

THEORETICAL ASPECTS OF COMPETITIVENESS IN CONSTRUCTION ENTERPRISES

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Abstract. In this paper, the authors present a short review of statistics in European construction market and describe literature on management in construction – concept and definitions of competitiveness, including PARTS checklist and Project Values, and suggestions for successful marketing as well. The enhancement of the competitiveness of construction enterprises is one of the most important strategic objectives in the construction industry. The company's loss of competitiveness is its greatest threat. The focus of this paper is on improving quality and safety in construction enterprises – the research was done in order to obtain more information about quality performance measures used by building materials producers in Latvia. At the end of this paper, the authors shortly describe the results of the research.

Keywords: construction, competitiveness, quality management, promotional strategies.

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1. Introduction

As for the rest of the world, the economic situation in the Europe changed drastically towards the end of 2008. In 2008, the volume of the European Residential Construction was € 676 billion. 73% of that volume was achieved in the 5 large Western European countries: Germany (21%), France (15%), Italy (14%), Spain (12%) and the United Kingdom (11%). A further 17% can be attributed to the 6 smaller Western European countries. 7% of the volume was achieved in the 4 Scandinavian countries and 3% in the 4 Eastern European countries. After years of fantastic growth rates, residential construction is now stagnant. If we look at the forecast, there are only few countries in which the volume of residential construction will be larger in 2012 than it was in 2008. While residential construction in Norway and Poland will probably have a two-figure growth rate, Germany, for example, is expected to have a moderate revival of approximately 4%. In contrast, the volume of residential construction in France will decrease by about 5% and in Italy by nearly 9%. In five countries, the investments are likely to drop by a

two-figure rate. The decline will no doubt be particularly dramatic in Portugal (-37%), Spain (-42%) and Ireland (54%). In the 16 years from 1991 to 2007, investments in residential buildings climbed from around € 530 billion to around € 729 billion. This corresponds to an annual increase of around 2% p.a.

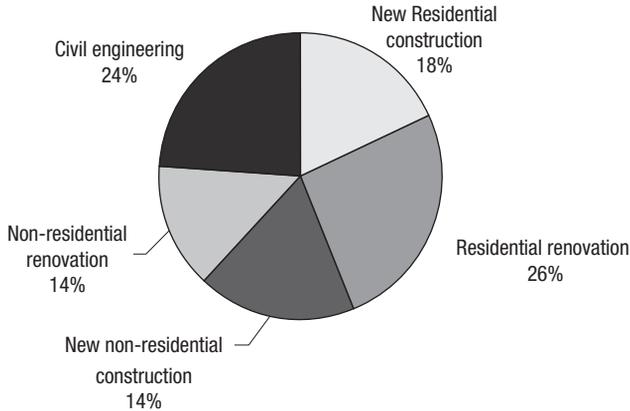


Fig. 1. European construction market structure 2009 (Source: Euroconstruct)

The five biggest non-residential markets in Europe remain France, Germany, Italy, Spain and the UK, although their share of the total output in the sector fell to 69% in 2009 from 71% in 2006. The recovery in industrial construction is still some way off and is likely to be slow. Overall industrial construction output is forecasted to be over 11% lower in 2012 than it was in 2009.

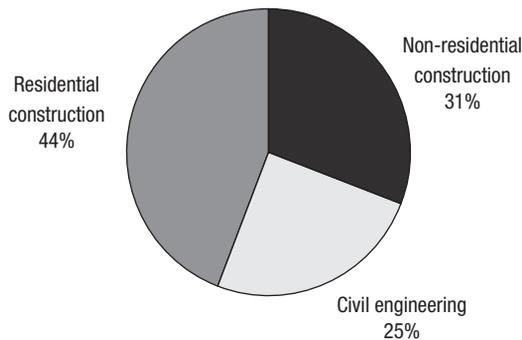


Fig. 2. Predicted construction volume in Europe 2012 (Source: Euroconstruct)

Civil Engineering works represent just over 20% of the European construction market. This makes civil engineering the third largest market in the Western Europe (21% in 2008). However, in the Eastern Europe, the civil engineering market exceeds the housing market. The current trend in both Regions, though responding to different requirements, is towards a strengthening of the civil engineering sector: between 2000 and 2008, together with the non-residential sector, civil engineering sector partly absorbed the contraction due to the residential market crisis in the Western Europe, but above all in 2012, it will absorb the reduction in the role of the whole building sector.

