# Communication for performance in aerospace

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**Abstract:** *The paper outlines rules for employees in the aerospace field about general procedures, accounting, budgets, employees involvement in the companies goals as a team or as a group. The quality of all communications activities is presented in correlation with performance. For us, performance means economic and social references, stability and credibility of the business and, not least, a good communication within the existing groups or teams. We take in account long-term, medium and short performance for a new and modern field such as the aerospace industry.*
*The paper highlights the group communication aspects, the process needed to optimize communication within a group, the team characteristics and mission, the team involvement versus group involvement, organization of the work team and defining/definition of roles in a team according to individual skills and some technics; to apply the Belbin test for determining the role of individuals within the team, for identifying the types of communication in order to get the information transmitted to the different types of individuals such as "analytical type", "director type", "friendly type", "expressive type", the needs and interest of these individuals, assessing how the information was received and the impact of the feedback.*

**Key Words:** *Communication, Performance, Organization, Aerospace activities, Companies*

## 1. INTRODUCTION

Overall, organizational communication in modern society has known changes which emphasized the importance of information exchanges, based on new principles: autonomy, cross-sectional organization, project teams, participation.

All this has led to an increased organizational coordination, coordination being a critical process of this organization.

Internal institutional communication brings together all the communication forms within an organization, being a consciously and voluntarily process of exchange messages between its members for individual and collective goals fulfillment.

## 2. COMMUNICATION: FROM THEORY TO WORK PRINCIPLES IN AEROSPACE ACTIVITY

Today, we talk not only about communication as a phenomenon of transmission and reception of words, letters, images, signals. Communication involves much more than that. It is an integrator phenomenon, through which the fundamental structures of society are built every day. [1]. The progress means more and more communication. As the aerospace companies are representative for the ideea of progress, it is normal to find into their activity a path towards a new era of communication.

Basic elements of communication as described by the science have to be clear when the aerospace companies have to design the information flows. The communication science says that "Communication involves the reversibility of messages within the relationship which brings together two entities, even if the messages are not of the same order". In the same time "it involves creating a sense, in respect with the uninterrupted correlation between our faculties for perceiving signals, the richness of vocabulary, to decode them, the imagination, to interpret them, as well as the memory, in order to maintain their consistency when, in our turn, we become emitters and address return messages" [2]. The elements that apply to aerospace companies are the following: the importance of the "uninterrupted" information flows (mainly in security departments), the correlation of the information with the richness of vocabulary (all kind of messages to clients), the capacity to decode the messages.

In itself, communication is a basic social process. A large number of writers consider communication as a necessary functional premise for any social system. No society can exist without communication. Social structures cannot be created and maintained without communication. Society is the system made up of all communicated feelings and actions. Social systems can be formed and maintained only if the persons involved are related to each other through communication.

Any joint action of individuals involves participation, transmitted through communication. Communication is not only communication but also community, participation. So, the notion of communication is used in that of organization, because without communication the organized action is impossible [3]. The activity of the aerospace companies is characterized by the huge responsibility to act in every moment to ensure the passengers safety.

Katz and Kahn showed: "communication is a social process of great relevance to the functioning of each group, organization or society", it is the very essence of the social system or organization. The organization is a stable system of individuals which work together to achieve common goals. The organizational structure provides stability for human communication and facilitates the administrative tasks fulfillment. [4]. For a lot of fields of activity, not to fulfill the tasks means penalities and a loss of a part of profit. For an other part, not to fulfill the tasks may generate an accounting loss. In the aerospace field a minor error can cause a catastrophe. For this reason in aerospace companies all the tools employed fulfill the tasks, including communications, are important.

Communication within an organization represents a less structured research field divided into different approaches: interpersonal communication, group dynamics, sociology of organizations, management, semiotics, sociolinguistics etc. [5]. In aerospace activities each of the research fields is important. Interpersonal communication studies the communication among people from a large diversity of language, culture, age, standard of incomes, importance of the transportation for life, the procedures for security. Group dynamics is involved in the study of permanent changement in the structure of clients.

