

# Communication support in manufacturing enterprise: coordination mechanism and management particularities

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**Abstract.** In the environment of market economy the economic system is competitive only if it defines its own communication system more properly, reacts to the market needs and requirements, creates and organizes competitive manufacturing production, takes actions that lower risks, and provides a transformation of in-process interaction. The participants of these relations was initiated by the formation of the elements of communication, together with market actors, is gradually getting involved in the modern process of innovation, developing new strategic decisions and initiatives.. Therefore, manufacturing enterprises have to undertake considerable efforts and radically new approaches in order to make use of communication tools for strategic development. Recent gradually adapting to the current state of the market, setting up its coordination mechanism on the perception of communication support.

## 1 Introduction

The current stage in the development of Russian enterprises poses entirely new tasks in the area of systemic changes towards enhancement in the managerial field, that causes an increased attention to management process in complex economic systems: especially here the majority of funds is centered; issues regarding economical expenditure of material, labor, financial resources are solved; more advanced new technologies are applied and effective communications are realized. Manufacturing enterprises as the construction initiators of the of branched communication networks with various market entities are motivated to involve them in the innovation process and development of effective strategic decisions. In these circumstances communication tools greatly expand and transform its functions as well as interaction of the producer with the communication range acquires a multilevel and multi-channel character. Communication tools are only effective, when they are adapted to the market condition and coherent with motivations of entities to the perception of communication support. Ease of Use

## 2 Communication support of management process as structural element of business-system

The analysis of strategic alternatives allows substantiating and defining the basic approach to the formation of enterprise strategy, on the base of which its mission, goals and ways to achieve are formed. At the same time there is a clear understanding of the need and

feasibility of a strategic approach implementation, aimed at creating systematic prerequisites for the formation of complex communication support for the manufacturer development.

Depending upon the economic situation in the market, the integrity of complex economic system can be supported, but can also be developed on the base of corporativity, taking into account not only the cooperation, according to activity functions but also to the relations within the system.

A corporate integrated management system represents an open system; which activity depends upon the internal and external environment. The peculiarity of such management system is in the study of the influence of external and internal factors, not only on business processes but also in their own system dependency on communication support [1].

The most important tendency in the development of corporate integrated systems is reduction of the number of decisions, made in the top echelon, increased ability to handle extensive information and respond quickly to current situations. It is achieved through the provision of larger authority at lower levels, i.e. transfer of managerial decision-making centers to the levels at which the problems arise.

Allocation within the corporate integrated system of independent business-units, interconnected by business processes, leads to a constant complication of communication interconnections and structures of implemented socio-economic objectives and, consequentially of these trends, a build-up of internal connections occurs within the system.

Accordingly, the volume and diversity of administrative interactions increase in solving industrial-

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technological and socio-economic tasks that certainly leads to transformation of content and nature of management, maxims, methods and functions of management itself [2].

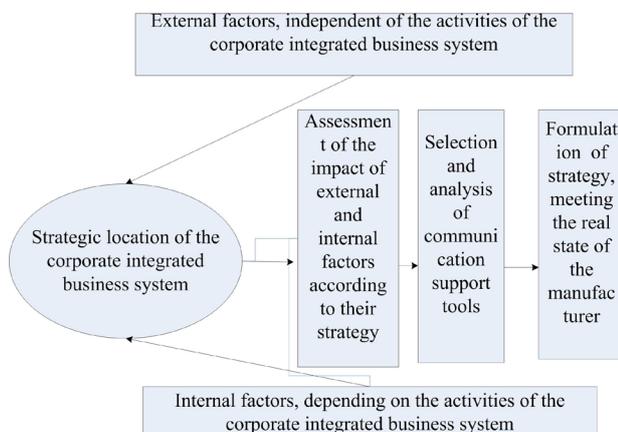
Information and communication flows, circulating within integrated management system, must comply with the maxims of having a meaningful interpretation of the following: adequacy – elimination of the information deformation; usefulness – absence of unnecessary information within the data, complicating the managerial processes; particularity – inclusion of only relevant data in the management system; authenticity – reflection of management situations through objective information; verification – examination of the veracity of information via analysis of past information [3, 4].