Competitiveness in construction industry in Latvia increased rapidly till 2008. A large number of high-quality products were produced using the latest technologies. Demand for building materials have reduced during last 3 years, so it is very important to use mostly domestic products and services to support producers in construction sector in Latvia. The construction share of the gross domestic product (GDP) was 6.5% in 2009. Specialists predict reduction of GDP in 2010 due to reduction in construction industry. However, the growth of GDP in all sectors is forecasted starting the year 2011 (construction industry for an average of 5% per year).

In the construction sector competitiveness has become one of the most actual topics. In this paper, the authors describe concepts and definitions of competitiveness and suggestions for successful marketing as well. The focus of this paper is on improving quality in construction enterprises – the research was done in order to obtain more information about quality performance measures used by building materials producers in Latvia. At the end of this paper, results of the research are shortly described.

2. Competitiveness – concept and definitions, the Five Forces Model, PARTS checklist

Competitiveness is adopted as a management or economics idea that is superior to the traditional economic indicators such as profitability, productivity or market share, which are seen as being insufficient to enable continuous improvement of performance. The increasing emphasis on the importance of competitiveness stems not only from its ability to enable sustainable growth, but also from dynamic competition in today's world. It is generally accepted that globalization accounts for the increased importance of competitiveness. Globalization has created an interconnected and interdependent world; it converts the world into a complex and multifaceted dynamic place with free competition and free trade. Development of competitiveness is the major strategy for competing in this context. Competitiveness as a subject comprises different levels of analysis. Investigations of competitiveness can be conducted from the perspective of a nation, industry or enterprise, each level being significantly different. Figure 3 is a framework for analysing competitiveness research in the construction sector. Four levels of analysis can be observed, namely, nation, industry, organization and the project level.

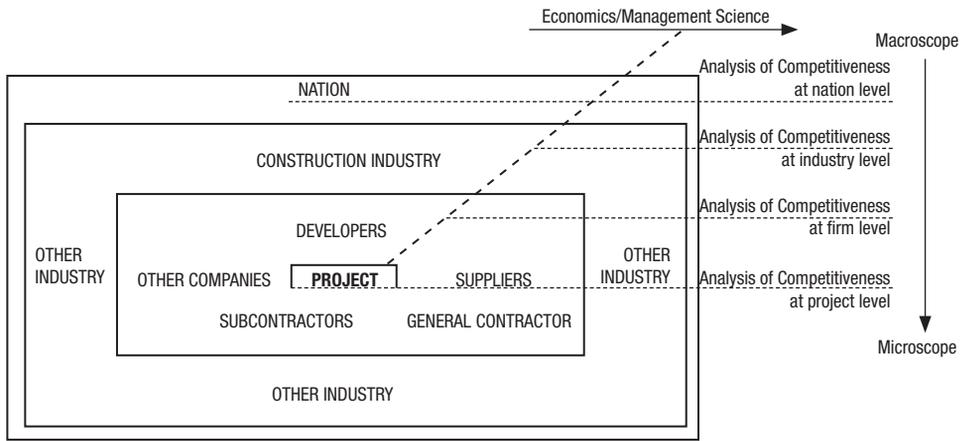


Fig. 3. A framework for analysing competitiveness research in the construction sector (Source: R. Flanagan 2007)

The analysis relates itself to the management and economics sciences. The following sections will review competitiveness research from three perspectives: the construction industry level, the construction firm level, and the construction project level. Within each perspective, there will be a summary of general issues, measuring competitiveness, challenges, and research questions. Many firms work hard to encourage competitiveness from an industry perspective. These efforts may include regulating market competition, promoting best practice in the whole industry, benchmarking the competitiveness of the construction industry in different countries. There are some essential research questions: What is the competitiveness at the construction industry level? Is it meaningful to use a composite index to indicate the competitiveness of a given construction industry? What is a healthy construction industry, for example, with good business environment, reasonable intensity of competition, or proper economic policy? How can the construction industry as a community foster the development of competitiveness of its firms?

Porter's theory for firm's competitiveness is characterized as the industrial organization view of competitive advantage. Major components in Porter's theory are the five competitive forces model; the three generic competitive strategies; and the value chain (Flanagan 2007).

The Five Forces Model was developed by Porter as a summary of the main forces, which determine how attractive an industry will be. This is a well-known model, frequently used by management consultants when analysing the state of an industry and its main companies. Each force has a number of components and can have a positive or negative effect on the industry. The combination of the forces and the balances between them, allows us to summate how great the competitive forces are likely to be.