Offering employees the opportunity to express their views, internal communication makes them involved partners, competent and resourceful in solving their problems. Internal communication has a participatory touch, being a member's response of any organization to the difficulties the collective has to overcome.

From these difficulties we point out the internal strategic complexity of the production, of coordination, of motivation and of the complexity of the external environment: political, economical, technological, social. In these circumstances, we require creative intelligence of the actors. [6]. To overcome in aerospace organization means first of all to survive and people have the feeling of security and safety.

Referring to the issues encountered in internal organizational communication, Mihaela Vlasceanu shows that theorists who analyzed this issue focused on addressing organizations as closed systems.

From this point, the stage of "natural and closed organizations" was shaped, based on three theories: human relations school, Barnard's theory on cooperative behavior in formal organizations and Selznick's institutional theory. [7]

Remembering Barnard, the author shows that in organizations, "the whole system of communication actually aims writing the goals and transmitting the orders for coordinating the action", the importance of the management function being to build communication relationship with those who want to cooperate. In the aerospace field all the factors (staff, clients, partners, and authorities) have to cooperate.

From the point of view of modern management communication represents a process with multiple meanings and implications. Organizational communication accompanies the evolution of the organization. Changes taking place within it leads to the need of communication changes. In this regard, redesigning the organizational structure or the informational system represents processes with direct impact on volume and structure of messages that are all over through formal channels. [8]. In the aerospace field an important part from formal channels of communicatiosare must be available for clients. In the field of aerospace the concept of "organization" is more large than the "company" from the point of view of communication.

## 3. CATEGORIES OF RECEPTORS FOR COMMUNICATION. PARTICULATITIES FOR AEROSPACE

Regarding communication, at the individual level there are at least four major categories of receptors: analytical type, directory type, amiable type, expressive type. Different audiences, internal and external, are composed up of these types of receptors. However, in most cases, there is a predominant receptor type within each audience.

Analyzing each type, we can say that the analytical type wishes quantitative results, being interested in facts and analyzing the message sent in terms of credibility of the information presented.

The director type wants to know "what's the plan?", "What to do?", "What is my role?", being focused on action and oriented towards achieving goals. The amiable type is primarily interested in human relationships, when something is communicated he wonders "Where are we in this message?", he responds well to messages that include the human element. The expressive type is oriented toward emotional communication, wanting to be involved in important goals, action-oriented, wanting to know: "Why should I get involved?".

How can we adequately address the four categories of receptors? Giving them the information in the way they need. The "Analytic" and "Director" types are oriented toward

intellectual communication; the "Amiable" and "Expressive" types are oriented toward emotional communication. The "Analytic" and "Amiable" types are focused on information, while "Director" and "Expressive" types are focused on action.

Besides the information identified as needed by the categories of receptors, it is necessary to identify and establish the role of each participant in the team. For this approach, a particularly useful feature is the Belbin test. Developed in the late of 1970, Belbin test showed that balanced teams, made up of people with different skills, record superior performance comparative with the unbalanced teams.

## 4. BELBIN'S TEST AS A USEFULL TOOL IN COMMUNICATIONS

Belbin has initially identified a set of eight roles that, available within a team, it is assumed that provides balance and increases the chances of success. Later, another role, namely that of the expert, has been added. There is no good or bad role, each role is important for the success of the whole team.

Obviously, some roles have a more extroverted attitude, others are more introverted. Each of these roles is valuable in the team and there are no principal or secondary roles. However, it is no imperative that each team comprises nine persons, but it is imperative that the roles to be present. In the small teams a person can have more than one role.

The types of roles identified by Belbin's test are: the coordinator, the trainer, the factory, the monitor, the implementer, the investigator of resources, the finisher, the expert. *The coordinator* points out the team goals, determines the program and priorities, chooses the issues but does not dominate the discussions.

In aerospace companies a coordinator is found in every department, team, on every project. A transport for a client or every individual service may be a project that needs a coordinator. *The trainer* looks for practical aspects of the project implementation, is focused on the duty, aims to win at almost any price.

