

Factors that affect corporate agility of a construction company

Jevgenijs LOCOVS

**Faculty of Engineering Economics and Management, Riga Technical University
Kalnciema iela 6, Riga, LV1048, Latvia**

Elina GAILE-SARKANE

**Faculty of Engineering Economics and Management, Riga Technical University
Kalnciema iela 6, Riga, LV1048, Latvia**

ABSTRACT

Among the world's largest industries, construction is one of the most overregulated and over-segmented. Most of its players, especially big ones that consolidate major part of the orders, chase the turnover and try to scale their operations due to both very small margins and low productivity. In the conditions of everchanging environment, especially for emerging markets from Central and North Europe, corporate agility becomes vital for the survival of a construction company. Demanding clients, multinational operations, new regulations, lack of trained and loyal professionals, unstable partners, global and local crises – all of them force construction contractors to be prepared for any unexpectedness at any given moment. There are many ways how to achieve agility taking into account the development level of the company. However, in order to treat the problem it is necessary to determine the factors that affect the corporate agility of a construction company. Only after these are detected, the company's management can start to deploy necessary changes to improve organizational agility and, as a result, operational and financial data of their enterprise.

Keywords: corporate agility, agile management, business process agility, construction industry.

1. INTRODUCTION

Modern business environment in general and construction industry in particular of the EU emerging markets experience growing competition, huge data flow, higher quality and safety demands, clients' wishes to have cheaply operated and multifunctional buildings, etc. Rapid growth of world population and its migration overload the existing infrastructure, where one exists, and requires holistic investments in new infrastructure in the undeveloped and emerging regions.

The aim of this research is to determine the factors that directly influence corporate agility of a construction company. The research object – a construction company - shall be observed and studied to reveal its weaknesses and strengths that in their turn shall expose the research

subject of agility factors that affect the company's performance.

According to the McKinsey report [1], construction is one of the biggest industries that maintains a turnover of circa 10 billion USD and employs about 7% of the world population.

The construction process is a collective and resource consuming activity. Each and every project requires involvement of many architects and engineers, coordination of significant number of manpower on site and outside it, sophisticated logistics, a big number of transactions, legal and IT support, cooperation with the clients and other stakeholders, while the budget and time schedule are being kept.

Such everchanging business environment requires the company to show great flexibility to maintain its competitive advantages. New organizational practices, a new corporate structure, new patterns of organizational behavior and investments in human capital become a daily challenge for any entity. As a result, interest in organizational agility has grown exponentially for researchers and practitioners [2]

These daily challenges do leave room for thinking and discussions, the intuition steps to the front, and rapidly changing external and internal factors on the one hand force managers to make quick decisions, on the other hand they require revisions and adjustments in a non-stop mode. The key term is a quick reorganization and adaptation to new conditions, whilst minimum time and resources are used. All mentioned above force the numb construction sector to face not an easy choice of either reorganizing towards agility or stepping out of the operational scene.

The long line of academic researches was gone through by thousands of scholars trying to define an ideal company. For the sake of truth, we have to admit that the construction industry was less investigated, but still there are thousands of papers that suggested different patterns for "right" management and structuring of the company. However, most of them originated in the theories of the beginning of the previous century where the mechanization of processes resulted in belief that the "conveyor line" system works fine for almost all.

It is not. A century later we face totally new working conditions and challenges. These in their turn require an open mindset, broad thinking and agile approach both from each employee and the corporation where she/he works.

It is a fact that corporate agility is a modern trend that plays a key role in the survival of a modern construction company. The research methodology used for this research includes the following methods: systematic literature review, literature overview, qualitative content analysis, interviews with industry professionals, a triangulation method of verification.