The central force, the intensity of rivalry or competition within the immediate market, provides the platform for gauging the intensity of competition. Porter's research

has shown that there are a number of tell-tale signs which can be analysed to build up a picture from which it can be deduced if the industry is a highly competitive low profit market or if competition is low intensity and profits are fat. The tell-tale signs include: (1) Industry growth – there is an implicit assumption that growing businesses are the only type of healthy business. All the companies in one sector can grow only if the market itself grows. Thus, a growing market is viewed as a sign of good prospects for the companies in the sector. (2) Balance of competitors – many markets or sectors will have two or three main rivals and a number of smaller players in the market. More intense markets will have larger numbers of equally sized players, seen as an indication of an unprofitable sector. (3) Exit barriers – the barriers to entering and leaving the market are significant factors in the health of a sector. Industries which have high levels of investment or specialist knowledge bases make it difficult for new companies to establish a presence, or for existing companies to leave during bad times. (4) Expected retaliation – the strength of a response to, for example, price cuts by one competitor is another important parameter. A slow or negligible response as a norm may indicate an industry where all players have a comfort margin or, alternatively, may show complacency. (5) The bargaining power of buyers gauges whether the buyers dominate the market and dictate the pattern and prices within the market. Likewise, the bargaining power of suppliers can be assessed in a similar manner. Likely tell-tale signs include: *Volume of purchases* – buyers or suppliers to the main players who control large volumes can have a very influential role since the flow of material or service provides them with a key lever. *Market share* – buyers or suppliers to the main players who control a large percentage of the market can have a very influential role since they have a dominant position which can translate into a control of pricing. *Switching costs* – low costs in switching from one supplier to another can be influential in reducing the power of suppliers. *Profitability* – strong buyers or suppliers can, to a certain extent, impose a level of profitability on the main players. The *threat of substitution* implies that there may be substitute products which could replace the traditional products in this particular market. The threat of substitution may also imply that there may be *new players* available to join or about to join the market and increase the competition, and again an assessment is necessary. Again likely tell-tale signs include: *Economies of scale* – industries where there is a strong economy of scale factor (i.e. the size and location of plants, offices or suppliers) tend to have a limited number of players who can play the game. This can preclude new players. *Existence of close substitutes* – products in particular have developed through the years as one product has replaced another, sometimes in a revolutionary manner. The potential for replacement products can decide how attractive an industry remains. *Switching costs* – the actual cost for buyers of switching from one product to another is a factor in the speed of turnover from one state to the other. *Access to distribution* – contractual binding, location or other factors which preclude competitors from sharing suppliers can be a factor in reducing threats.

The importance of these factors is in the degree of control a company can lever in determining its stance and price within this particular market or for a particular project.

The bottom line is in establishing how attractive a market or a particular situation will be and whether it is worth competing or ignoring it. The difficulty in assessment is that there is no right or wrong. All markets are different combinations of conditions can determine whether one or a small number of key players control the market. Thus, the analysis is subjective, and there is a degree of expertise in judging whether a particular market is attractive and competition is not too fierce.

The PARTS checklist (Brandenburger, Nalebuff 1996) provides another framework for structuring information and checking that all vital information is included. It has, to date, provided less scope for quantification methods. Its theme is excellent since it seeks to identify competitors as both competition and potential cooperating bodies, trying to redefine all aspects of the market or an opportunity as having both positive and negative potential. The framework revolves around the five terms whose initial letters form the acronym PARTS – players, added values, rules, tactics and scope. It is possible to improve the business by asking the right questions. *Players*. Which players do you work with? Can you co-operate and compete with them all? Who gains and loses when you enter a market? Who gains and loses if the rules change? Who are the players and can they be made to play together rather than against each other? *Added values*. What is the firm's competitive edge? Can it be increased? What is the added value of other players? Can the supply chain add more value than the company itself for a particular situation? *Rules*. What are the ground rules for the market and, rather than accepting them, can they be changed? What rules help and which ones hinder? Who changes the rules? *Tactics*. What are the tactics for competing? Is the game transparent or opaque? *Scope*. What is the current scope of work accepted by the main players and, rather than accepting it, can it be changed? Is the game linked to others? All of these are very useful questions, although they generally get lost in the heat of competition (Mawhinney 2008).

