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MOLNÁR VIKTOR, Miskolc, Hungary

ORGANIZATIONAL SELF EVALUATION WITH INTEGRATION OF MANAGEMENT MODELS

The paper points some problems of the separated used management models and try to lighten the necessity of parallel using of these models. The major gap of it is the realization of connections among the models. I introduce an existing integrated management model which is applied succesfully at some firms and non-profit organizations. My work is the development of the model referring to the above mentioned connections among its subsystems. The validation of the basic model is given but the developed variation was not tested yet in practise. The conceptual structure and the logic referring to the process of use is correct.

1. INTRODUCTION

In the middle of information technological progression we ask more frequently how can a succesfull enterprise use the advantages provided by the technology and what kind of difficulties it meets. One of the most simple microeconomical approach of the qualification of profit-oriented business undertaking is, that how large production volumen it can realize with using its endowments (infrastructure, employees, technology etc.). While it utilizes its internal endowments, and combines the resources on the most prosperous way, numerous external factor actuate its run. We can say the followings. If a company –during effectively adapt itself to the environment – is able to coordinate its run, furthermore able to keep or strenghten its role on the market, the company is competitive on the given market. Previously one of the success factors was an informatic solution which supports the management but today these resources are the fundamental conditions of a company to remain on the market.

As PhD student I have searched the answer for the question „How can an enterprise or an institution adapt the IT-support to their business processes effectively?" Usually decision makers have to face the problem: the purchased solution does not necessarily support the complex business situations on an appropriate way.

Because of the above outlined gap we can observe different changes in the needs of managers. On the one hand it has been forming a powerful competition among firms delivering business information systems. It has resulted the practise that they afford complete implementation and advisory services besides the bought softwares. On the other quality mamagement offers numerous possibility to monitor and manage the complex system of corporate activities. The exactly developed processes, devices and methods leads to the satisfaction of buyers and other stakeholders and finally to appreciable succes if they are adapted to strategic goals. Institutions that own the good quality approach and have the resources to realize it in practise, will be able to run their

activities in the spirit of Total Quality Management (TQM). Winning of a quality award could be a good demonstration of the efficiency of quality management.

However supporting methods mentioned above do not always meet the expected results. The reason is the non-feasible conditions of application or the shortage of sources. Numerous case study reports that the methods referring to the monitoring of realization of strategic goals, include hiatuses. That's why they have begun to elaborate models to eliminate these weaknesses. One example is the Balanced Scorecard (BSC). „We can integrate BSC into organizations that are the same what most company want to be. The indicators are focusing to strategy and vision and not to control. They outline goals but suppose that persons choose optional behaviour to reach them. Indicators show the way to people towards to global vision. Leaders and managers maybe know the result but they are not able to tell it to their employees how to reach it because the circumstances of the employees' work are changing constantly." [2]

The BSC particularizes strategy to chain of operative actions. To realize it, the general model gives four aspect which could result well structured strategy and actions: financial, buyers, processes, and developing. The structure of BSC fits well to the process of corporate strategy, because the indicators give a picture about the realization of strategic aims.

However the separated application of the different models does not guarantee the succes. The major task is the collection and conscious consideration of experiences arising during the application. Furthermore we have to take them into account in the future in case of any change. This is called knowledge management.

2. THE ELEMENTS OF THE INTEGRATED MANAGEMENT MODEL

Today companies needs for integration of different management techniques and models are increasing because the separated models mostly have deficiencies or because of their preconditions they allow narrower margin. It is trivial to apply more model parallelly, however synchronizing of input and output factors is generally problematic, mostly in case of complex solutions. For example literature regards ISO standard family to an integrated model which covers the whole corporate management. Sorensen elaborated the management support software "Value Market". It integrates the Balanced Scorecard, the activity-based costing (ABC) and the classic controlling system conception. According to Smith eligible extent increasing of corporate efficiency can be reached with the integration of BSC, ABC and TQM. [1]

Associates of Institute of Management on the University of Miskolc elaborated an integrated management model which integrates the BSC, the EFQM excellence model and the organization and leading methods of organizational learning. [4] The criteria of the model adatped to the University is in table 1. EFQM places in the centre of the integrated model. It includes a complex evaluation aspect system which is able to point the changing programmes after ad hoc analysis too. Practically we scan the company with the help of the aspect system and it will point the problematic field. After these aspects,

partly given and partly adapted to the enviroment of the institution, we can evaluate the considered part as an essay or by tests.