2. THE DEFINITION OF “CORPORATE AGILITY”

The origins of corporate agility are found in the Contingency theory. What was summarized into the core idea of the contingency theory is that there is no one best way to lead people or to design an organization including its structure and processes. Rather, the central premise is that the choices which are made must fit the situation faced. [3]. According to Lorsch & Tierney [4] contingency theory deals with relationships within the organization, the environment the organization is acting in, and performance of the organization in that particular environment. In other words the decisions or actions taken in one particular situation by one particular group or entity, most probably, are made to suit and cannot be “blindly” copied or implemented. According to Mintzberg, the Contingency theorists opposed the notion of one best structural form; instead they sought to identify a particular alternative structural form that was most appropriate under a specific set of conditions [5]. F. Fiedler (1964) determined that there was no one best leadership style, while the effectiveness of the leader was based on the situation. Further development of the Contingency Theory was summarized by J. Galbraith (1973) making two basic assumptions. Firstly, there is no one best way to organize. Secondly, any way of organizing is not equally effective [6]. At the beginning of the 1990s, the term of agility spread in the IT sector resulting in the creation of the Agile Manifesto in 2001. The authors of the Agile Manifesto were united by the belief that, to succeed in the new economy, to move aggressively into the era of e-business, e-commerce, and the web, companies must rid themselves of make-work and arcane policies and place individuals and interactions over processes and tools, working product over comprehensive documentation, client collaboration over contract negotiation, and responding to change over following a plan [7]. Adizes [8] found that younger organizations showed more flexibility, while as they were aging the controllability increased on account of flexibility. As a result, the organization increasingly loses touch with its environment, the environment changes faster than the organization’s ability to adapt. He determines “Prime” as the optimal position on the lifecycle, where the organization finally achieves a balance between control and flexibility. In other words, we can summarize that there is no one universal way of

structuring and managing an organization. Even more than that, the company’s staff should apply different approaches and patterns reflecting the factors and challenges that affect the organization or its part from ever-changing internal and/or external environments. The recent study of McKinsey (2019) [9] found that organizations across sectors from banking to pharmaceuticals, from energy to the public sector, are realizing the immense value that agility can bring: faster, higher-quality decision making, better-quality products, faster delivery, and stronger employee engagement. There is no one accepted definition of the corporate agility. It was initially promoted by the pioneers of the software development that sought for a quick and flexible way to solve problems and proceed further with the development of their products. However, the following definitions include most of the essence of the term “corporate agility”:

- **Agility** is the efficiency with which organizations respond to continuous change by consistently adapting. [10] ;
- **Agility** is the capacity of an organization to efficiently and effectively redeploy/redirect its resources to value creating and value protecting (and capturing) higher yield activities as internal and external circumstances warrant [11];
- Enterprise **agility** is a complex, multidimensional, and context-specific concept, comprised of the ability to sense environmental change and quickly respond to unpredicted change by flexibly assembling resources, processes, knowledge, and capabilities [12];
- **Agility** is the capacity to identify and capture opportunities more quickly than rivals do. [13].

We use the following definition for the purpose of this research: **corporate agility is a company’s ability of reorganization and / or adaptation to any change or challenge within the shortest time period whilst using minimum resources.**

As we may see all these and many other researchers (Adizes, De Smet, Erande & Verma, Aghina, Lackey, Verdu and Gomez-Gras, Pal & Pantaleo, Cappelli and Tavis, etc.) consider **agility as a key to the success of any company**. They recommend using and maintaining agility for each and every industry. It should become a DNA of the company, while being implemented in each and every procedure, document, training, way of thinking and doing. The earlier the organization realizes the need for balanced and controlled agility, the better results it achieves. It is difficult to make a big bureaucratized company agile, since it usually focuses on the procedures, documents and witches’ hunting, rather than problem solving and process optimization.. The given research does not deal with the startup level companies, where all processes are very flexible due to minimal staff and lack of procedures.

The biggest challenge for such adaptation is faced by mature and big companies. For decades, many of them dictated what the working environment should look like,

and now, suddenly, they have to adjust themselves. The destiny of such companies, where bureaucracy prevails on real needs, is to disappear or to transform. The dynamics of internal and external environment leave no other choice.