Technical specialists do not always think in terms of benefits; they think in terms of product features – for example, this contract will take a certain number of months, involve a certain number of people, cost a certain amount of money, require certain construction techniques, and result in a building of a certain shape and so on. Customers, however, tend to be more interested in benefits. For example, this company was quicker than others; which meant I got ahead of schedule; this company was more cost-effective than others, which meant customer saved money on his budget; this company itemized everything, which meant customer was confident that he knew where the expenditure was going; this company kept him informed throughout, which meant that he was reassured that the activity was on schedule; this company helped him build a better reputation within his own company.

It is necessary to ask the following sets of questions: What do competitors do better? Can you go one step ahead of them? What simple value-added addition will make your company more attractive than theirs? What constitutes best practice? What do the really admired companies do? Even if you are not in their league, how can you adapt and tailor what they do so that your customers appreciate the difference? What do successful

companies from other industries do that you could adapt and tailor to your company or could stimulate ideas that could be used in your company to set you apart from your competitors? (Gillen 2005). These are just a few questions which should be answered and analysing to understand needs.

3. Cost, time, quality, safety, scope, and function in construction

In 1996, a group of owners, architects, contractors, and engineers gathered in San Francisco to discuss common goals and opportunities for collaboration in the building industry. During their discussions, they came up with the factors that need to be managed and controlled on a construction project in order to produce a successful outcome for the owner and all parties involved. They referred to these factors as the Six Dials of Project Value: cost, time, quality, safety, scope, and function.

It is essential to predict and control what the construction project will cost. Costs are established, targeted, and controlled by means of an estimate or budget. As the work progresses, expenditures for materials, labor, equipment, and subcontracts are tracked and measured against the estimates. The fundamental goal is to maintain costs within or below budget parameters. The construction manager who can minimize cost while maximizing overall value to the owner will optimize the cost dial.

Time is money. For many projects, the speed with which the building can be brought on line is more important than almost any other factor. Time is monitored and controlled by a detailed schedule, breaking each item of work down into its component parts. Once all of the purchasing, fabrication, installation, and construction steps are identified, a time element is assigned to each step. The goal is to complete each of the work items within the time frame assigned. The construction management team that can guarantee the schedule and actually beat it is invaluable to the owner.

Quality is the grab bag that covers all the aspects of the building not addressed by the other five values, such as aesthetic impact, user perceptions, and appropriateness of building materials, and so on. Quality is monitored and controlled by a variety of means, including specifications, punch lists, inspections, tests, and user surveys. Special care must be taken to establish appropriate measures early in the project to focus attention and effort on the quality expectations of the team.

No matter how valuable a facility or structure may be, it is never more valuable than the health and welfare of the people who build and use the building. Care must always be taken to ensure that the building process, and the building itself, do not create unacceptable hazards to workers or users. These hazards range from risks during the building process (for example, falls, accidents, injury, and death) to risks from the completed buildings (for example, structural failure). Safety is best monitored and controlled proactively, by identifying potential risks and taking prudent steps to mitigate those risks.

Scope is monitored and controlled by means of an architectural program, which identifies the space needs and tracks compliance of the building design with those

needs. An optimal scope outcome would match the end user's needs to the facility design over the life of the building with no gaps in between. The ultimate goal is high end-user satisfaction.

The best project teams try to meet all of the functional requirements of the end-user group. An optimal outcome would satisfy their short and long-term needs, allowing for sufficient flexibility to adapt to changes in the market. Function is monitored and controlled by means of process flow diagrams and utilization analyses, which document the efficiency of the processes that will be performed in the completed facility (Jackson 2004).

4. Questionnaire surveys

Seven key elements of quality management are used as criteria for the Malcolm Baldrige award: leadership, human resources, customer focus and satisfaction, strategic planning, process management, measurement and analysis, and business results. We must understand importance of above mentioned factors and use them to improve quality and competitiveness as well. By using questionnaires we can understand, measure, and analyse the performance of very significant factors for competitiveness in each business unit: Strategic planning (setting goals to improve service, developing a long term strategy and a plan to improve quality), Process management and Measurement and analysis (collecting and using a wide range of data and information about the quality of products and services), business results (examining the organization's performance and improvement in its key business areas: customer satisfaction, financial and marketplace performance, human resources, supplier and partner performance, operational performance).

In this paper we focus on problems connected with quality management in the construction industry and presenting examples of key questions in surveys for problem identification. Questionnaire survey we can use to indicate measures of quality performance (Table 1).

Table 1. What do you consider the best measure of quality in construction industry?

