

[https://doi.org/10.52326/jss.utm.2021.4\(4\).10](https://doi.org/10.52326/jss.utm.2021.4(4).10)
UDC 005:658.7



FORMATION OF A PORTFOLIO OF KEY COMPETENCIES IN THE MANAGEMENT OF ECONOMIC ACTIVITIES

Yulia Vertakova^{1*}, ORCID ID: 0000-0002-1685-2625,
Maria Klevtsova², ORCID ID: 0000-0003-0188-2263,
Alexander Orlyk³, ORCID ID: 0000-0001-5235-460X

¹Financial University under the Government of the Russian Federation, Lomonosova 3, Kursk, Russian Federation

²Southwest State University, 50 Let Oktyabrya Street, 94, Kursk, Russian Federation

³Moscow City University of Management of the Moscow Government Yu.M. Luzhkova, Moscow, Russian Federation

*Corresponding author: Yulia Vertakova, vertakova7@yandex.ru

Received: 09. 15. 2021

Accepted: 11. 12. 2021

Abstract. The article shows the methodological aspects of the formation of a portfolio of key competencies in the implementation of the management process. Applied calculations are carried out on the example of procurement management. The system of key competencies of the procurement management process, from our point of view, is a complex of elements interconnected and interacting to achieve sustainable competitive advantage and synergy effect, as well as highlighting the criteria for the development of key competencies of the process under study. The aim of the study is to form a portfolio of key competencies in procurement management. It was revealed that it is the key competencies, in contrast to the potential ones, that will contribute to the effective implementation of the process or the development of the organization. In this regard, it seems appropriate to highlight the factors that influence the formation of key competencies. The features of the selection of the system of key competencies from the set of potential competencies on the basis of economic and mathematical modeling are shown. The authors have developed a matrix "status risk", which is a visualization of the correlation between the status of competence and the level of its problemativeness. As a result of the study, a profile of competencies was formed, which allows us to identify, in the future, two main directions of their development: 1) increasing the status of competence by increasing the level of importance; 2) reducing the level of risk due to more effective management. The proposed methodology is universal and allows the formation of key competencies of a company or process.

Key words: *key competencies, procurement, management, competency portfolio, competency profile.*

Rezumat. Articolul prezintă aspecte metodologice ale formării unui portofoliu de competențe cheie în implementarea procesului de management. Calculele aplicate sunt efectuate pe exemplul managementului achizițiilor. Sistemul de competențe cheie ale procesului de management al achizițiilor, din punctul nostru de vedere, este un complex de elemente interconectate și care interacționează pentru a obține un avantaj competitiv sustenabil și

efect de sinergie, precum și evidențierea criteriilor de dezvoltare a competențelor cheie ale procesului. Scopul studiului este de a forma un portofoliu de competențe cheie în managementul achizițiilor. S-a relevat faptul că competențele cheie, spre deosebire de cele potențiale, vor contribui la implementarea eficientă a procesului sau la dezvoltarea organizației. În acest sens, pare oportun să evidențiem factorii care influențează formarea competențelor cheie. Sunt prezentate caracteristicile selecției sistemului de competențe cheie din setul de competențe potențiale pe baza modelării economice și matematice. Autorii au dezvoltat o matrice „risc de statut”, care este o vizualizare a corelației dintre statutul de competență și nivelul problematicii acesteia. În urma studiului s-a format un profil de competențe, care ne permite să identificăm, pe viitor, două direcții principale de dezvoltare a acestora: 1) creșterea statutului de competență prin creșterea nivelului de importanță; 2) reducerea nivelului de risc sau problematicitate datorită managementului mai eficient. Metodologia propusă este universală și permite formarea competențelor cheie ale unei companii sau proces.

Cuvinte cheie: *competențe cheie, achiziții, management, portofoliu de competențe, profil de competență*

Introduction

The creation of key competencies is advisable not only for organizations, but primarily for personnel, which is especially important within the framework of solving such a strategic task as public procurement management. The main goal of creating the latest competencies is to ensure the long-term competitive advantage of a process, organization or product.

In the economic literature, researchers focus more on key competencies as the main source of competitive advantages.

At the same time, the relationship between these categories is applied in various fields of activity. However, the main problem in the study of key competencies is the issue of their identification.