In aerospace companies a trainer may be the staff involved in security systems or logistic activities, all the people whose Job description provides compliance with standards. *The factory* is innovative, inventive, creative, original, imaginative, and solves all the problems by any means.

He is the source of the original and also radical ideas, proposals and suggestions. In aerospace activities the part of original and imaginative kind of action is smaller. Only the top employees or the staff/consultants involved in the design procedures can be "the factory". *The monitor - the evaluator* is serious, prudent thoughtful, critical and analytical, in a logic and impartial way, prevents his team make reckless acts.

Managers who approve the informational flows and procedures may be "the monitor" in aerospace companies. *The implementer* is characterized by systematization, common sense, loyalty, effectiveness, is trustworthy, turns decisions and strategies of colleagues in positive actions. Every kind of projects requires the same qualities, regardless the field (including in aerospace companies). *The investigator of resources* is a good communicator, and negotiator, brings rapidly ideas and information from outside, offers the team the necessary enthusiasm at the start of a new project.

The area of jobs for the "investigator" starts with the accountant and ends probably with the buyer or procurement specialist. The knowledge about the process makes the difference for "investigator" in a special branch like aerospace. *The teammate is* sociable, flexible, adaptable, mediator, supports its colleagues, reconciles conflicts and has a calming influence; his purpose is the unity and continuity of the team. *The finisher* pays attention to

detail and quality of work, has high standards, accuracy, compliance with the program and specifications. *The expert* is focused on skills and knowledge, having motivated and dedicated professional standards of work; he is an endless source of knowledge.

If in our team we identify various problems, we can solve them this way: low achievement requires a good coordinator or a finisher; conflicts need a strong teammate or coordinator; mediocre performance can be improved by an investigator of resources, innovative or trainer; errors-prone teams need a monitor-evaluator.

Of course, depending on circumstances we need: a good trainer for new members, an innovative with good ideas for competitive situations, a good evaluator for dangerous situations. Therefore, the analysis of the team should include both the members' roles and the team's needed skills. [9]

After providing the information required toward different types of receptors, after dividing and delineation of tasks in accordance with individual skills, it is particularly important to analyze whether the message sent has reached the targeted audience in the desired shape.

This is possible by using feed-back, assessing how the information was received, if they were interesting to the target audience, or what other information would be desired by the target group.

## 5. HOW TO OPTIMIZE THE COMMUNICATION?

In order to optimize communication within a group we can use several techniques of which we could mention: the message should be clear and specific, comments should be supported with real evidence, the issues should be separated from people, negative messages should be reduced and where they cannot be removed should be mixed among the positive ones, the presented situation should be formulated as a collective decision, a good rhythm and a proper way of messaging should be used in communication.

Within the internal groups, we meet a different group named "the team". The team gives the employee a sense of belonging, contributing in a decisively way to the success of the organization. In what follows, we'll detail characteristics of the group, versus characteristics of the team.

| Characteristics of the group | Characteristics of the team |
|---|---|
| Mission of the organization can be found in the immediate objectives of the group. | Mission of the organization is the source out of which the team chooses its particular objectives. In aerospace the characteristics of the team are more relevant than the characteristics of the group. |
| Goals are externally set. For security standards and quality of service the goals in aerospace are externally set. | The objectives are chosen and their achievement is assumed. |
| The leader is formally named. In normal activity the leader in aerospace is formal. | The leader is informal, the leadership being taken by either member team, depending on the context. In an aerospace crise there may be an informal leader, but in accordance with standard rules. |
| Formal responsibility is in charge of the leader. | The responsibility is divided among the team members. |