Table 1 - EFQM criteria

ENDOWMENTS	**Leading (Strategic and operative)**	Values of the leading, Communication and validation of the mission and the values, Internal communication, Guide, Conflict handling, Participation, Organizational structure	Test / Essay
	Managing of colleagues	Competency requirement, Achievement requirement, Stake and motivation, Achievement evaluation, Staff development, Carrier planning, Organizational culture	Test / Essay
	Strategy	Politics, mission, aims, Recognition of strategy, Changing actions, Aid of realization, Monitoring and correction of strategy, Domestic and international relationships, Influence zones	Test / Essay
	Resources, partners	Resources, Key competencies, Knowledge, Relation systems	Test / Essay
	Processes (operational and change)	Instiutution development processes, Basic processes (teaching, research), Support processes	Test / Essay
RESULTS	**Satisfaction of colleagues**	Participation, Internal communication, Satisfaction with the work, Satisfaction with the honour, Organizational bending, Lobby, Support	Test / Essay
	Satisfaction of students	Course evaluation, Accountability evaluation, Organizational possibilities evaluation, Evaluation by graduated students	Test
	Social effect	Evaluation by governing- and partner organizations, civil organizations, local government, companies	Test
	Organizational results	Indicators of teaching, research, management	Essay

In case of test-base evaluation we use scales or other way to make estimation from opinion declaration data, accordingly we get empirical data. The base of the data is subjective judgement, so we have to insure the right sample size.

The base of the essay evaluation is mainly an indicator system corresponding to the aspect system. We compare the real values of it with the purpose values which are determined by the corporate strategy. Essay evaluation is based on the RADAR technique fulfilling by an expert team. According to this we have to plan and formate those rigid established methods and approaches which help to reach the defined aims and we have to systematically detail the approaches. We have to analyse and evaluate the applied methods through the analysis of achieved results, and determine the results which refer to organizational efficiency and to satisfaction of interested partners' expectations. Afterwards as the results of RADAR qualification elaborated by leaders' team, scores given to essay evaluation can be defined. As the RADAR-logic every organization need to

–define exactly the results we want to reach,
–plan and form the approaches we want to apply,
–apply the approaches systematically,
–evaluate and control the approaches,
–determine the priorities fot further development,
–execution.

We score the evaluation results of the award model, the maximum is 1000 points. The UNI-EFQM model includes test and essay evaluation. Table 1 includes information about it. The Bergen document includes European standards for higher education. It orders that the institutions of higher education have to realize the self evaluation in the next issues.

–Quality policy, strategic and quality regulations.

–Start, monitor and regular internal evaluation of programmes.

–Evaluation of students.

–Quality insurance of teachers.

–Knowledge support, devices and student services.

–Internal information system.

–Publicity.

Realization of these requirements can be tested by the integrated model with a simple relation matrix if evaluation aspects cover them.

The major problem with the EFQM model, that it does not includes exact values and do not support strategy effectively.

The second part of the model is the Balanced Scorecard model which ensures the indicators to exact evaluation. The essence of the model is the correct definition of indicators, the relation among them and the right relation between the indicators and the strategic aims. These important roles allow to have a picture about the difficult effects among the aims. In contrast to EFQM model, the BSC not only lighten the problematic field but through the indicators gives exact information about the distance from purpose values. Hereby designates the direction and field of development. The learning and development aspect is another concept. We would like to know what we have to develop in. Namely, numerous purposes are determined by abilities of people and the organization. Mooraj gives some incompleteness of the BSC modell [3]:

–It doesn’t focus the cooperation of employees and suppliers

–It doesn’t identify the rules of the community with the definition of the environment which the company runs in

–It doesn’t recognise the achievement measuring as a two-way process

The third part of the model is the aggregation of some organization methods referring to organizational learning. The knowledge management is a difficult system. On the one hand it’s hard to describe its processes with exact formalism, on the other experts focus on it recently much better thus a lot of theory and investigation was born in the issue. According to Plessis knowledge management has the following motives.