The complexity of this process is due to the fact that key competencies are a category that is problematic to define directly and inaccessible to direct perception. When developing tools and methods for the formation of key competencies, it is necessary to take into account the specifics of their identification. Note that since the appearance of the works of G. Hamel and K. K. Prahalad (Hamel and Prahalad, 1994) [1], there is still no universal approach to identifying the key competencies of an organization. Some economists (Albanese, 1989; Ashworth and Saxton, 1990; Bani-Hani and Al-Hawary, 2009; Spencer, 1993; Polozhentseva, Y. et al, 2019) argue that it is necessary to operationalize this process, highlight the various stages diagnostics of key competencies [2 - 6].

Economists debate the relationship between resources, organizational capabilities and core competencies (Ljungquist, 2007) [7], but there is no standard, universally accepted definition of the term (Mooney, 2007) [8].

To form a set of competencies, you can use the so-called competency libraries (vocabularies), consisting of a set of competencies, from which you should choose when developing a competency structure. Similar competencies (the job family competency system) describes a number of different roles that perform the same job. In particular, when analyzing individual competencies, this approach will provide the employee with information for career growth and promotion. Technical and leadership competencies will help shape the core competencies of an organization or process.

Materials and methods

The research is based on the generalization of theoretical material on the selected problems, analysis of factual data from open sources.

Results and discussion

Many economists have conducted research on the number of competencies in the formation of a system of key competencies. Although there is no generally accepted opinion, various authors and practitioners agree that the number of competencies in one competency profile should not exceed 12 competencies (Boyatzis, 1982) [9].

The larger number makes it difficult to use and manage the framework (profile) of key competencies. Schippmann J.S. (Schippmann, 2010) [10]. also noted that depending on the job and the organizational environment, a group of 7 to 9 generic competencies is usually required to complete a specific job. The very large number of competencies makes it difficult to assess them. However, it is widely believed that the more detailed the model, the more adequately it describes the objects and processes under study. He argued that the identification of a very large number of competencies and a detailed explanation of them leads to a situation where a large set of competencies is created. However, in his opinion, it is more important that a certain "erosion" of the importance of competencies does not occur.

Based on a strategic analysis with the participation of an expert group, we have formed a set of potential competencies for the public procurement management process.

At the next stage of the research, the formed basic system of potential competencies was broken down into separate types or levels. It is proposed to distinguish the following types of competencies:

- process core competencies are the result of a complex interaction of individual methods, technologies, tools, knowledge and skills, which provides a more efficient, in comparison with competitors, implementation of individual processes related to public procurement activities;

- systemic core competencies - unique systems that allow differentiating individual elements of the process and create additional value for consumers. At the same time, they are necessary for the development of process key competencies, since they have greater integrity,

- individual key competencies - unique knowledge, skills and abilities of individual employees of contract activities, are supportive for process and systemic key competencies, difficult to imitate and widely used (Table 1).

For the subsequent formation of a set of key competencies, a group of features of key competencies was presented and compared the potential competencies, features were developed and identified.

Signs of key competencies are also divided into three components, including: 1) external signs (Hamel-Prahalad test) - a standard assessment of key competencies; 2) additional external signs associated with the development of the macrolevel of the economic system; 3) internal signs associated with the development of internal processes, elements, etc. (Table 1).

Table 1

Basic system of potential competencies		
Types of competencies		
Process core competencies	System core competencies	Individual competencies
1) flexibility of the system of interaction with suppliers	13) the use of modern business models of procurement management;	17) the demand for personnel by organizations by competitors;
2) the ability to quickly find suppliers	14) the use of electronic systems in procurement;	18) the ability to quickly adapt personnel to changes
3) monitoring of violations in the field of procurement and the search for tools to reduce the level of violations;	15) taking into account regional peculiarities when conducting procurement control;	19) the constancy of the staff, in particular, leading specialists
4) constant search for tools and mechanisms to improve the efficiency and effectiveness of procurement activities;	16) focusing on financial control procedures based on the pricing mechanism;	20) the level of development of managerial skills of employees of the contract service;
5) high level of procurement transparency,		
6) competent determination of suppliers (contractors, performers);		
7) targeted monitoring and audit in the field of procurement;		
8) control of the customer's responsibility for the procurement results;		
9) additional planning and coordination of procedures by all customers;		
10) simplification of the process of standardization of purchased works, goods, services;		
11) the effectiveness of the management structure, organizational communications in the field of procurement;		
12) the use of the "effect of specialization" in the construction of the organizational structure of management in the field of procurement;		

Source: developed by the authors.

Since individual features intersect and partially repeat each other, then for further research we will use a more abbreviated list of competency features, which do not include such features as durability, uniqueness, consistency, validity, individuality (Table 2).

