Aspect-Oriented, Key-Index Based Regional Business Entities' Evaluation Framework

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Abstract:

The paper is devoted to the features of regional business entities' efficiency and performance evaluation framework based on significant aspects and highlighting key features including rank tests. Features are suggested to allow planning and justifying obtained results including ranked business development priorities.

Consistently, the authors analyze indicators of four types of linked activity: financial, production, managerial, and social. The paper also defines that in current conditions the balanced focus of indicators is the only way to the effective and high-performance evaluation of regional business development.

Moreover, it is proved that evaluating the average weighted stability index allows establishing appropriate management system.

Keywords
Regional business, business entities, resource potential, stability index, management system

JEL classification codes: *O52, Q19, L26*

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Introduction

Development of business framework plays a key role in modern socioeconomic context. We consider the entrepreneurship as a specific economic behavior based on the process of searching new opportunities for business as well as innovation-oriented character and abilities in raising funds from various sources. In authors' opinion, the regional business development is a key factor in providing sustainable economic and social development of the region.

However, inability to obtain objective data for local business entities efficiency evaluation purposes interrupts the process of planning its further development and problem statement for achieving strategic objectives (Kusakina, 2016; Vovchenko *et al.,* 2017; Akopova *et al.,* 2016).

Due to the novelty of the issue and business evaluation tools, the need of developing the aspect-oriented, regional business entities evaluation framework based on detailed analysis of core indicators of regional business entities (Ryzhkov, 2016). Evaluating the end-indicators of business activity is a challenge due to applying a set of criteria and every single business line evaluation. Selection of criteria depends both on management decisions and entities' autonomy level. Thus, some note the profitability level, others note production costs.

As of today, business entities' efficiency evaluation consists in calculating financial indicators only. Financial results herewith could be obtained only as a result of inner processes, satisfying needs of society, and effective human, informational, and organizational capital utilization. In this regard, the issue of developing business evaluation framework covering every single line of regional business development becomes vital.

Methods

Defining principles, we should note that applying the system approach in the regional business framework efficiency analysis indicates its structure including a set of elements related both with external macro-environment and together. Furthermore, efficiency evaluation assumes analyzing all the lines of business through the framework of indicators (Stepanova, 2015; Vovchenko and Panasenkova 2013; Ivanova *et al.,* 2017).

It is notable that both Russian and foreign authors are in development of evaluation indicators, but many of them identify analysis only with economic efficiency along with calculating corresponding indicators. Regarding foreign efficiency frameworks, we note that they are not adapted for Russian business conditions and could not indicate real state of business.

When choosing the way of business activity evaluation we should mind aligning actual and planned figures both on pre- (costs and materials) and post-stages (revenues, performance indicators) of analysis (Goldstein, 2013; Suryanto, 2016; Thalassinos *et al.,* 2012). Analyzing the relation between costs and results is vital. Such analysis requires custom math tools like building production function. Analyzing the function allows assessing the effect of costs on the performance results (Ovchinnikova, 2015; Havlicek *et al.,* 2013).

It is clear that evaluation framework should include both qualitative and quantitative indicators highlighting compatibility of business entities to their goals. The core indicators' criteria selection requires the analytical approach and math techniques considering business activity's features. After evaluating it is recommended to operate specific terms as follows: estimating the feature and value of index through reference matching; formal procedure of evaluating the staff performance through collecting assignment reports; custom indicator revealing milestones towards the goal.

Results

In light of this, the regional business entities' evaluation framework includes data on four types of activity: financial, production, managerial, and social as follows:

Table 1. *Aspect-oriented business entities' evaluation framework*

FPMS Elements	Indicator
F-Financial activity	Innovation criterion
	Economic activity indicators
	Profit ratios
P- Production activity	Output volumes
	Labor efficiency
	Level of production automation
M – Managerial activity	Manageability index
	Goal achievement index
	Management structures efficiency index
S – Social activity	Social demand index
	Staff training and development index
	Social work efficiency index

The efficiency of every type of activity is characterized by target values of corresponding indicators.

F – Financial activity: We should evaluate it from the region's innovation criterion along with profitability and economic activity indicators' point of view. Innovation criterion defines the return on investments values. The higher NPV rate is

considered more efficient. Economic activity indicators benchmark the financial stability of the entity in market economy depending on resource efficiency and stability of economic growth as well as highlight the profit margin. Profit ratios are the resultant indicators of business efficiency and include profit margin, margin on sales, return on assets, and production profitability.