| Individual responsibility refers only to the initially assigned duties. | Responsibility is first common and then individual. |
|---|---|
| Task completion is the result of adding up the individual efforts. | Task completion is the result of adding up the collective and individual efforts. In aerospace it is normal to assume that the task completion is the result depending both on collective and individual efforts. |
| The group is based on the amount of its entities. In aerospace the group is composed by staff and clients. If the staff may be an „entity", the clients are sure „an amount of entities". | The team is based on community, as an entity. |
| Meetings: formal meetings with the role of preparing the work front, to allocate resources, responding to the managerial functions of organization, coordination and evaluation. | Meetings: informal, without time limit, with the role of solving problems and to identify the way to go. In aerospace activities such meetings are expected to solve unexpected problems. |
| The roles are assigned by competence, from the beginning of the group. In aerospace the competences is the "allocation criterion" for every kind of task. | There are no pre-established roles; there is a multidisciplinary approach depending on circumstances. |
| The rules are formal and administrative, not always respected. | The rules are rigorous, unwritten but respected in order to maintain cohesion. |
| Discipline is followed by control and its absence is sanctioned. In aerospace activities lack of discipline means disaster. | The discipline is willful; deviation from the rules is corrected in real time. |
| Rewards are individualized, predictable and a priori quantified. | Rewards are collective but also individualized, according to the performance value. |
| Moral sanctions apply to the group, administrative sanctions apply to individuals. In aerospace activities the administrative sanctions mainly apply to employees. | Administrative and moral sanctions apply to the team. |
| Usually, there is not a strong subculture. No manifestation of subculture is accepted in aerospace as a deviation of procedure. | They are proud by their own subculture. |

For an efficient teamwork it is good that the work be organized on the basis of some techniques, such as: clarification of the team mission, learning the mission by all members, establishment and assumption of the objectives, insurance and maintenance of the communication, formulation of the accepted methods, clarification of the independence degree and individual development, choosing the methods of work that can lead to performance, adoption of norms and rules of responsibility assumption within the team, learning methods to enhance the coherence within the team, learning how to integrate the new members.

# 6. COMMUNICATION IN AEROSPACE – UNDERSTANDING THE FUTURE

Communications have to keep the speed of management and technology in aerospace field. By example, the concept of advanced airborne separation means a new level of communication of each aircraft. This has to manage a conflict-free four dimensional trajectory intent [10].

The studies of optimum channel will have maybe interesting developments in aerospace activity. The transmission channel, represented by physical environment [11] started already to be a concept in aerospace activity. All the requirements for communication in aerospace activity will be transformed in requirements for the transmission channel. So, the technology will be "partner" of the progress of social sciences in the fields of communication.

As a managerial factor, communication has long been seen as a critical issue in all aspects of human interaction. More than this, communication is usually reported to be the major contributing factor into aviation accidents. It is accepted that communication is essential for organizational and managerial performance and success in any branch, including the aviation environment [12].

The general accepted rule for management "*Our people are our most greatest asset*" [13] may receive new meanings. For aerospace and for many other fields with high dependence of clients and confidence, the word "people" mean more than labor force, mean clients and the confidence of all potential clients in goods and services of a company. The communication in organization will be represented in such terms by communication with all potential clients. The context in which people have come to know each other is also important, like in aerospace activities, as that can imply certain kinds of loyalty (or perceived obligations) [14].

The involvement of social sciences and modern management with the concept of organizations build and based only on people will have large applications in communication for the aerospace activities. The rule that *people have goals*, not the organizations [15] will focus on communication to know what people (labor force and clients) want from a company, including in aerospace.

The dynamics of changes in the future for aerospace compel us to take into consideration the basis of the information theory: complete information is unavailable and the world is an uncertain and complex area [16].

# 7. CONCLUSIONS

The progress means more and more communication. As the aerospace companies are representative for the ideea of progress, it is normal to find into their activity a path towards a new era of communication.

There are at least four major categories of receptors: analytical type, directory type, amiable type, expressive type.

The types of roles identified by Belbin's test are: the coordinator, the trainer, the factory, the monitor, the implementer, the investigator of resources, the finisher, the expert.

The team has an essential objective (the one of guidance and coordination), is based on the premised that people from the team want to be a part of it; all team actions focus on achieving the targets, there is a mutual appreciation of the contributions, the team records better results than those achieved by its members individually. In other words, the team excellence is based on the conjugation of talents, behaviors, values and goals of its members.

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