KPI models (Tieber, 2018)

4. Conclusions

All surveyed companies consider the use of KPIs generally useful and 90 percent of surveyed companies currently use KPIs. The significance and usefulness of key indicators for future company controlling is certainly considered to be in a critical state. The greatest hurdles in introducing KPIs were identified as organisational challenges, technical hurdles and as well as the general fear of the total cost to the company, but all companies that use key indicators stated that the KPI results led to a direct benefit. Sales KPIs and sales controlling holds strategic importance for companies in the analyzed market. Sales controlling is performing regularly, systematically and throughout all sales areas. Significantly, the vast majority of companies have high expectations regarding substantial improvements to the company result through the use of sales controlling. The sales targets are aligned with the company goals in advance.

Although many enterprises now run CRM systems to promote professionalization in the areas of customer satisfaction and customer service, sales or marketing key indicators and key indicator systems are only rarely used in a meaningful and optimal way. A systematic approach in marketing with the integral use of marketing key indicators is not the norm. There is much evidence of a heavy concentration on a very limited number of marketing key indicators in companies. For success as a SME in the producing industry, it is strongly advisable to intensify the use of key indicators in sales, marketing and HR management. Massive potential for optimization can be found in the whole sales process. Starting from the initial contact through support and processing in the offer stage, as well as negotiations, to the integration of the order in the company or customer handling in the event of a lost order, there are significant opportunities for increasing success. A corresponding paradigm shift in sales is for SMEs in producing industry necessary. Sales employees must learn that their work has to be evaluated in accordance with new criteria.

Appropriate use of digital information platforms will become incredibly important and decisive for SMEs in the future. Companies that face this challenge and invest staff and budgetary resources in social media now will be able to attain a clear competitive advantage. The focus lies on digital interaction with the customer. The fundamental use of human resource KPIs is the success factor in future. Intelligent human resource KPI management tremendously increases the likelihood that people decide to join the company and stay there for the medium to long-term. The developed KPI models can be individually adapted, cost-effectively and with little effort to the respective business needs of small and medium-sized enterprises in producing industry. SMEs that consistently use the developed KPI models in sales, marketing and human resources will determine competition in the future. In the course of the rapid progress of Industry 4.0, success will be achieved by those SMEs in the manufacturing industry that automatically control sales and marketing with key indicators.

SMEs that primarily align their use of key indicators to fulfil customer needs, and adjust their corporate policy, vision, mission and strategy accordingly, while also implementing this on a daily basis, will move to occupy a dominating position in the industry.

References

- Günther, W. A., Dörnhöfer, M. (2014). Einsatz von Kennzahlensystemen in der Automobillogistik – Aktueller Entwicklungsstand und Handlungsbedarf, Onlinerecherche, http://www.fml.mw.tum.de/fml/index.php?Set_ID=870&Download=Kennzahlensysteme_in_der_Automobillogistik.pdf, Technische Universität München, Lehrstuhl für Fördertechnik Materialfluss Logistik, downloaded on 28.09.2017, 14:32.
- Gräf, J., Isensee, J., Kirchmann, M., Leyk, J. (2014). Top-Entscheider unzufrieden – Ergebnisse der KPI-Studie: Effektiver Einsatz von Kennzahlen im Management Reporting, Onlinerecherche, <http://docplayer.org/12410277-Top-entscheider-unzufriedenergebnisse-der-kpi-studie.html>, downloaded on 28.09.2017, 16:27.
- Kaack, J. (2012). *Performance Measurement für die Unternehmenssicherheit: Entwurf eines Kennzahlen und Indikatorensystems und die prozessorientierte Implementierung*, ISBN 978-3-8349-3950-0, e-book, Gabler Verlag, Wiesbaden, 2012.
- Riekhof, H.-C. Buhleier, M., Mix, S. (2013). Online-Marketing im B2B Geschäft – Empirische Studie, Onlinerecherche, <https://www.pfh.de/fileadmin/Content/PDF/forschungspapiere/studie-online-marketing-imb2b-geschaef-riekhof-buhleier-mix.pdf>, downloaded as a PDF file on 30.11.2017– 17:00, PFH Private Hochschule Göttingen, 2013.
- Saxoprint, Marketingstudie im deutschen Mittelstand–Ergebnisbericht 2016, Onlinerecherche, <https://www.saxoprint.at/b2bmanager/studie/>, downloaded on 30.11.2017– 15:12, Infratest, 2016.
- Tavasli, S. (2008). *Six Sigma Performance Measurement System: Prozesscontrolling als Instrumentarium der modernen Unternehmensführung*, ISBN 978-3-8350-5507-0, e-book, Gabler Verlag, Wiesbaden.