–Knowledge is a commodity in the new economy.

–Knowledge erosion.

–Knowledge management provides competitive advantage.

–Knowledge management helps the efficient decision making.

–Internet, developed telecommunication and IT.

–Organizational and geographical distribution.

–Cooperation.

–Internal deficiencies.

–Knowledge agglomeration.

–More possibility to reach knowledge.

On account of the long list we can say it is a lot of difficulties to translate the failures and weaknesses of an organization to quality develping projects.

3. The developement of the model

The major weekness of the model is the connection among its subsystems. More exactly the connection is solved but it requires a lot of planning activity before evaluation e.g. with the elaboration of the surveys.

I introduce some simple algebraic relations in the followings. This formalizm could help the IT experts to adapt the practical investigation process into a software solution. The vector-matrix operations describes the coherences between the parts of the integrated model. Figure 1 shows graphically the component of the model and the evaluation process too. The meaning of the knowledge management block is that quality development projects are the centre of organizational learning.

Vector definitions:

– Weighted strategic goals vector:

$$\mathbf{a} = [a_j] \; ; \; 1 \le j \le n \; ; \; \sum_{j=1}^{n} a_j = 1 \qquad (1)$$

, where n is the number of strategic goals.

– Purpose values vector of indicators:

$$\mathbf{c} = [c_l] \; ; \; 1 \le l \le q \qquad (2)$$

, where q is the number of indicators

– Real value vector of indicators:

$$\tilde{\mathbf{c}} = [\tilde{c}_l] \; ; \; 1 \le l \le q \qquad (3)$$

Relation matrix definitions:

– EFQM-fields and investigation aspects:

$$\mathbf{F} = [f_{zk}] \; ; \; 1 \le z \le s \; ; \; 1 \le k \le p \qquad (4)$$

, where s is the number of EFQM fields and p is the number of investigation aspects

– Investigation aspects and indicators:

$$\mathbf{G} = [g_{kl}] \; ; \; 1 \le k \le p \; ; \; 1 \le l \le q \qquad (5)$$

– Indicators and questions:

$$\mathbf{H} = [h_{lm}] \; ; \; 1 \le l \le q \; ; \; 1 \le m \le r \qquad (6)$$

, where r is the number of questions

– Strategic goals and investigation aspects:

$$\mathbf{T} = [t_{jk}] \; ; \; 1 \le j \le n \; ; \; 1 \le k \le p \qquad (7)$$

Weight matrix definitions:

– Indicator weights in order of investigation aspects:

$$\hat{\mathbf{G}} = [\hat{g}_{kl}] \; ; \; 1 \le k \le p \; ; \; 1 \le l \le q \; ; \; \sum_{l=1}^{q} \hat{g}_k = 1 \qquad (8)$$

– Investigation aspect weights in order of strategic goals:

$$\hat{\mathbf{T}} = [\hat{t}_{jk}] \; ; \; 1 \le j \le n \; ; \; 1 \le k \le p \; ; \; \sum_{k=1}^{p} \hat{t}_j = 1 \qquad (9)$$

The procedure of the evaluation

– Let's form the $\mathbf{w} = [w_l] \; ; \; 1 \le l \le q$ vector as the followings:

$$w_l = \frac{\tilde{c}_l}{c_l} \qquad (10)$$

The elements of the vector shows the difference between the real and the purpose value of the indicators.