The communication support system of management process is the very component of an overall management system in the corporate integrated business-system, which allows the unification of the corporate information space through delivery of information, necessary to ensure the system stability with the help of monitoring feedbacks. In the frame of the system, the collection, analysis, storage and procurement of data are ensured for managerial decision-making with the aim of supporting management process by the usage of resources, including materials, labor, financial assets and manufacturing facilities.

In the process of the system management, based on communication support, the strategic component is the defining element [5].

Since the development of the strategy represents a dynamic process, the strategy must be reviewed and also consequently updated on a regular basis, it includes planned actions, i.e. implementation of planned strategy and unplanned strategic decisions, which are necessary in the event of unforeseen circumstances.

At the initial stage the strategy development process should be assessed by the totality of external and internal factors which determine the basic approach towards corporate integrated business-system in order to the strategy formation. (Figure 1).



**Fig. 1.** Formation of the process strategy in the manufacturing enterprise.

The implementation of strategy communication support requires primary decision of managerial tasks: creating organizational prerequisites for successful

strategy implementation; budget management for a viable distribution of funds; policy determination of the corporate integrated systems to ensure the strategy implementation; motivation of labor for more effective work results; comparison of remuneration with the achievement of expected results; creating a favorable atmosphere within the corporate system in order to achieve successful performance towards stated goals; usage of advanced experience for continuous improvement, etc. All of this raises the need for complex development of all elements of communication support in the manufacturing enterprise.

One of the main benefits from using integrated communication support is the effect of synergy: coordinated with each other communications represent a much greater influence than each way individually.

The benefits from integration of communications are: increase in sales and profits; achievement of purity within the communication channel as a result of elimination of barriers; cost savings due to the removal of parallel and duplicated use of communications within the framework of a unified marketing program. Moreover, for every company to achieve its mission, it is highly relevant to have their own communications and combinations, by the choice of which it is necessary to take into account main components, criteria and consistency of stages in communication strategy development. The strategy model traditionally represents its constituent components and their dependencies of the company's objectives. At the same time, the links, which are extremely important, are not explained, when different entities (consumers, governing structures, investors, shareholders and others) interact in order to achieve the goals of the company and, of course, those of the end consumer. People are referred to as key figures in a dynamic communication system. However, the lack of a definition of those figures and their behavioral motives gives the model solely a descriptive character, instead of making them a managerial tool of communication support in a particular market sector [6, 7].

In addition, out of sight is the impact of this support on the competitive behavior of consumers. There is no correlation between sets of communications and conditions, in which they realize their potential, namely aspects of the consumer area, the specifics of the manufacturing activity type in the economic industrial sector in any given territory (region), with production-technical and economic condition of the actual manufacturer, and also the character and nature of the relation between manufacturer with business partners (communication agents, infrastructure entities of the business-area, involved in the process of function and development of the manufacturer). The consideration of the changing relations between the producer, the consumer in a wide range of its behavioral decisions, market partners and other entities of the communication area forces the producer to seek out rational solutions in the area of formation of communication toolsets for activating interactions not only with the consumers, but also interactions with other participants. Communication support, understood as a toolset and process component

of interaction, does not provide feedback (response) within the analysis of consumer preferences in the context of the assigned vector of the enterprise strategic development.

### 3 Enterprise communication competence of: features of its formation

Manufacturing enterprise, creating communication support, reasons from the fact, that effectiveness of its activity and competitive potential is determined by quality and quantity of the information which is required in order to take managerial decisions [8]. Managers in the enterprise build their relationships with various market participants, using communication tools, focusing on the effectiveness of its action and rationality in terms of consumption of various resources (financial, labor, material, etc.) [9].