Table 2

Differentiation of signs of key competencies: external and internal	
Feature	Characteristic
Hamel-Prahalad test (external signs)	
Value	create additional consumer value for the consumer
Erudition	widely used and allows increasing market potential and securing market positions in the future
Differentiation	hard to copy and hard to imitate труднокопируемы и трудноимитируемы
External (additional) signs	
Durability	characterizes the degree of protection of competencies from competitors
Sustainability	the degree of stability of key competencies from the standpoint of the formation of the functional subsystem of the organization as a whole.
Complexity	competence is greater than technology or key characteristics
Uniqueness key	competencies form competitive advantages only if they are unique
Relevance	the competence meets the modern requirements of the development of society
Internal signs	
Consistency	a combination of a synergistic effect on the one hand and the impossibility of copying on the other
Synergy	taking into account the mutual influence of various factors
Temporary	the time for accumulating competence cannot be reduced
Competence affiliation	formed by different departments, but used by the entire organization
Use of competence	competence is not depreciated, but rather develops over time
Resource intensity	additional resources are required to transform core competencies into competitive advantages
Flexibility	the ability to change and adjust to the influence of the situation, conditions
Validity	based on knowledge, not coincidence
Individuality	present only within one business system

Source: developed by the authors.

At the initial stage of the study, evaluated the identified potential competencies based on comparison with the characteristics of key competencies, i.e. potential competencies that receive the highest scores can become core competencies. Table 3 shows the correspondence of potential competencies to the characteristics of key competencies. And based on the total values, the conformity assessment was carried out from 1 to 5 ("5" - 11-12 matches; "4" - 8-10 matches; "3" - 5-7 matches; "2" - 3-4 matches; "1" - 1-2 correspondences) (Table 3).

As a result, competencies were selected that correspond to 10 or more attributes of key competencies and, accordingly, received an assessment of "4-5". At the next stage of the research, authors build a portfolio of potential competencies according to two criteria: the status of the potential competence and its problematic nature.

Diagnostics of the status of competencies was carried out on the basis of an assessment

Table 3

Compliance of potential competencies with the characteristics of key competencies																						
Signs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Σ	
Value for the consumer		+		+		+				+	+	+	+	+	+	+					+	11
"Erudition"		+	+				+				+	+		+	+	+					+	9
Differentiation				+	+							+		+	+	+					+	7
Sustainability			+	+			+				+	+	+	+	+	+					+	10
Complexity											+	+	+	+	+	+					+	7
Relevance	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	20
Synergism						+	+					+	+	+	+	+	+	+			+	8
Temporal											+	+		+	+	+	+	+	+	+	+	6
Accessories			+	+			+				+	+		+	+	+					+	9
Using								+			+	+	+	+	+	+					+	8
Resource intensity	+	+			+		+							+		+					+	7
Flexibility	+	+	+											+	+	+	+	+	+	+	+	7
Σ	3	5	5	5	3	3	5	3	1	2	8	10	6	12	11	12	4	4	3	12		
Grade	2	3	3	3	2	2	3	2	1	1	4	4	3	5	5	5	2	2	2	5		

Source: developed by the authors.

of the importance index (I importance) of competencies, calculated on the basis of an expert assessment of the degree of influence of this competence on the implementation of the public procurement process and a compliance index reflecting the level of compliance of potential competencies with the characteristics of key competencies.

The status of the competencies is assessed according to the formula: $St = I_{importance} + I_{conformity}$. This index is the status of competencies, since it characterizes the main sources of the formation of key competencies. The status shows the "strongest" competencies in key business processes in the implementation of the public procurement process. The assessment is carried out in tabular form by an expert on a five-point scale (Table 4).

Table 4

Formation of a portfolio of potential competencies in the public procurement management process

Competence	Potential competencies	I importance	I compliance	St	Status level
1.	flexibility of the system of interaction with suppliers	1	3/12	1,25	low
2.	the ability to quickly find suppliers	1	5/12	1,42	low
3.	monitoring of violations in the field of procurement and the search for tools to reduce the level of violations	3	5/12	3,42	average
4.	constant search for tools and mechanisms to improve the efficiency and effectiveness of procurement activities	3	5/12	3,42	average