According to many authors [14] [15] and others, there are a few core things that characterize corporate agility:

- Flat structure with quick decision making;
- Fast adaptation to new needs and changes;
- Professional multifunctional teams supported by well-planned motivational programs;
- Excellent exchange of information: communication between the teams/departments and close cooperation with the clients;
- Ability to split problems into modules and later integrate overall solution provided by different teams.

As one can find, most of the factors mentioned above make the role of Human Resources (hereinafter HR) and Organizational Structure more and more important. Managers have to lead by example and deploy agility in all procedures and structures of the company. The internal synergy should lead to the change of external habits. The communication with the clients, the restructuring of the relationships with the suppliers, or entering a new market all should be guided by positive attitude and ability to adapt and to deal with any unexpectedness or change of circumstances.

3. CONSTRUCTION SECTOR, CONSTRUCTION COMPANIES AND MAIN CHALLENGES.

As was mentioned above, the global construction sector provides a large number of workplaces (about 7% out of total number) and supplies 13% of global GDP. McKinsey [1] found that from the very beginning till nowadays construction has been one of the most resource-consuming sectors. The most ancient building, the ruins of which have remained up to these days, the almost 12 000 year-old temple at Gobekli Tepe, Turkey [16] required a huge physical effort of the workers that built it. At those times, the client enjoyed the cheap work force (slaves or prisoners) and cheap materials that in most of the cases belonged to the client (king, temple, etc.) or to nobody. The main challenge was the equipment or mechanization of the process. Nowadays, there are no more slaves or free materials, but technological equipment allows saving time and replacing the vast amount of manpower that was necessary even 100-200 years ago. The construction process requires involvement of many people. Hundreds of architects, client representatives, engineers, suppliers, blue-collar workers, supervisors, bank and state officials and others shall be involved even in a midsize project. In order to discuss the agility factors in a construction industry we should understand what is construction and what are construction companies.

There are the following definitions of construction:

- Construction – the action of building something, typically a large structure. [17]
- General construction and specialized construction activities for buildings and civil engineering works. It includes new work, repair, additions and alterations, the erection of prefabricated buildings or structures on the site and also construction of a temporary nature. General construction is the construction of entire dwellings, office buildings, stores and other public and utility buildings, farm buildings, etc., or the construction of civil engineering works such as motorways, streets, bridges, tunnels, railways, airfields, harbors and other water projects, irrigation systems, sewerage systems, industrial facilities, pipelines and electric lines, sports facilities, etc. This work can be carried out on own account or on a fee or contract basis. Portions of the work and sometimes even the whole practical work can be subcontracted out. [18]

As one can see, even by definition the construction process assumes something big and complicated. So what are the entities that operate in this industry? What are the challenges they face?

As we may find from the table, Central and North European countries are not among the biggest economies of the EU. Despite being developing markets (except the Scandinavian and Finish markets) the construction companies that originate from the regions mentioned above are emerging as well. On the one hand, most of them have to overcome a heritage of very inflexible communistic economies, on the other hand, they can enjoy the benefits of globalization, common EU market and labor force costs differences to try to close the gap between them and the construction companies from the developed countries. In order to succeed, emerging economies' companies have to be able to maintain as high agility as they can. Having in mind that their local market is usually too small and/or it offers too low margins, they go global. In order to succeed, these contractors have to implement new technologies, to gain competitive advantages, to adjust themselves to new work environment trying to prove themselves in the new market and not to lose basis in the country of origin, etc.

Ashworth and Harvey [19], found that, the construction industry had problems due to outdated technology and low productivity. It was very segmented. Despite the decades passed, McKinsey [1] still names the same problems for the construction industry. On the one hand, a few big companies overtake significant sector's turnover's part; on the other hand, a number of small and midsize entities significantly exceeds this of big companies by hundreds of times. For instance, according to our analysis, the 10 biggest companies of the EU + Norway in 2017 ensured about 20% of the total turnover of the EU and Norway construction industry, while the share of Vinci (the biggest EU based company) stood about 24% out of the figure mentioned above. Having in mind that total industry turnover is combined from both general contractors' and subcontractors' turnovers (using consolidated data of affiliated companies), we may find that large scale companies' share of orders is

much bigger than their part of turnover as such. The overregulated environment and lack of high margins shape the tendencies of turnover and globalization chasing through the whole industry.