The formation of communication competence is based on the following principles [10]:

- a) equation of interests between participants of exchanges;
- b) rationality in the use of communicative resources that can alter its form and content, in accordance with the target audience;
- c) pragmatism in the behavior of market participants, offering their communication mix;
- d) concentration of enterprise efforts in building a targeted impact on one or another consumer type;
- e) integral perception of participants' interests in interaction and accounting for vector of motives in determining a single reference point for achieving the desired results.

The implementation of these guidelines requires, on the one hand, sufficiently large and organized information about all interaction participants, on the other hand, streamlining of its accumulation in the enterprise information subsystem in the through the distribution of roles and functional responsibilities of experts, included in the process for its collection and processing in different directions of the enterprise activity.

The communication process of "awareness" and "perception" in this very case is the way of existence and movement of semantic information, which provides a change of forms of its display and their further development. Moreover the actual communication process does not appear as a single act, but as a system of interconnections in a unified communication field, in which information is retrieved into one of its subsystems.

The formation of communication competence involves:

- a) differentiation of consumers in types according to their competitive behavior in changing market conditions;
- b) collection of analytical data on dynamics of parameters, representing sales volume, consumer potential of the individual segments, the level of communication costs, character and changes in the

business climate in specific markets in a denote time interval and etc.;

c) systematization of the information received in those formats that allow us to use effective technical means for its processing and communicating to the stakeholders;

d) carrying out various analysis within the context of formulated managerial tasks and its objectives.

The tasks, that challenge the company, require creating a model of management in the enterprise information subsystem, sufficient in content, managerial and communicative aspects for solving problems of the formation of the database, necessary for the enterprise managers to take rational managerial measures [11, 12].

Communication tools of an enterprise, replenished in the course of the emergence of new technical means and development of network technologies, provides a new quality of relations between them and the market. Thus, targeting (targeted impact) is fixed, interactivity is increased and coordination of entities' interactions is improved in the communication area. The enterprise "gets more motivated to be closer to the customer, and therefore sees more sense in it." [13].

Three components of communication competence of enterprise, understood as a level of readiness and ability of reciprocity in the enterprise, - motivational, pragmatic and cognitive – are interrelated and complementary. Each of them has a different degree (level) of activity and openness. The combination of communication competence components at different levels allows us to construct a typology of communicative conditions of the entities. This typology is based on combinations of different levels of motivation, on balanced interaction between entities, communicative coherence between entities, as well as the enterprise knowledge about the entities. The higher the level of motivation activity of the market entity in relation to other is, the higher the level of its readiness for interaction with other participants of the communication process (consumers, competitors, business partners, communication agents and etc.) is.

Functionality of communications, manifesting itself through a process aspect of building economic and other relations between entities, first of all, involves transfer of information via channels, installed by the enterprise to the corresponding communicants, showing interest and forming motivation towards the acquisition of products, goods (services) or ownership interests in the enterprise as a market entity. The accumulation of the obtained information about competitors, consumers, market communication agents requires a certain consistency and organizational design, which can be represented as an enterprise management subsystem or organizational structures of different scales and subordination. Creating an information subsystem (in the form of an information center), serving as a separate organizational unit of the enterprise communication field can be regarded as a rational solution for the enterprise [14].

