

Integrated Marketing Communication in Project Activities

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Abstract: The paper deals with integrated marketing applied in project activities. The reason for this is the fact that such activities should refine their offer with a supplement in the project documentation but in the means of a different approach to the market. The amendment addresses recommendations to investors for the future construction and maintenance of facilities, and Lean and BIM in the design, construction and maintenance of facilities. That is why, during market processing, investors are offered an offer that solves the project task, includes design with visualization, and construction supervision, but already at this stage also includes certain maintenance solutions. This is only possible if the customers are approached comprehensively. For this there is an integrated marketing activity or process, where already in the market research, customers are informed about a kit containing everything from design, through construction to maintenance of the facility. Successful application of this process requires appropriate hardware and software support, as well as trained personnel for marketing. In scientific terms, a new method of integrating marketing activities in the business process of project activities is proposed. In application terms, a business process organization model integrated with marketing is presented, which enables the project company to connect with the market more dynamically and efficiently.

Keywords: construction; communication; designing; information; maintenance; marketing

1 INTRODUCTION

One of the most important features of today's global economy is the extremely rapid changes imposed by developed countries, and others with more or less success are trying to follow them. Today, companies face several constraints, such as global competition, highly variable customer demand and increased product diversity in the market, so it is necessary to adapt production as closely as possible to market needs [1]. Specifically, global market changes, new technologies in all industries, new manufacturers and suppliers, but also increasing customer demands, as well as new conditions and constraints on target markets are driving a new style of business systems management. That is why management needs to find effective and fast solutions.

Only systems that continually improve their business and respond to market demands faster can produce accordingly than their competitors have a chance to maintain their status, improve their business and market position. Accordingly, every business must apply everything that the world research heritage has to offer in order to survive in a global and increasingly demanding market. In addition, development is also conditioned by the growth and development of information technology [2].

After political and economic changes, the construction activity of the Republic of Croatia lost part of its domestic and especially foreign markets, which resulted in a fall in employment. In the same time, globalization has led an increased competition. In order to catch up with market trends and rewind the lost market share there is a need to introduce new methods of production and business to raise quality and reduce costs and other losses and increase labour productivity as conditions for greater competitiveness. In such a situation, great advances are not possible, but a constant improvement in all aspects of competitiveness. This is necessary because the demands of the customers are, in addition to the quality, increasingly oriented towards a lower price.

In addition, construction and especially design companies need to expand their offerings and integrate more with investors. This includes the preparation of project documentation, the supervision of construction and certain recommendations for more efficient construction and maintenance of the facility. In addition, there is an opportunity to expand the offering by introducing business methods and tools to increase the efficiency of production and business such as BIM and Lean. In fact, we can say that BIM is one of the Lean tools in the construction industry. Because Lean is focused on waste disposal, the implementation of BIM can ensure waste reduction.

BIM involves building, informing and modelling. BIM is widely regarded as a catalyst for innovation and productivity in the construction industry. In addition, BIM can help a more sustainable construction process, which in turn can contribute to poverty eradication in developing countries. While BIM is increasingly being adopted in developed countries, implementations in developing countries are rare. The survey found that construction firms are struggling with several constraints that must be in line with the socio-economic and technological environment found in developing countries. An example of problems preventing BIM adoption is the lack of IT literacy staff as well as the lack of national programs to implement BIM. Research results show that developing country construction companies rely heavily on outsourcing of IT services [3]. BIM is not just one standalone technology; it is linked to another for example virtual reality using laser technology. BIM, in combination with other tools, is used throughout the life cycle of the construction and connects data and information from the design phase to construction and finally to the renovation and demolition of the building [4]. In addition, BIM provides a platform for visualization, collaboration, automation, integration and communication between different actors in the construction industry [5]. Therefore, the use of BIM technology is used in all corners of the world and is being adopted to ensure greater success in AEC (Architectural Engineering) companies [6].