Continuation Table 4

5.	high level of procurement transparency	3	3/12	3,25	average
6.	competent determination of suppliers (contractors, performers)	1	3/12	1,25	low
7.	targeted monitoring and audit in the field of procurement	3	5/12	3,42	average
8.	control of the customer's responsibility for the procurement results	1	3/12	1,25	low
9.	additional planning and coordination of procedures by all customers	1	1/12	1,08	low
10.	simplification of the process of standardization of purchased works, goods, services	1	2/12	1,17	low
11.	the effectiveness of the management structure, organizational communications in the field of procurement	5	8/12	5,67	high
12.	the use of the "effect of specialization" in the construction of the organizational structure of management in the field of procurement	5	10/12	5,83	high
13.	the use of modern business models of procurement management	5	6/12	5,5	high
14.	the use of electronic systems in procurement	3	12/12	4	average
15.	taking into account regional peculiarities when conducting procurement control	3	11/12	3,92	average
16.	focusing on financial control procedures based on the pricing mechanism	5	12/12	6	high
17.	the demand for personnel by organizations by competitors	1	4/12	1,33	low
18.	the ability to quickly adapt personnel to changes	1	4/12	1,33	low
19.	the constancy of the staff, in particular, leading specialists	1	3/12	1,25	low
20.	the level of development of managerial skills of employees of the contract service	5	12/12	6	high

* I the importance of competence for the implementation of the goal of comprehensive improvement of the public procurement process, "5" high, 3-medium, 1-low

I conformity-conformity of competence to a system of attributes. Source: developed by the authors.

When analyzing the risk index (problematicity), one should take into account not only the number of possible problems that arise during the implementation of a certain key competence, but also the impact on the result of the process.

At the next stage of the study, a “status-risk” matrix was constructed also for all competencies. This matrix (Table 5) is a visualization of the correlation between the status of competence and the level of its problematicity (risk).

Table 5

Status-risk matrix			
Status	Risk (problematic)		
	c high	b average	a low
A high	13	11	12, 16, 20
B average	5	7	3, 4, 14, 15
C low	1, 8, 18	2, 9, 10, 17, 19	6

Key competencies based on the “status-risk” matrix include those that show a combination of a high level of status and a low level of risk (quadrants AA, AB, BA). You should also pay attention to the potential competencies of the CA quadrant (Table 6), for which a high status is combined with a high level of problematicity (Table 6).

Table 6

The system of key competencies in the public procurement process		
No	Competence	Quadrant number
3.	monitoring of violations in the field of procurement and the search for tools to reduce the level of violations	Ba
4.	constant search for tools and mechanisms to improve the efficiency and effectiveness of procurement activities	Ba
11.	the effectiveness of the management structure, organizational communications in the field of procurement	AB
12.	the use of the “effect of specialization” in the construction of the organizational structure of management in the field of procurement	Aa
14.	the use of electronic systems in procurement	Ba
15.	taking into account regional peculiarities when conducting procurement control	Ba
16.	focusing on financial control procedures based on the pricing mechanism	Aa
20.	the level of development of managerial skills of employees of the contract service	Aa
13.	use of modern business models of procurement management (competence is questionable)	Ac

Source: developed by the authors.

Thus, on the basis of the “status risk” matrix and identifying the correspondence of potential competencies to the characteristics of key competencies, authors have formed a system (set) of key competencies for the procurement process with the participation of the state.

This characteristic of key competencies allows you to form a profile of competencies and highlight, in the future, two main areas of their development: 1) increasing the status of competence by increasing the level of importance and exploring additional opportunities for using one or another key competence; 2) reducing the level of risk or problematity due to more efficient management (Table 7).

Table 7 presents in the profiles of the key competencies of the public procurement process. According to the results of the study, almost all competencies (with the exception of 13) can be attributed to key competencies. Competence "using modern business models of procurement management" was excluded due to the low profile score.

Table 7

Profiles of key competencies in the public procurement process

Nº	Competence	Number quadrant	Assessm ent of compete -ncies	Status	Risk (problema -tic)	Asse- sment of the profile
3.	monitoring of violations in the field of procurement and the search for tools to reduce the level of violations	Ba	3	3,42	-1	5,42
4.	constant search for tools and mechanisms to improve the efficiency and effectiveness of procurement activities	Ba	3	3,42	-1	5,42
11.	the effectiveness of the management structure, organizational communications in the field of procurement	Aa	4	5,83	-3	6,83
12.	the use of the "effect of specialization" in the construction of the organizational structure of management in the field of procurement	Ab	4	5,67	-1	8,67
14.	the use of electronic systems in procurement	Ba	5	4	-1	8
15.	taking into account regional peculiarities when conducting procurement control	Ba	5	3,92	-1	7,92
16.	focusing on financial control procedures based on the pricing mechanism	Aa	5	6	-1	10

Continuation Table 7

20.	the level of development of managerial skills of employees of the contract service	Aa	5	6	-1	10
13.	the use of modern business models of procurement management	Ac	3	5,5	-5	3,5

Source: developed by the authors.