No	Indicator	Score*
1.	Overall customer satisfaction	0–10
2.	Management commitment to quality	0–10
3.	Being asked to come back to do more work	0–10
4.	Skilled work force	0–10
5.	Training and education	0–10
6.	The amount of call backs	0–10
7.	Regular inspections	0–10
8.	The length of warranty (in years) companies can give on their work	0–10
9.	General construction standards	0–10
10.	Quality Awards	0–10
11.	Certified quality programmes such as ISO	0–10

Note: *Please score from 0 (least important) to 10 (most important).

We can also include different aspects of quality in questionnaire for determining which of them is considered as most / least important for improving quality (see Table 2).

Table 2. What aspects are important for improving quality?

No	Indicator	Rank*
1.	Employee involvement	1–15
2.	Management commitment	1–15
3.	Communication between managers and employees	1–15
4.	Skilled work force	1–15
5.	Training and education	1–15
6.	Subcontractors involvement	1–15
7.	Organisational culture	1–15
8.	Well-defined roles and responsibilities	1–15
9.	Clearly defined goals and objectives	1–15
10.	Review / analysis used to improve performance	1–15
11.	Regular inspections and audits	1–15
12.	Regular meetings	1–15
13.	Criteria used in pre-qualification in bidding process	1–15
14.	Written programme or policy	1–15
15.	Certified programme or award	1–15

Note: *Please rank from 1 (most important) to 15 (less important).

After collecting respondent's answers we can sort characteristics by importance and rank them – the results will show us the elements considered the most important and effective for quality improvement.

Is is very important to show the most effective not only important elements. There you can see (Table 3) few elements, which contractors may consider as effective for improving quality.

Table 3. Which elements are effective for quality work performance?

No	Element	%*
1.	Training and education of both management and employees	0–100
2.	Clearly defined guidelines for customer satisfaction	0–100
3.	Means and methods for ensuring continuous improvement	0–100
4.	Clearly defined goals relating to quality work performance	0–100
5.	Systems for collecting and tracking data for ensuring quality objectives	0–100
6.	A review / analysis process for identifying errors in the system	0–100

Note: *Please score from 1 (least important) to 100 (most important). The total sum of elements values must be 100.

The construction industry's clients demand improved service quality, faster building and innovations in technology. Lean Production (Just-in-Time) and Quality Management are being adopted and integrated into the industry to improve competitiveness. Successful implementation depends on different factors, firstly on teamwork and cooperation at organizational levels. Quality management gives us an opportunity to meet the needs of the final customer by solving quality problems and improving customer satisfaction level, and reducing employee injuries as well (Hoonakker *et al.* 2010).

It is difficult to define quality in construction industry. Contractors often have an attitude of 'looks good, feels good'. If construction contractors would use a standardised customer satisfaction survey, it would be possible to compare the quality records of contractors (benchmarking) and analyse which factors contribute to high customer satisfaction and high quality. Unfortunately, even when contractors collect data on customer satisfaction, they often fail to analyse them.

5. Successful promotional strategies

It is important to plan marketing so that it contributes to business plan and business cycle. Concerted and mutually supportive activity always produces better results than random uncoordinated activities. Firstly there is necessary to create a marketing plan on a rolling 12-month cycle. This way, it is always 'live' and flexible and facilitates financial decisions. Below you can find suggestions how to make marketing plan successful.

The name of the company must be easy to spell and pronounce, and descriptive of what you do, that it does not prohibit future expansion and under no circumstances reminds customers of your competitors. Use a logo that helps you stand out from the crowd and, if possible, one that illustrates what you do or what you stand for. The vast majority of people are visual thinkers (that's why road signs are images and not sentences), so a good logo is a quick route into their memories. It is also important to have a clear, illustrative and truthful strap line. A strap line is a set of words that summarizes what you stand for or offer. Letters, e-mails, proposals, business cards, gifts, promotional literature, websites, vans and trucks and so on must carry the same logo and strap line. Be seen in the relevant journals and newspapers. Write letters to the editors responding to articles or other people's letters, write articles or columns that establish your company as a leader, issue press releases, let journalists know that you are available to comment on 'community' issues. Showcase successes in premises, in brochures, on website and so on. Ensure that your website is regularly reviewed. It needs to be designed for ease of use, quick download, relevant information and maximum 'stickability'. A website is often the first and prime information source for prospective customers gathering information about company. When a prospective customer needs a company like yours, it is amazing how many people like to recommend 'someone who might be able to help'. Adopt a cause, such as a charity. The charity benefits and so does your company's image.