Lean is a group of new business and manufacturing methods and tools and comes from Japanese business philosophy with the aim of reducing all costs, losses and running time while increasing quality. In the 1980s, for example, the Japanese industry saw an increase in productivity by 15.6%, quality by 36% and a decrease in storage and assembly space by 25% and fifteen times less inventory than in the United States [7]. Studies of changing Lean tools in the design industry have shown that their application reduces cost by 15.6% [8]. Using Lean, project industries can expand their offerings and find the right methods and tools for greater synergy with the market.

Securing an ongoing relationship with investors can be achieved through market research if a tool known as integrated marketing is used. Until 1990, forms of marketing communication were studied and applied individually, but changes in consumer behaviour, caused by general social changes and technological advances, resulted in an increasing need for the integration of all communication activities, as well as for modified and fully customized communication messages [9]. In the coming years, integrated marketing has become the dominant approach that companies use to plan and execute their marketing communications programs [10].

Integrated marketing communication involves different forms of communication with current and potential investors over a certain period of time, in order to ensure maximum information but also the possibility of extending the offer. Therefore, the ultimate goal of this consideration is to define a comprehensive integrated information and communication process so that the project activity is in synergy with the market. There are certain methods and tools for this that enable constant contact with investors that is a long-term relationship. Considering that the project activities are the bearer of the first and most important investment phase, it is necessary to expand the offer through comprehensive communication. This means that designers must be prepared to offer construction supervision as well as additional

services, and to maintain a long-term relationship with the target market.

2 PROJECT ACTIVITIES

The preparation of project documentation is an activity or a specific product of professional staff and can be viewed by specific professional types and by stages in terms of complexity of work.

If it encompassed one complete area within the domain of project documentation preparation, then in the expert aspect the projects could be divided as follows [11]:

- 1) Architectural projects covering the forms of buildings, interior design and landscape architecture, as well as structural projects and budgets
- 2) Civil engineering construction projects such as railroads, roads, bridges and culverts, tunnels, maritime and river construction, hydro technical structures, and projects related to soil mechanics and earthwork
- 3) External water supply and sewerage projects
- 4) Surveying for construction purposes
- 5) Mechanical installation projects
- 6) Electrical projects of external and internal installations and equipment or equipment within the facility
- 7) Special-purpose technical studies on heat, acoustics, various insulations, noise and fire and explosion protection at work
- 8) Performance projects that are various forms of project documentation that are important when making adaptations and should have documentation for the maintenance of facilities and especially installations.

These can be added to the development of investment programs and studies, construction supervision, construction and maintenance consulting, and other methods of increasing business efficiency, such as BIM and Lean.

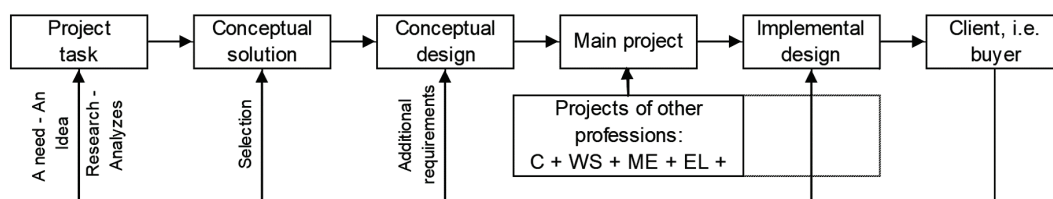


Figure 1 The classic design process (Explanations: C - construction, WS - water supply and sewerage, ME - mechanical engineering, EL - electro, PAW - protection at work).

In terms of content, all of these types of projects will be as complex as a complex object or future construction. According to Fig. 1 (author creation), the first and extremely important step is defining the project task. In most cases, this is done by the architectural design department with additional information from other design professions or departments. Rarely, a Conceptual Solution or Conceptual Design is specifically made. After defining the terms of reference, all departments elaborate on the project and continue with the design after the architects have defined the essential elements and made the foundation for the rest of the design. Subsequently, departmental design is performed almost in

parallel with the preparation of the main and implementation projects and other required contracted documentation.

This design approach is common because architectural and static designs are the basis for other design. For all other projects, the company will hire specialized designers in various areas of installations and other necessary projects. This is confirmed by a modern approach to the organization of design as shown in Fig. 2. The figure shows an organization of an Israeli design institute that shows a model with 2D alignment.