So, when drawing an outline of a construction company, most probably we can use the following descriptions:

- It provides design, or construction management or supervising, or general or particular kind of building services, or all of the mentioned above;
- It is project based and oriented;
- It has small profit margin, as a result of chasing turnover ;
- It operates in the resource-consuming sector (HR, financial, materials, equipment, etc.);
- It operates in an overregulated environment;
- It is often over-bureaucratic with low level of agility (especially big multinational entities).

We performed literature overview (Brooks & Spillane, Cardoso et al., Dan-Asabe & Radosavljevic, Barg et al., Aiyewalehinmi, Viavoice, Omotayo, Skitmore et al., Dobre, Rusu & Avasilcai, Bryson et al.) to determine the main challenges construction companies are facing. They are as follows:

- Human Resources,
- Organizational structure/performance,
- Productivity and quality,
- PESTEL (political, economic, social, technological, environmental, legal),
- Communication and marketing,
- Globalization,
- Finance.

It is important to outline that these are the industry’s challenges, which building companies should be aware of. To maintain successful operation, the sector players should deploy organizational flexibility. Such flexibility, or in other words corporate agility, will allow to spend minimum resources while trying to adapt to the ever coming changes.

4. FACTORS THAT AFFECT CORPORATE AGILITY IN A CONSTRUCTION COMPANY

As was concluded, agility is a key to a modern company’s success. However, it is important to outline that agility is not about disorder or full lack of any hierarchy. Agility is a part of organizational DNA, which integrates and synergizes, rather than mixes and messes up. The company faces both internal (complicated projects, key person leaving, etc.) and external challenges (demand’s decrease, change in legislation and other challenges). We would like to make a metaphoric comparison to ships of the Age of Discovery. In those times the captain had a very approximate understanding of both the travel and the destination before the ship left the port. His crew and ship had to be ready to face and overcome everchanging climate conditions of unknown regions, pirates’ attacks,

Table 1

EU 28 general and construction sector data. [20]

Country	Population (mln)	GDP (Eur) bln	Construction industry turnover (bln)	% of GDP
	2017	2017	2017	2017
EU 28 total	512	15 204	611	4%
1 Austria	8,77	366,6	14,84	4%
2 Belgium	11,35	433,56	26,13	6%
3 Bulgaria	7,10	50,01	2,78	6%
4 Croatia	4,15	48,27	2,34	5%
5 Cyprus	0,85	19,05	1,97	10%
6 Czech Republic	10,58	189,84	10,37	5%
7 Denmark	5,75	285,88	10,83	4%
8 Estonia	1,32	22,81	2,23	10%
9 Finland	5,50	221,66	16,66	8%
10 France	66,99	2272,6	72,53	3%
11 Germany	82,52	3236,15	61,88	2%
12 Greece	10,77	176,25	2,82	2%
13 Hungary	9,80	122,44	6,16	5%
14 Ireland	4,78	293,68	12,11	4%
15 Italy	60,59	1702,62	52,74	3%
16 Latvia	1,95	26,63	1,74	7%
17 Lithuania	2,85	41,51	2,37	6%
18 Luxembourg	0,59	54,91	3,36	6%
19 Malta	0,46	11,03	0,62	6%
20 Netherlands	17,08	727,06	42,05	6%
21 Poland	37,97	461,57	28,29	6%
22 Portugal	10,31	191,46	9,18	5%
23 Romania	19,64	186,39	8,29	4%
24 Slovak Republic	5,44	84,28	3,66	4%
25 Slovenia	2,07	42,92	1,21	3%
26 Spain	46,53	1153,96	57,66	5%
27 Sweden	9,99	473,48	32,00	7%
28 United Kingdom	65,81	2307,74	124,26	5%

rebels, diseases, cold, heat, famine, thirst, etc. Besides that, a good captain was not only responsible for the crew and ship, but he shared the same risks and led his crew by example, as a result he obtained the authority and power rooted in trust, not in fear.