– The weight matrix of aspects multiplied by the vector of strategic goals gives the resultant weight vector of aspects:

$$\mathbf{a}^T \cdot \hat{\mathbf{T}} = \mathbf{b}^T \qquad (11)$$

, where $\mathbf{b} = [b_k] \; ; \; 1 \le k \le p$ and $\sum_{k=1}^{p} b_k = 1$

– Similarly the resultant weight vector of indicators:

$$\mathbf{b}^{\mathbf{T}} \cdot \hat{\mathbf{G}} = \boldsymbol{\beta}^{\mathbf{T}} \qquad (12)$$

, where $\boldsymbol{\beta}^{\mathbf{T}} = [\beta_l] \; ; \; 1 \le l \le q$

– Let's form the **W** diagonal matrix (q×q) from the **w** vector

Let's define the $\mathbf{v} = [v_l] \; ; \; 1 \le l \le q$ vector as the followings:

$$\mathbf{v} = \mathbf{W} \cdot \boldsymbol{\beta} \qquad (13)$$

– The score vector of the indicators:

$$C \cdot \mathbf{v} = \tilde{\mathbf{v}} \qquad (14)$$

, where $\tilde{\mathbf{v}} = [\tilde{v}_l] \; ; \; 1 \le l \le q$ and C=const. (maximum score)

– Score of EFQM fields (**e**)

$$(\mathbf{F} \cdot \mathbf{G}) \cdot \tilde{\mathbf{v}} = \mathbf{e} \qquad (15)$$

, where $\mathbf{e} = [e_z] \; ; \; 1 \le z \le s$

Maximum score of the fields ($\mathbf{e}^{max}$): with the chose of $w_l = 1$.

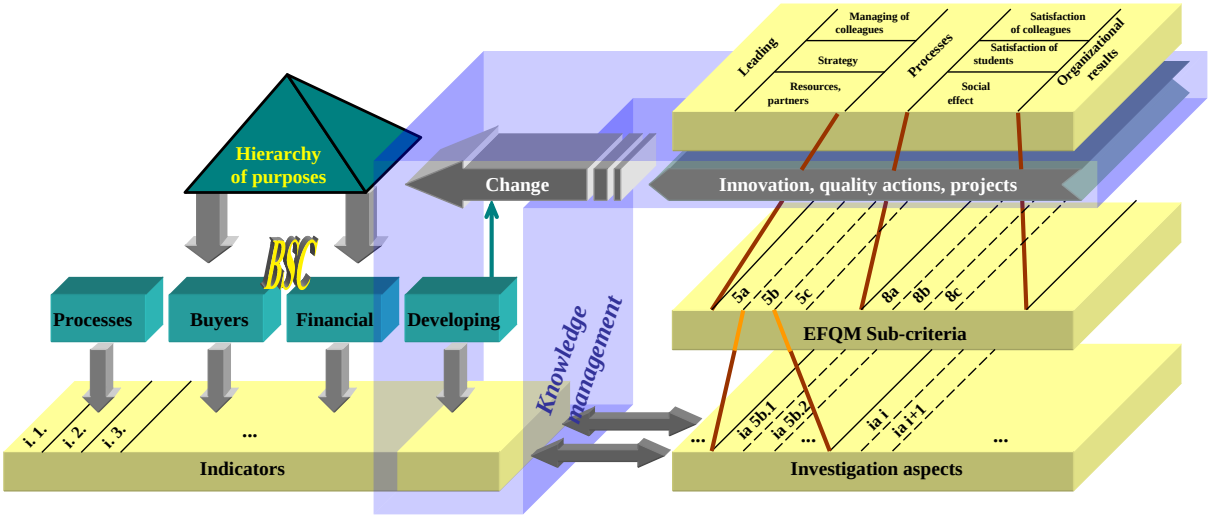

Figure 1 - Structure and process of self-evaluation

The model was developed for the environment of the University of Miskolc. The database formed from the Balanced Scorecard indicators in the structure of investigation aspect system which serves the aspects to the evaluation of the strategy. We have to start the analysis from the institution development plan. The next step is a session by an expert group. The members of it give the

–weights of strategic purposes,

–weights of investigation aspects in order of the strategic purposes,

–weights of indicators in order of the investigation aspects,

–purpose values of indicators.