The aforementioned design jobs also require an appropriate organizational structure. Fig. 3 (author creation) shows the usual organization of projectile activities. The

organization shows that the company is engaged in the design and supervision of construction, because it is done mainly by the personnel who participated in the design.

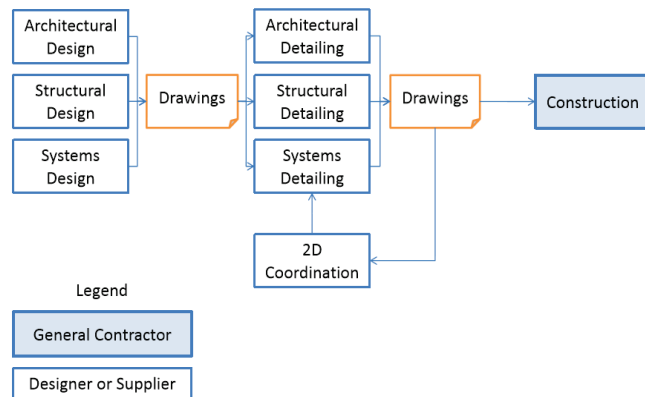


Figure 2 A modern approach to the organization of design [12]

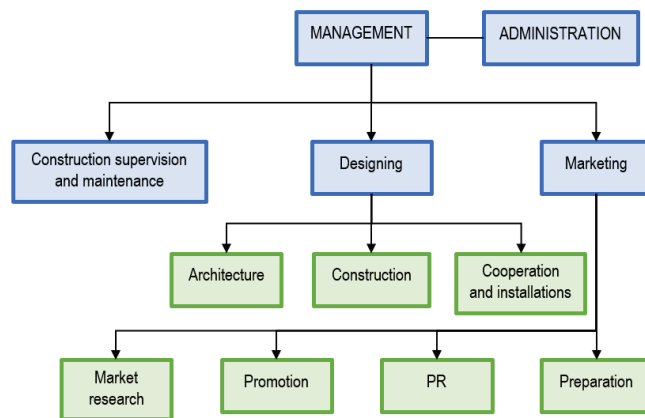


Figure 3 Organizational structure of the project company

In addition, for the supervision of other works, the investor will hire an appropriate specialized company. In practice, if the size of the company and the revenues allow, a commercial or marketing department will be set up with the aim of market research, contracting of projects and supervision, as well as assistance in the preparation of project tasks and other preparatory works for design. From Figure 3, it can be concluded that it is sufficient to have the capacity for architecture in structures, and other types of project can be done through cooperation with an external associate. In addition, project departments can participate in construction oversight activities. Marketing or commercials are given particular attention. In that department, they must have professional construction staff but are additionally educated for modern market access. In this way, this department can carry out market research activities, promotion, public relations and participate in the development of project tasks in preparation for effective design.

The current trends of the economy and globalization impose the need for a different approach and organization, where the wishes of clients and constant communication are to be taken into account. Shortcuts must already have in mind when designing problems that may arise in the construction

of facilities and even in their maintenance. Therefore, constant communication with clients is required.

3 INTEGRATED MARKETING

The proposed organization should ensure maximum synergy between the market and the project company. Synergy is possible if the company is proficient in applying new methods and IT tools in the complete process. In this regard, marketing should be accepted first as a process established in the second half of the twentieth century. This process constantly changes its structure and dynamics. Marketing has been defined by many local and foreign authors so we have more access as follows:

- 1) According to the Chartered Institute of Marketing - Marketing is a management process that identifies, anticipates and satisfies consumer demands while generating profits [13]
- 2) The following approach defines marketing as the process by which ideas, goods and services, their pricing, promotion and distribution, the goals of individuals and organizations are planned and implemented [14]
- 3) If marketing is understood as a dynamically irreversible process, it can be stated that it consists of activities of individuals and organizations that enable and accelerate exchange in a dynamic environment by creating, distributing, promoting and pricing goods and ideas [15]
- 4) Marketing is not only a concept of business, but more importantly, a way of business, and, if we broaden the focus of observation, to think of life, and therefore a way of a kind of philosophy of living [16].