Similar to our ancestors, the top management has to sail the corporate ship through threats and opportunities. It

should be well equipped and its crew should work as a whole. Different teammates should assist each other even if they serve on different decks. Nowadays, management should promote thinking out of the box, detect professional employees with passion for the job they are doing, but ready to step out of their comfort zone to assist another department. Employees' involvement and alignment of personal aims with the corporate ones are topics that distinguish a usual company from the excellent, success from failure.

In order to detect the factors that affect agility of the construction industry, we performed interviews (face to face or via video calls) and sent a questionnaire to 15 CEOs, CFOs, CLOs, Construction and HR directors in 4 countries and 11 construction companies. They were asked to list at least 5 factors that affect the corporate agility of their company. 84 factors were detected. We structured the received factors in groups attributing particular weight to each factor. The resulting table and chart are below.

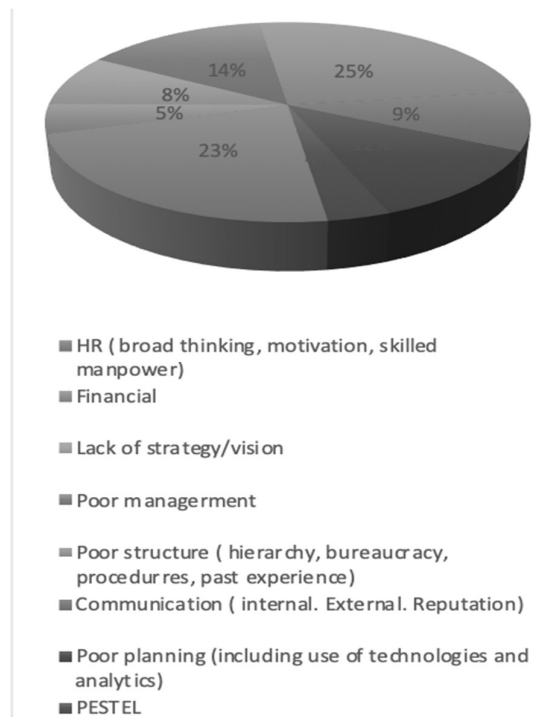


Figure 1 The weight of the factors affecting corporate agility

Table 2

The weight of the factors that affect corporate agility

#	Factor	No of answers	% of total
1	Poor structure (hierarchy, bureaucracy, procedures, past experience)	20	25%
2	HR (broad thinking, motivation, skilled manpower)	19	23%
3	Poor management	12	14%

4	Poor planning (including use of technologies and analytics)	11	12%
5	Communication (internal. External. Reputation)	8	10%
6	Lack of strategy/vision	7	8%
7	Financial	4	5%
8	PESTEL	3	4%
	total	84	100%

The table and the chart above illustrate the importance of the factors that affect corporate agility according to the opinions of modern top managers. All of the interviewed managers outlined the importance of the company's ability quickly react to the coming changes saving resources and capturing opportunities. As one can see, almost half of the weight is created by two components: Human Capital and Organizational Structure. These two components are the most important blocks in the foundation of corporate success.

8. CONCLUSIONS

Authors made a comprehensive analysis and answered the question "What are the core characteristics of corporate agility?" from general theoretical perspective, the main challenges of the construction industry were determined as well, while the top managers described the factors that affect corporate agility of their construction companies. All these three groups of factors outlined 2 most significant components that shape the agility of construction companies: **Human Capital and Organizational Structure**. We suggest the following topics for further researches:

- Detailed investigation of the influence of these two factors on corporate agility ;
- Development of an instruction of how to improve corporate agility in construction companies;
- Development of manuals for the deployment of improvements mentioned above.

As we proved, the ability of quick reorganization as a response to challenges due to ever changing environment is more than topical and requires deep and comprehensive academic analysis and research.

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