After the expert team work we can begin the calculations of indicators modified by the weights. Above introduced mathematical model is the core of the procedure and figure 2 shows the main connections between the block of the modell and the IT-based decision support elements.

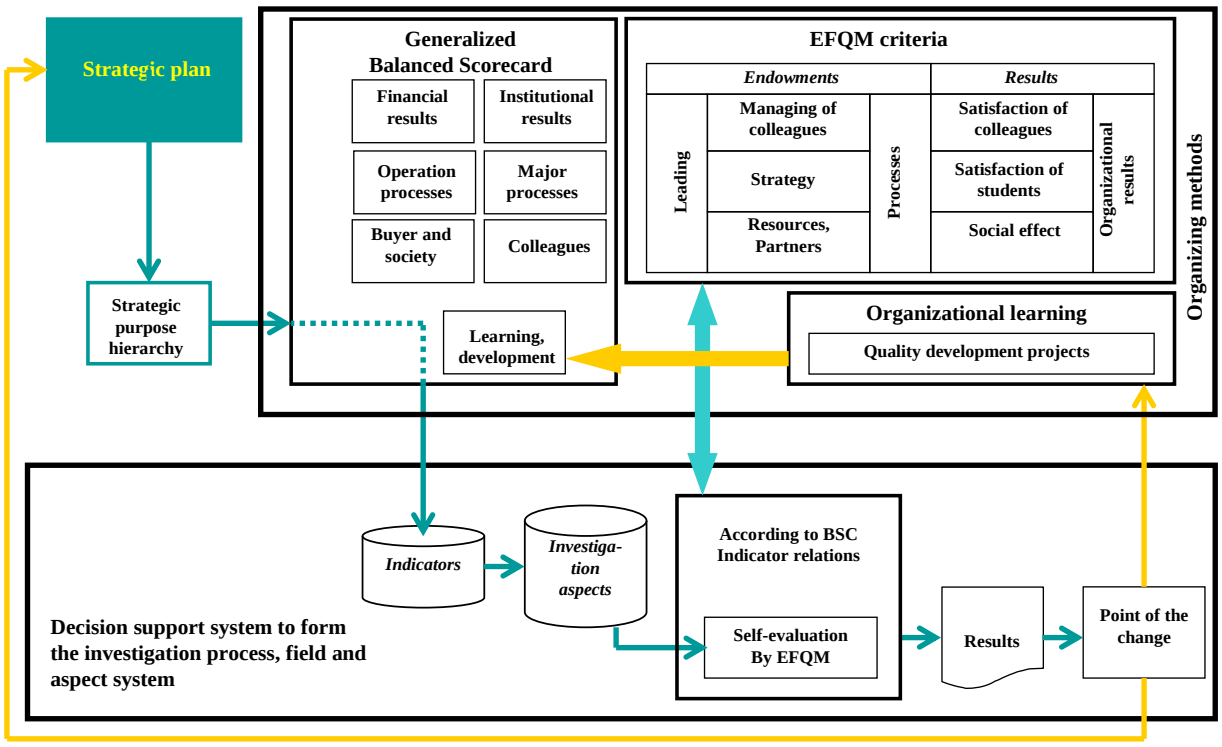

Figure 2 - The integrated management model and the support of decisions

Further possibilities to using the procedure:

–Empirical risk estimation referring to the goals of quality development projects.

–Longitudinal investigations in order to analyse the formation of timeline data.

–Differentiated investigations referring to other organizational purposes.

SUMMARY

Our quick changing world determines researchers and practical experts to elaborate more and more solutions to arise the general efficiency and thus profit of the company. I outlined a theoretical model which can be useful for decision makers. It was examined by experienced professors and they offer the practical testing. The first variant of the introduced integrated management models was applied successfully for some larger servicer and for the University of Miskolc. The new variant can be verified on the next self-evaluating ocassion. (Graduates Career Tracking System, course evaluation, analysis of strategic purposes)

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