It is clear from the previous definitions that marketing refers to a way of researching and communicating with the market in order to constantly identify the wants and needs of customers, as well as other information that can assist in the promotion and development of products. Marketing activities are conducted through market research and a combination of elements of the marketing mix. Market research aims to identify specific customer groups in a broader field or market segment. Each market segment has a certain capacity relative to the total purchasing power of some products. The ultimate goal of market research is to determine the position or share in the consumption of market capacity in a segment.

It is already known that the elements of the marketing mix are product, price promotion and distribution. Marketing activities are carried out through promotion with the right product and price negotiation. Distribution in project activities may relate to deadlines for the execution of contracted design work or construction supervision.

Marketing has evolved over time in line with the development of technology and technology as well as the market. Marketing development has historically taken place in stages or concepts such as: product concept, sales, marketing concept, consumer concept and social marketing concept. Such a sequence of development shows that marketing or market research has increasingly enriched the connection with the market but also with the wider environment [17]. These phases of marketing development

have already survived their peak, so it is necessary to further innovate methods and procedures. In this sense, individual companies with greater intensity are connecting to the market with a view to expanding their supply and permanently linking to their market segment. This is why larger and more structured customer communication is known as integrated marketing. Integrated marketing communication is the transfer of information from the sender to the recipient, provided that the recipient understands the information that forms the basis of the communication process. As a means of modifying behaviour, effecting change, achieving information productivity and achieving goals, information transfer is absolutely essential in any field of activity [18]. He believes that integrated marketing communication is a process of various forms of persuasive communication with consumers and potential customers in a certain time [19].

Fig. 4 shows one modern integrated marketing information system that has feedback and can use different channels with prep code.

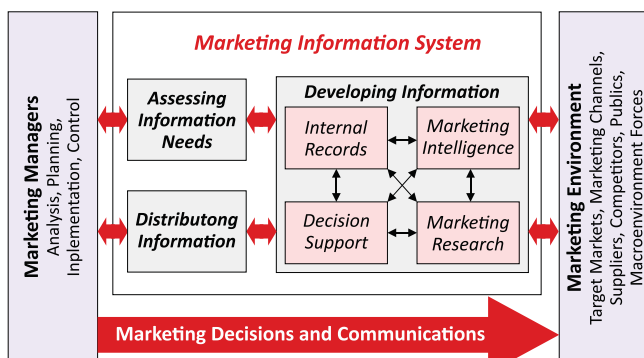


Figure 4 Marketing information system [20]

Fig. 4 shows the synergy between the management of the company through the marketing information system and the target customers. The essence is quality information and communication. Such a system enables constant communication with the target market for the purpose of making decisions about the growing offer or product. Central to the process is an information system where information from markets, institutions and memory is collected and decisions are made. Information gathered from the target market through integrated marketing communication is the input and prerequisite for the application of modern design methods as well as recommendations for construction and maintenance. It is necessary to define a product that is actually comprehensive design documentation but also constant communication of the designer during the construction and maintenance of the facility.

4 INTEGRATED MARKETING INFORMATION AND COMMUNICATION SYSTEM WITH THE APPLICATION OF BIM AND LEAN METHODS IN PROJECT ACTIVITIES

4.1 BIM

The product or design and supervision services should be supplemented with construction and maintenance consultancy work and BIM and Lean tools applicable in

construction. The requirements of the market on the one hand, and information technology on the other, create the conditions for the development of design around the world, even in the domestic field. In this regard, domestic and foreign associations are already adopting certain document-directives establishing a method for electronic information modelling of construction projects [21]. Support for the said directive, or its implementation, is supported by the 2014 CEN (European Committee for Electrotechnical Standardization) Program, which initiated the establishment of the Technical Committee CEN/TC - Building Information Modelling, or abbreviated BIM. The aim of these document is to provide a normative framework for the application of BIM technologies in practice [22].