## 4 Method of efficiency assessment in communication support

A key element in the generated information array appears the consumers himself – with his interests, ideas about the external environment and producer of goods, motivation in relation to purchases. As far as the consumer has the role of a processor in decision-making, regarding purchase and consumption, he should know about himself, about the goods, about the producer and their communication agents, that could provide him with at that moment truthful or long term decision about purchase and consumption of the product in need. Manufacturer should as well know and collect information about the consumers, who represent participants of his communication interaction as well as consumers, which may under certain external influences from communication agents engage in the process of purchase and usage of goods. All the information should be accumulated in the enterprise data center, which can include various subsystems, for example, the internal monitoring of business processes and their management; search of information with operational, tactical and strategic character; collection and processing of information on communications; collection and processing of external information; transfer and passage of information; control of information receipt; searching and processing of information about interaction problems between participants; security support of communication field and its evaluation; consumer relation management (CRM); enterprise resource planning (ERP). Such a set of subsystems is required by the enterprise for structuring of received information on the state of external and internal environment (information about the level of use of annual production capacity, the production structure of the main enterprise products, etc.), consumer perceptions (information about the personal consumer information area); the brand initiator of communication impact; the cost of transactions in various kinds of communication funds and so on [15, 16]. Multidimensionality and plurality of information on various aspects of enterprise activities requires the establishment of certain fundamentals, which largely determine the construction of communication networks and choice of means of communication interaction on entities' interactions which differ from each other (whether they are consumers or governmental and municipal authorities, or market communication agents – representatives from various professional fields of activities). Not of less importance is the information on the state and condition in the market of resources, on the perception of communicative messages by consumers, and also the information on communicative activity of the competing enterprises. The variety of information that can be included in the information subsystem, determines the multiplicity of goals of her creation, tasks and methods for their achievement.

The filling of an information array requires the application of specific analysis tools that are oriented on solving strategic tasks for the enterprise. For this we need a separate analysis of the individual potential of the

entities, competitor analysis, market analysis, macro-environment analysis as well as an analysis of opportunities and risks.

Accordingly the highest level of communication support efficiency can only be achieved by coordinated interaction of all communication tools for the transmission of a unified message to the target market and the provision of complex impact on the target consumer. The application of an integrated approach to its planning and implementation provides the following benefits:

- unified creative design of a message for the target market;
- maximized sequence of messages;
- efficient use of all communication tools;
- more precise focus of messages to the market;
- improving the efficiency of internal and external communications and their interaction;
- cost savings and efficient use of resources [17].

As part of this study we suggest a methodology to assess the effectiveness of communication support on the base of factorial dependence:

$$\mathcal{Y}_t = a + C_{u,n,a_e} + K_{M_t} + M_{K_t} + C_{O_t} + k_1 C_{O_t} M_{K_e} + k_2 C_{O_t} + k_3 C_{u,n,a_e} K_{M_t} + k_4 K_{M_t} M_{K_t} + k_5 C_{O_t} M_{K_t} + k_6 M_{K_t} C_{O_t} \quad (1)$$

where in  $\mathcal{Y}_t$  – income (RUB./Y.);  $a$  – uncontrollable factors of the previous periods;  $k_1, k_2, k_3, k_4, k_5, k_6$  – coefficients, which reflect the degree of pair bond integration, determined communication support tools;  $C_{u,n,a}$  – connection with investors, business-partners and shareholders;  $K_M$  – crisis management;  $M_K$  – communication management;  $C_o$  – public relations;

$K_{M_i}, M_{K_i}$  – influence of crisis management on international communications;

$C_{O_i}, K_{M_i}$  – influence of public relations on crisis management;

$M_{K_i}, K_{M_i}$  – influence of international communications on the realization of crisis management strategy;

$C_{u,n,a}, K_{M_i}$  – influence of connections with investors, business-partners and shareholders on the realization of crisis management strategy;

$C_{O_i}, M_K$  – influence of public relations on international communications;

$M_{K_i}, C_{O_i}$  – influence of international communications on public relations.

Estimated factorial dependence only shows paired connections between communication support tools; although in real conditions, there might be more complex systematic interrelationships of three, four or more elements. Regarding the complexity of given dependences, the question of their mathematical modelling is left open, and it requires special software products and explains the absence of empirical confirmation.

## 5 Conclusion

Thus, to ensure the functionality of an information subsystem of communication support, in our opinion,

requires the allocation of continuous monitoring and control of very significant parameters in consumer behavior – the type of its competitiveness. Understanding of the dynamics of changes, initiated by communications in specific target groups of consumers, along with understanding of dynamic structures of payment capability of these target groups will provide a science-based approach to the organization and development of communication interaction, strengthen its target orientation, purposefulness, informational and economic efficiency.

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