Just a few but important suggestions – become an educator, provide free seminars or speak at conferences (many of the attendees will be prospective customers), and make free factsheets available. Many of the people who request them will be prospective customers and, if you offer them through website, you minimize administration. Train all staff that has contact with customers in customer care attitudes and skills. If you use subcontractors, insist that they are similarly trained. Establish such long-term relationships that you can train them yourself. Follow up customers after a contract ends to check that they are still happy. If they aren't, you have an opportunity to do something about it before they tell their family, friends, neighbours and colleagues. If you advertise in magazines and journals, choose carefully. Is the magazine or journal read by your prospective customers? It may have a huge circulation, but is it a relevant circulation? Will advertising in it add to, or reduce, your company's credibility? Mail existing and prospective customers with something interesting or useful to them, not just you're advertising. Ensure that all mailshots are 75 percent useful to customers and only 25 percent advertising. All marketing contains two messages – the conscious one and the subconscious one. The conscious one is the stated message 'We sell x'. The subconscious message creates feelings in customers (Gillen 2005).

As a result of your marketing, you should understand if customers feel that you are superficial, too slick and unimaginative or professional, good value, reliable, reassuring.

6. Conclusions

Research into competitiveness has been conducted from different perspectives such as a construction industry, a firm or a construction project. Specialists include promoting best practices in construction industry, helping companies to develop competitive strategies. Research is suggested to move forward from understanding competitiveness to improving it.

Researchers have been trying to understand competitiveness by measuring it. In this research the authors focus on developing quality in construction enterprises and thereby competitive advantages. The authors collected data during interviews with contractors from companies, which mostly produce cement, ready-mix and aggregates such as sand, granite and gravel. Questionnaire surveys were used to address quality issues in enterprises in construction industry. 32 contractors took part in this research. Results show, that contractors understand benefits of quality improvement in their enterprises.

Results show that overall customer satisfaction (9 points from 10), skilled work force (8.5/10), and management commitment to quality (8/10) are the best measures of quality, but quality awards (2/10), and certified quality programs (1.5/10) are less important to them. According to contractors' answers, the customer satisfaction is the most important factor, but they indicate that it is difficult to measure quality in their enterprises. The risk level of changes in projects is high. Producers often can't predict deliveries in time – many changes like weather conditions and schedule delays can lead

to delays in deliveries and in completion of project as well, it can lead to complaints about quality and so forth. There is the task to improve supply chain as well.

The authors of the paper asked contractors about aspects, which are important to them for improving quality. Then they ranked them – results show that communication between managers and employees (1th rank) is considered most important characteristic for improving quality. Skilled workforce (2), training and education (3), employee / sub-contractors involvement (4/5), management commitment (6), and regular meetings (7) are considered important characteristic, but like in first survey certified quality programs and awards are less important.

Results show that the most effective element which is considered the most important and effective for quality improvement is training and education of both management and employees (47%) whilst systems for collecting and tracking data for ensuring quality objectives (2%) and review/analysis process for identifying errors in the system (2%) are less effective.

Porter (1998) suggests that it is up to enterprises to develop and maintain competitive advantages. The company's loss of competitiveness is its greatest threat. Today the pressure for speedy delivery, cost efficiency, and high quality is immense. The success of any construction project depends on the people who plan, organize, and perform the work that transforms someone's idea into a reality. The process of constructing a building does not happen in a factory under controlled conditions. It occurs in a dynamic environment where risk is inherent and the decisionmaking and problem-solving abilities of the construction management team are crucial to the success or failure of the project. Successful quality management is a key of customer satisfaction and thereby competitive advantage as well.

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Santrauka

Šiame straipsnyje autoriai analizuoja statybos rinkos Europoje statistiką, pateikia statybos valdymo teorinę analizę – konkurencingumo koncepciją ir apibrėžtis, įtraukiant PARTS sąrašą ir projekto vertes bei siūlymus sėkmingos rinkodaros veiklai. Statybos įmonių konkurencingumo stiprinimas yra vienas iš svarbiausių strateginių tikslų statybos sektoriuje, todėl įmonei konkurencingumo praradimas yra didžiausia grėsmė. Šiame straipsnyje pagrindinis dėmesys skiriamas statybos įmonių darbo kokybei ir saugai gerinti. Tyrimas skirtas ištirti Latvijos statybinių medžiagų gamintojų kokybės įgyvendinimo priemonės.

Reikšminiai žodžiai: statyba, konkurencingumas, kokybės vadyba, rėmimo strategijos.

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