Building in this case broadly implies several substantive terms such as [23]:

- Construction is the design and construction of buildings and the professional supervision of construction
- Construction is the execution of construction and other works (preparatory, earthwork, structural, installation, finishing and installation of construction products, equipment and facilities) that construct a new structure, reconstruct or remove an existing structure
- A structure is an assembly formed from purpose-bound construction products, with or without installations, an assembly with a built-in installation, or an assembly formed by construction.

Information within the BIM method encompasses a set of programs, devices, methods, and procedures through all stages from design to storage. It is a structured set of characters that conveys a message (ethnology and anthropology), as well as information or spoken or written information in a format suitable for sending, storing and transporting [24].

Modelling is the construction of a view or a model, and in this case the following applies:

- A structure or computer record that, when loaded, acts as a real structure or ground and serves to test the load-bearing capacity, safety and usability of the designed object
- Simplified or conscious artificial presentation of reality (ethnology and anthropology)
- Theoretical reconstruction of a set of phenomena for the purpose of visualizing explanations and better understanding of cultural phenomena in the past (archaeology) [25]

There are already some practical experiences, especially in the design work, so the following advantages are highlighted [26]:

- Adding and connecting all design teams
- Better visualization
- Improve productivity by simply sharing information
- Faster design and more accurate documentation with fewer errors
- Cost reduction especially for those who do not create value

- Teamwork
- Errors and omissions are minimized at all stages of design.

BIM is still evolving as a method, so digital tools are available that are based on modelling building information and provide an opportunity to facilitate the assessment of the performance of buildings in the environment. Recently, various tools have been developed that use the BIM model for the automated basis for quantifying life-cycle estimation (LCA) [27]. Fig. 5 shows a simplified method of the process of controlling the implementation of BIM in construction, which, with the help of certain applications, can significantly reduce costs during the design phase. In this way, even at the stage of market processing, a comparison can be offered between a project where BIM has been applied to classical design, which can further increase its competitiveness. The control shown in Figure 5 consists in comparing the cost of applying BIM with respect to classical design.

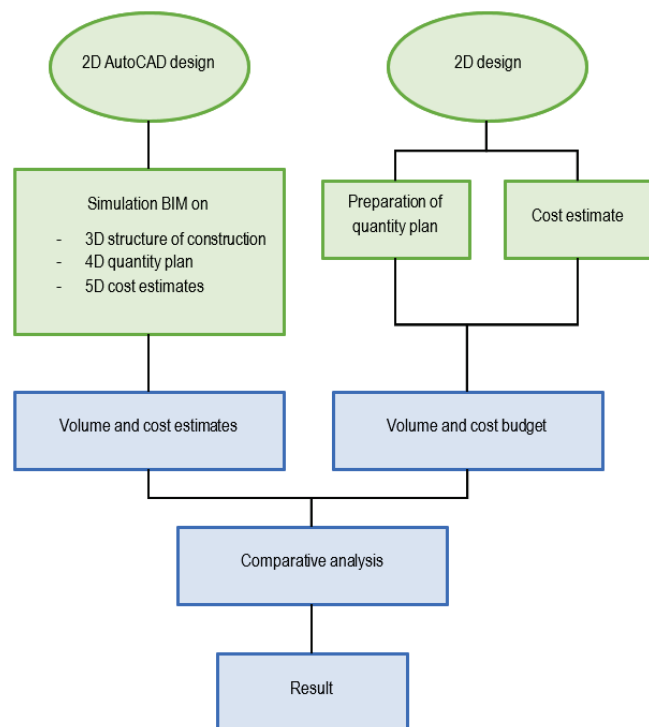


Figure 5 An example of controlling the effectiveness of BIM in design [28]

The difference is that BIM involves the use of a CAD (2D) visualization program, a multi-dimensional (3D) model is simulated, a plan for all construction operations (4D) and a cost estimate (5D) is made. After quantitative estimation and determination of total costs, the costs and effectiveness of the project are analysed and compared. BIM enables the projection of the complete life cycle of a building from idea to exploitation or recycling already at the design stage.