Due to the stativity of financial activity indicators, they highlight the results of a certain period without considering the prospective returns on investments. Thus, we should supplement the efficiency evaluation framework with production, organizational and social activity indicators.

P – production activity: We should define it through production output, labor efficiency, and production automation level indicators.
Output values are crucial in planning both production and marketing sectors' activity. It is important to indicate the production capacity in monetary terms as follows:

$$PO = (CB + GS - OB) * PI, \tag{1}$$

Where PO – finished-product output
CB – closing balance;
GS – goods sold;
OB – opening balance;
PI – percentage of adjusting the price policy through the period.

Labor efficiency defines the staff performance and could be measured as ratio of work done for a certain period. Improving the labor efficiency leads to increasing in values of entity's performance indicators. Production automation level refers to technical equipment and high capital input.

M – managerial activity: It is stated as one of the basic activities providing continuous increase in labor efficiency and management system lines improving. We suggest calculating three transparent indicators there as follows:
1. Manageability index:

$$Im = \frac{1}{Z} * \sum_{1}^{m} \frac{Ef}{Es} \tag{2}$$

Where *Z* is to number of management levels
m is to number of heads for current management level;
Ef, and *Es* are to employees (fact or normative) per 1 head for every management level.
2. Goal achievement index is calculated as follows:

$$Iga = \frac{Me}{Pe} \tag{3}$$

where *Me* is to management economies,
Pe is to production efficiency

3. Management structures' efficiency is evaluated as follows:

$$Mse = \frac{R}{Nms} \qquad (4)$$

where R is to revenues of the entity,
Nms is to number of management staff.

When calculating the indicators noted above, we should mind that only dynamic indicators make sense. There we mean the necessity of comparing values of, at least, two conditions of the system (actual data compared to planned indicators)

S – social activity: It considers effect of increasing the labor efficiency, decrease in staff turnover, staff training and development included.
1. Social demand index is calculated as follows:

$$Isd = Cn * E(St_1 - St_2) \qquad (5)$$

where Cn is to new employee costs (ratio of recruitment costs to number of picked candidates,
E is to average number of employees,
St is to staff turnover index (ratio of dismissed employees to average number of staff).
2. Staff training and development index is calculated as follows:

$$Itd = Cs * Et * N - Ctd \qquad (6)$$

Where Cs is to salary costs per month,
Et is to training employees,
N is to period under analysis,
Ctd is to staff training and development costs
3. Social work efficiency index is determined as follows:

$$Isw = En * Dw * (LE_1 - LE_2) \qquad (7)$$

where *En* is to number of employees,
Dw is to days worked per month
LE is to labor efficiency (ratio of sales volume to number of employees).

Social work efficiency evaluation should consider both qualitative and quantitative indicators. Quantitative measurements involve ratios of financial, material, time expenditures to the strategic and tactical objectives' implementation. Qualitative measurements include referencing of the actual result with social service standards.

Consequently, the system is efficient in cost-management of: production performance, efficiency indicators such as revenues, return on sales, assets, capital; labor cost efficiency, quality issues, labor conditions, wage levels at different management and production levels providing the bounds for proper entity's management framework performance (Morkovina, 2015).

Discussions

Aspect-oriented, key-index based regional business entities efficiency evaluation framework should be justified depending on the sector specifics. After applying the evaluating tools we could observe the effect on internal and external environment determining the quality and activity issues depending on business entity's potential (Bazieva, 2016; Sharma, 2014).

As an example, effect on shifts in external environment could be different, but we highlight four generalized types such as: production, competitive, innovation, and entrepreneurial. The comparison of economic behaviors is presented in Table 2. According to the Table 2, every type of effect has its preferable feature. We note that such a pattern is rather approximate. Thus, the pick of certain management framework should be complemented with calculation of entity's sustainability and attractiveness index.