Based on the results obtained, competency maps were built for three types: systemic key competencies, process key competencies and individual key competencies.

In the process of developing a portfolio of key competencies in the public procurement process, authors identified the tasks of forming key competencies, i.e. it is shown that the identification of key competencies will support the process, improve and provide a resource component. As a final element of the research, a portfolio of key competencies was developed, reflecting both the functionality and directions of key competencies, and assessment of the profile (Table 8). Building this portfolio of key competencies in the implementation and management of the public procurement process will make it possible to make effective management decisions within the framework of strategic management.

Table 8

Portfolio of key competencies in the public procurement management process

№	Competence	Functional	Formation tasks	Profile rating
3.	monitoring of violations in the field of procurement and the search for tools to reduce the level of violations	process	support	5,42
4.	constant search for tools and mechanisms to improve the efficiency and effectiveness of procurement activities	process	support	5,42
11.	the effectiveness of the management structure, organizational communications in the field of procurement	process	support	6,83
12.	the use of the "effect of specialization" in the construction of the organizational structure of management in the field of procurement	process	support	8,67
14.	the use of electronic systems in procurement	systemic	improvement	8
15.	taking into account regional peculiarities when conducting procurement control	systemic	improvement	7,92

Continuation Table 8

	focusing on financial control			
16.	procedures based on the pricing mechanism	systemic	improvement	10
	the level of development of			
20.	managerial skills of employees of the contract service	individual	using	10

Source: developed by the authors.

The structure and portfolio of key competencies represent a complex interconnection of techniques, tools, skills, technologies within the framework of various functionalities (process, individual, system). Therefore, it is inappropriate to talk about one key competence when describing public procurement processes. It is necessary to consider a holistic system that includes various elements. Such an approach will create conditions for the formation of a synergistic effect and harmonization of individual elements of a set of key competencies.

Conclusion

Note that it is the key competencies, in contrast to the potential ones, that will contribute to the effective implementation of the process or the development of the organization. In this regard, it seems appropriate to highlight the factors that influence the formation of key competencies.

Thus, the analysis of the tool base for the formation of key competencies made it possible to identify the relative limitations of its application and to form its own approach with approbation on the implementation of the procurement management process. The developed author's methodology for identifying key competencies in managing the procurement process will allow not only to regulate the process in the current period, but also to implement the functions of proactive management by expanding key competencies.

Acknowledgments. The study was supported by the grant of the President of the Russian Federation for state support of the leading scientific schools of the Russian Federation NSh-2702.2020.6 "Conceptual foundations of a new paradigm of economic development in the era of technological and social transformation".

References

1. Hamel G., Prahalad C.K. Competing for the Future. In: *Boston, Harvard Business School Press*, 1994.
2. Albanese C. Competency-based management education. In: *Journal of Management Development*. 1989, Vol. 8. No. 2. pp. 66-76.
3. Ashworth P.D., Saxton J. On competence. In: *Journal of Further and Higher Education*, 1990, Vol. 14. pp. 3-25.
4. Bani-Hani J. S., Al-Hawary F. A. The Impact of Core Competencies on Competitive Advantage: Strategic Challenge. In: *International Bulletin of Business Administration*, 2009, Issue 6
5. Spencer L., Spencer S. *Competence at Work : A Model for Superior Performance* [New York : Wiley. 1993, 301 p.
6. Polozhentseva Y, Klevtsova M., AND leontyev E. Effects of the economic space digitalization in the context of modern society transformation. In: *ECONOMIC ANNALS-XXI*, 2019, 180 (11-12) , pp.78-87
7. Ljungquist U. *Core competency beyond identification: presentation of a model* // *Management Decision*, 2007, № 45 (3). P. 393–402.
8. Mooney A. Core Competence, Distinctive Competence, and Competitive Advantage: What Is the Difference?, 2007. In: *Journal of Education for Business*. № 83 (2). pp. 110–115.
9. Boyatzis R. *The Competent Manager. A Model for Effective Performance*, Wiley, 1st edition, 1982.
10. Schippmann J.S. *Competencies, job analysis, and the next generation of modeling* In: *J. C. Scott & D. H. Reynolds* (Eds.), 2010, *Handbook of workplace assessment*. pp.197 – 231