4.2 LEAN Methods in Design

In modern times, new methods are emerging that improve the production, construction and maintenance of

facilities known as lean or lean lines, which means less facility, less effort and capital, less time and storage, and therefore less cost and unnecessary losses. In this sense, methods have already been established, of which the following should be paid particular attention in design [29]:

- TQM - a management system focused on continuous improvement of quality
- JIT (Just in time) - delivery of resources at the right time
- "5S" - default model; sorting (sieri), order (seiton), cleaning (seiso), personal contribution (seiketsu), self-discipline (shitsuke)
- Standardizing as many operations and procedures as possible
- Kaizen - continuous process improvement
- Kanban - Inventory management system.

These methods are derived from Japanese business philosophy, and they share a common characteristic that everything goes on continuously with a tendency to increase quality and efficiency. In addition, these methods can be successfully implemented in marketing research and design. A special quality of the company's offer is consulting recommendations with project documentation and later participation in the process of construction and maintenance of facilities.

When defining a product or offer and defining a pricing system and selecting other elements of the marketing mix, especially promotion and PR, an integrated marketing communication system can be defined and applied, which implies a constant connection with customers, ensuring synergy between marketing and operating activities from research markets, through design and construction through to facility maintenance.

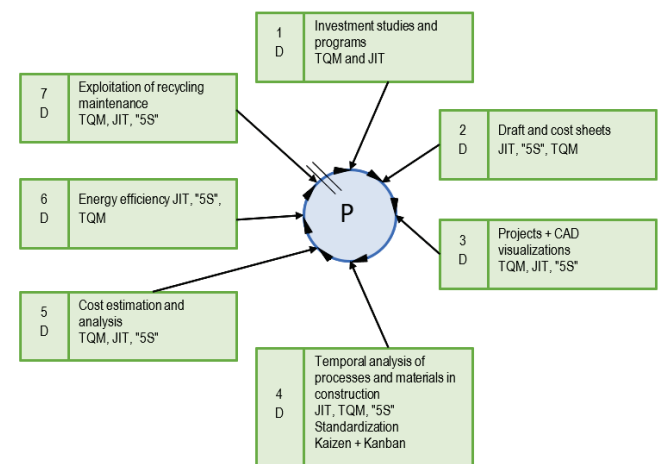


Figure 6 Contents of the complete offer of a modern project company

Project activities can be more competitive by applying modern methods that give the market the opportunity of a project that covers all activities from conceptual studies to exploitation. In this sense, one design sequence can be defined that encompasses all the contents of the design using BIM and Lean methods, as shown in Fig. 6 (author creation). The figure proposes the application of individual Lean tools at certain stages of the project flow. Such a sequence of offers

is proposed taking into account past research experience. The proposed product offering (P) can still be supplemented by design software and other new organizational and technological innovations, but the offer must constantly respect various restrictions.