Table 2. *General features pattern*

Type of effect	Features				
	Management features	Entity's objectives	R&D objectives	Competition behavior	Awarding for
Production	Minimum-management. Allocation of certain responsibilities. Financial control. Production-focused	Minimization of costs	Cost saving. Reliability improvement	Price competition response	Cost saving
Competitive	Equilibrating production and marketing. Flexible management. Long-term planning	Providing efficient gains	Production modernization	Price competition response	Cost saving
Innovation	Notation in management. Project-management. Shift-sensitiveness	Providing short-term capacity	Product development	Market development strategy	Novelty

Entrepreneurial	Response forecasting. Strategic product portfolio. Strategic capacity planning. Timely shift-response	Providing long-term capacity	Creating new technologies	New marketing concepts development. New markets development	Business acumen

We define average weight of business entity in the revenues of the region's business sector multiplied by region's competition intensity index (in points from 1 to 10: 0 is to non-competitive conditions, 10 is to stiff competition). We calculate it as quotient of region's production volume and number of region's business entities.

After calculating the competition intensity values we shall arrange them as follows:
- 1-2 is to low;
- 2-4 is to weak;
- 4-6 is to mean;
- 6-8 is to high;
- 8-10 is to stiff.

Weighing factor is calculated by multiplying the revenue share and competition intensity index for the certain region. The result will be minimal-stability regions with indicators of the lower range. 5 points are considered the upper value. Measures of increasing the sustainability index include developing resources of expected growth at every single line of profitability as well as evaluating the investment policy and competition status of entities.

Business entities' attractiveness is calculated as follows:

$$A = \alpha G + \beta R - \gamma T \qquad (8)$$

where *G* is to growth opportunities for business entities in the region;
R is to profitability opportunities;
T is to business sustainability;
α,β,γ are weighting factors indicating the custom entity's solutions (α+β+γ=1).
G and R ratios are calculated via specific point scales (Tables 3 and 4).

Table 3. *Evaluation of business entities' projected growth shift in the region (G)*

Factor	Intensity scale	
	-5	+5
Growth rate in the sector	decrease	increase
Dynamics of locational market development	decrease	increase
Technology renewal rate	increase	decrease
Fill rate	increase	decrease

Government regulation		tighten	ease
Other factors		unfavorable	favorable

Table 4. *Evaluation of business entities' projected profitability shift in the region (R)*

Factor	Intensity scale	
	-5	+5
Profitability fluctuations	high	none
Sales fluctuations	high	none
Price fluctuations	high	none
Demand cycle	high	none
Demand to production capabilities rate	low	high
Geographic concentration	high	low
Competition rate	high	low
Government regulation	heavy	none

Entities' competitive status is defined by set of success factors at strategic capital investments, strategy efficiency, and efficiency of entity's capacity (Bezrukova, 2016). Key success factors include most noticing features of the business entity. Identifying these features is a major priority. The key success factors are noted as follows:

1. Technology based: expert in a certain field of science; skills in production innovations; skills in developing brand-new products; expert in certain technology.
2. Production based: low-cost production; product quality; high equipment utilization rate; low cost production location; skilled labor availability; product design and efficient preproduction.
3. Staff skill based: know-how in quality management; project development experts; technology experts; fast switching from R&D to production.
4. Management based: information super-system; business sensitiveness; managerial know-how skills.

Final sequence includes decision-making depending on investment strategy (Table 5).

Table 5. *Decisions depending on the investment strategy*

Profit expectations	Capital productivity gains	Market position	Capital investments policy
+	+	Empower, retain	invest
+	0	Retain, expand	plow back profits
+	-	Go with the flow	Capture the full benefits
0	-	Slow withdrawal	Liquidate assets
-	-	Fast withdrawal	-

We could pick a proper management framework when applying indicators noted before.

Conclusion

Finally, effective management leads the regional business system to the ultimate goal applying a set of performance evaluation tools. Methods of management depend on the market environment and its sustainability. We recommend applying four types of well-known methods: control-based, extrapolation-based, forecasting-targeted (strategic planning, strategic position determination); flexible decisions-based (strategic objectives ranking, weak signals management, contingency management). Obviously, the management pattern shifts at environment sustainability's decreasing. Usually, deepening the management pattern leads to increasing of costs and turns to be deleterious when the external environment is stable (Stepanova, 2015; Nikolova *et al.,* 2917; Theriou 2015; Stroeva *et al.,* 2015).

Thus, precision in calculating the environment instability index and establishing the optimal management framework are the major objectives of business entity (Morkovina, 2016; Carstina *et al.,* 2015; Arslan-Ayaydin *et al.,* 2014). In terms of strategic development, the framework includes indicators of reasonable achievement results as well as obtaining competitive edge at milestone positions along with highlighting key features like index values' ranking that allows planning and justifying the pick of proper strategy and evaluate the achieved results.

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