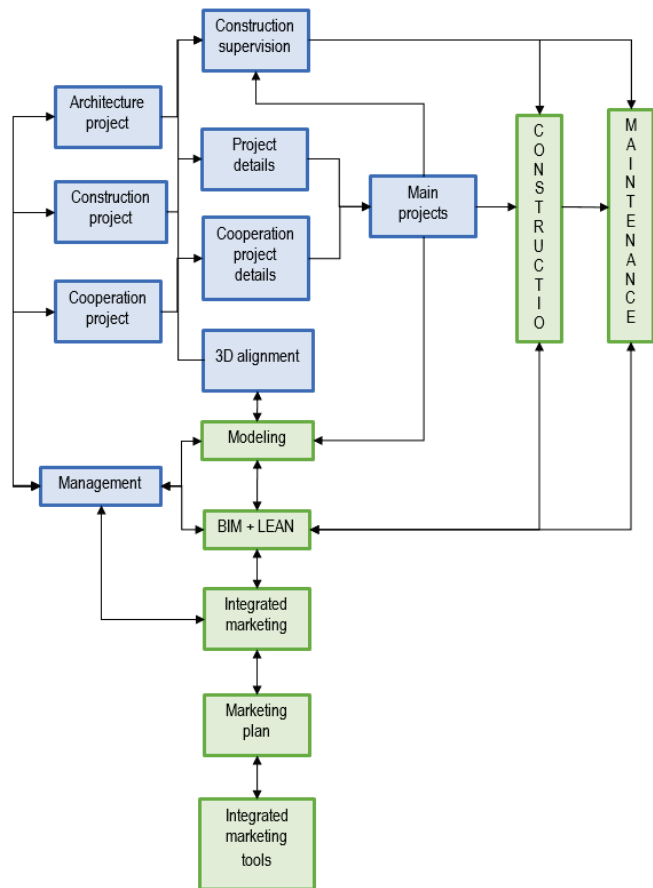


Figure 7 Integrated marketing-communication process in a project company

5 OVERALL INTEGRATED MARKETING AND OPERATIONAL COMMUNICATION PROCESS WITH THE APPLICATION OF BIM AND LEAN METHODS

Once the company is fully prepared to submit a design offer with the latest methods and recommendation to construction and maintenance, everything is ready to apply the integrated marketing communication process. In this respect, the possibility of synergies of the BIM method with the application of Lean method, especially with the Kanban tool is shown in Fig. 7 (author creation). The aforementioned tool, in particular in combination with JIT, is applicable to construction work. The essence is in very precise software called electronic card. The card contains information on equipment and supplies, storage in the dynamics of needs. The software signals in a timely manner the needs for the inputs to the site to be delivered at the exact moment of the start of the defined work of construction. In addition, the complete flow of activities from the beginning of the design to the completion of construction is virtually covered. Other lean tools such as kaizen, "5S" and standardization of procedures can be applied in this regard. The basic lever of

this system is a lean-principle called "pull" or marketing feedback. So do not accumulate supplies but also allow for a lack of input.

In this case, this means, for example, that any request for a change during construction, as well as an error or other loss, is immediately signaled to be incorporated into the modeling and in virtual form accepted into the construction. The proposed communication system can be successfully implemented especially in the design, construction and maintenance permanently with appropriate IT support and highly educated staff. Successful application of the proposed process requires the creation of a plan and defining the tools of the promotional mix. Fig. 8 shows one common integrated marketing plan. According to the picture, the immediate and global environment of the company should be analysed first. In this sense, various positive and negative elements of competition and their own strengths and weaknesses are identified. It is especially important to have a variety of information on the political, financial, developmental and legislative conditions that prevail in the global environment. After that, the market segment and target group of investors can be defined, and their position or part of the market capacity in the domain of the company's supply can be determined.

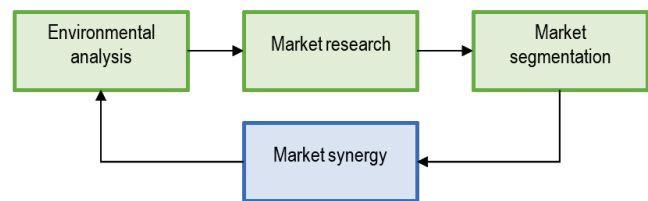


Figure 8 Integrated Marketing Plan [30]

The concept of integrated marketing communication begins with the consumer or potential customer is directed back to the enterprise with the aim of defining the forms and methods through which a convincing and effective communication process will be developed. A successful integrated marketing application depends on the implementation of the appropriate promotional tools shown in Fig. 9 (author creation).

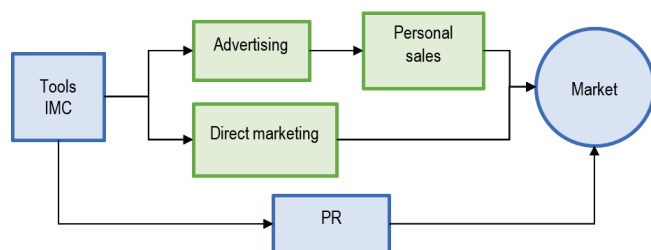


Figure 9 Promotional tools

Fig. 9 shows the essential promotional tools of integrated marketing communication for the purpose of ongoing collaboration and synergy between the company and the market. The basic tool is advertising that serves as basic information. Direct sales involve the personal contact of

marketing staff with potential customers through a professional presentation of past projects and new offerings. Namely, for some particularly interesting clients, they should be approached directly and aggressively in terms of informing on the details of the offer. For example, the conceptual design should inform the client about various professional problems and solutions in construction and even in maintenance. In this regard, a range of BIM, visualization and lean construction solutions can be offered. This form is a continuation of advertising, i.e. it is already a sales activity where specialized personnel are involved in accordance with the complexity of the offer. After contracting, there are jobs that can follow the life cycle of the facility according to the agreed cost.

As defined by the American Direct Marketing Association (ADMA), direct marketing is "an interactive marketing system used by one or more advertising media to influence a measurable response and / or transaction at any location" [31]. From the above definition, it can be concluded that in project activities this refers to communication between past clients and those where larger jobs are expected. The communication itself is performed most efficiently by the Internet and in the stages of construction and maintenance by direct contact of appropriate personnel. PR is a constant activity with goals, enhancing the reputation of the company, creating a positive climate and acting on overcoming the negative to positive views of the company. Communicating with the public online or offline can be divided into three categories [32]:

- Communication activities within the web site
- Communication with online news media, or
- Social networks.

Integrated marketing in project companies can only be an important factor in competitiveness if these methods and procedures are accurately applied, thereby ensuring synergy with the target market, both locally and globally.

6 DISCUSSION

The above text shows that some change is needed in the organization of project activities in order to increase efficiency, especially avoiding idle for some capacities. The above-mentioned example of organization of processes at the Israeli Institute shows that all remaining project work except architecture and construction is outsourced. In addition, the size of the company and the amount of work make it possible to expand IT to construction and maintenance consultancy, but all in outsourcing. The development of marketing with the help of information technologies enables the symbiosis of the market with the company to be expanded in such a way that marketing integrates information with the development of other activities. Thus, the already researched scientific methods of market research can be fully in the function of product or service development. The direct connection of the company in the construction and consultation in the application of BIM and Lean, and especially in maintenance, establish a permanent relationship with the client-investor and thus long-term business cooperation. In addition, such

symbiosis opens up numerous opportunities for exploring new methods and procedures and constantly incorporating them into the offer of the project company. In such processes, new scientific methods in the field of marketing and design can be changed, which represents an interdisciplinary scientific approach to this work. Essentially in this consideration, the design process is linked to marketing into one whole. This opens the possibility for flexible behaviour in relation to increasingly demanding clients in the global market. Therefore, in the market research phase, all the answers to the client's questions are possible in all stages of design, construction and maintenance of the facility. This topic can be expanded to include new scientific advances in design, BIM, Lean and other manufacturing and business processes, but with the use of new information technologies. The development of informatics should be especially emphasized as it can be a great support or a tool in the application of new methods in designing as well as in the application of other organizational procedures that can contribute to the integration of marketing with the business process in designing. New information technologies, especially the Internet, will in the future enable even faster and better-quality information between the business of the project company and the market. This will enable faster better-quality information transfer between market and marketing and development of project services. In such synergy with clients, a project firm can over time complement its business program and new ways of integrating with the market.

7 CONCLUSION

Based on consideration of the content of this topic, more conclusions can be drawn. First of all, it is a warning of rapid changes in the economy and globalization. In such a situation, all and even the project activities must constantly expand their product and service offerings with better market connectivity. This means that the project company must define and expand its range of products and services, as well as marketing activities that enable faster contacts and that also create the conditions for long-term cooperation. In practice, this means that designing should be an input activity that continues during construction and is permanently carried out during the maintenance of a building. In this regard, an integrated marketing communication process is proposed, i.e. a system that ensures long-term cooperation of the project activity with the investor. The applied researched scientific methods and procedures of integrated marketing are proposed. By linking marketing with business, a new method in the business of project activities is proposed in a scientific sense, with the aim of increasing competitiveness. Accordingly, the application of scientific marketing heritage in combination with the business of project activities achieves one of the important scientific features, which is in addition to scientific and useful.

In this regard, the latest development results in the business of project activities were investigated, as well as Lean methods and procedures applicable in construction, which in relation to BIM represent an innovation in both theoretical and practical terms. In order to improve the proposed methods and procedures, special attention in future

research should be paid to the education of companies engaged in project activities, and especially to greater synergy with scientific research institutions.

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