

DOI: 10.37943/AITU.2020.17.13.004

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THE EMOTIONAL INFECTION OF THE VIRTUAL INNOVATION PROJECT TEAM

Abstract: Emotional infection is considered as a social and psychological mechanism of transferring the mental mood of the manager to the virtual project team and stakeholders of the projects. Emotional impact in the face of direct contact and the inclusion of the virtual team members in certain mental states have an impact on the effectiveness of project management. The main objective of emotional infection analysis is educated and creates the organization of new behavior in adverse, deadly, and aggressive external conditions the manager or virtual team. In times of global crisis and depression 2.0, the emotional behavior of the innovation project manager and his infection with the project team is exacerbated by external uncertainty. The stakeholder infection model is based on an understanding of the life cycle of the project manager, which is presented as a curve for personal changes of the manager of innovative communication projects and programs. Emotions are considered in content, reflecting the various aspects and meanings that caused them. To apply the psychophysiological formula for assessing the impact of the emotional state of the virtual team of innovative projects, these influences have been transformed into a competent model for managing these projects.

Keywords: innovation project, emotion intelligence, emotional infection, competences, the virtual project team, behavior

Introduction

The task of building trust in virtual teams becomes significant for many modern companies. In such circumstances, the attention is paid to creating databases for decision-making, the knowledge base needed to form the virtual team and to understand the value of diversity [1, 2]. Effectiveness of virtual teams is dependent on the level of trust and the shared vision of project management principles. Building trust in the virtual team can be additional efforts to adapt organizational business practices depending on the specific nature of national cultures, ethical principles, the legislative framework of specific countries, differences in levels of economic development, level of competence team members.

Lack of communication, diversity in national cultural traditions, language barriers, including differences in national ethics and laws, can serve as barriers to establishing trust. Trust-building methods for virtual teams have its specifics. In this case, could be useful complementary technic with emotional infection of the project or program manager. Collaboration in the virtual team is initiated first. Complementary suggestion, discussion and acceptance by the virtual team members of a set of regulations that allow and restrict the actions of team members can provide a higher level of confidence.

Creatively, innovative thinking of the virtual team is the most valuable, open-ended part of stakeholders thinking that manifests itself in the form of certain emotions [3, 5]. The health of innovative thinking is a delicate balance between the order and the chaos of stakeholder behavior. Behavior is often manifested through a variety of emotions. Scientific advances in this field are limited and far from complete, but at the same time, several common features inherent in this process and the behavior of innovative project managers can be distinguished. Mission (goal structure) is defined as the result to which the activities of managers are directed. The goals are arranged in a certain sequence which regulates the rational and emotional activities of the manager. As soon as one of them is reached, a new one arises and so on until the final goal is reached. Each step towards the main goal has a local purpose. Therefore, thinking can rationally organize (profile) the mission [6, 7]. Such an organization serves to manage actions in an innovation project. Many goals and stages of their achievement are profiled in the form of a graph having the structure of a tree. The behavior of a modern project manager is organized in such a way that thinking is the cause and action is the consequence (think first, then do it), though it is often the other way around. The peculiarity and a priori uncertainty of the innovation goal is its new quality. In turn, the innovative qualities of the purpose of the concept are relative and depend on subjective evaluation, experience, erudition, emotional intelligence, the benevolence of expertise, public recognition.

Theoretical background

Emotional infection in the virtual team is closely related to empathy although these concepts do not fully coincide.

Psychologists Elaine Hatfield, John Casciopo and Richard Rapson also studied emotional infection. Their research has shown that the conscious evaluations that people give to their experiences depend heavily on what others have said. The intensity with which this phenomenon manifests itself is influenced by several factors: how much a person is dependent on others socially, the strength of the connections within the virtual team in which it occurs, the personality traits of a person, many demographic characteristics [16].

To share the emotions in the virtual project team is not necessary to see them in person. The experiments conducted based on Facebook and Twitter and showed that emotions are transmitted in the virtual space.

In some cases, the emotional infection can be controlled consciously. Usually, we are talking about the fact that the leader of opinions or a group of people, pursuing their own goals, seek to cause some kind of emotions in society. As you know, great power gives rise to great responsibility, thus it depends on the leader whether he will use influence to inspire people to constructive activities or, say, sow panic, and then offer a "cure" (this strategy is used to get more control).

Managing innovation project be the virtual team very often appear emotional resonance. The technique of emotional resonance can be defined as a way of creating a certain mood among wide virtual team members while transmitting useless information. Emotional resonance allows you to remove the psychological defenses that the virtual team member builds on a mental space, deliberately suggested to protect himself from useless (propaganda

or advertising) brainwashing. Relevant techniques have been known since ancient times. They are based on the phenomenon of social induction (emotional infection). The fact is that the emotions and feelings we experience are largely social phenomena. They can spread like an epidemic, sometimes infecting tens and hundreds of thousands of people and causing the masses to “resonate” in unison. The virtual teams are social creatures and easily perceive the feelings arising from others. This is visible at the level of interpersonal relationships. Absolute term what it means to “spoil the mood” of a loved one and how easy it can sometimes be done. The effect of emotional infection manifests itself especially strongly in the crowd - a situational set of people who are not connected by a conscious goal. The crowd is a property of a virtual team as the social community, characterized by the similarity of the emotional state of its members. In the crowd there is a mutual infection of emotions and, as a result, their intensification. The nature of the mass emotional infection is almost unstudied. One of the interesting hypothesis states that the main role in this is played by the appearance of resonant oscillations in the structure of electromagnetic fields formed by the human body [8, 9].

The mechanism of human behavior in a crowd is described in references, they all coincide in the fact that a virtual team member, becoming part of the masses, falls under the power of passions. Typical signs of human behavior in a crowd are the prevalence of situational feelings (moods), loss of intelligence, responsibility, hypertrophic suggestibility, easy controllability. These conditions can be enhanced by various means. The necessary moods are caused by the appropriate external environment, a certain time of day, lighting, light stimulants, various theatrical forms, music, songs, etc. In psychology, there is a special term - fascination which denotes the conditions for increasing the efficiency of perceived material using related background effects. Most often, fascination is used in theatrical performances, game and show programs, political and religious (cult) events, etc. - to infect people in the crowd with a special emotional state. Against this background, the relevant information is transmitted, and we must strive to ensure that it is not too much.

In the modern world, the emotions we experience are largely the result of induction caused by the mass media. Creating emotional resonance is one of the main tasks of most informational messages and entertainment shows. The media mostly attempt to evoke strong emotions in a wide audience, and if necessary, they bring these emotions to a psychological shock. A simple example: pay attention to those intonations with which radio or television presenters read out information about events in the country and the world. When it comes to tragic events (catastrophe, war, terrorist act), intonations are usually filled with noble sorrow or indignation towards the perpetrators. If, for example, after this, there is a message about the next meeting of the head of state with miners (pilots, teachers, doctors). The manager will notice to the virtual team how on-TV screen instantly transforms and “constructive optimism” and confidence in a happy future begin to appear clearly in her voice nation. This technique is called “emotional adjustment to the situation.” In such a simple way, you can form the emotional attitude of a mass audience to a particular event.

The result is the following classification of the emotional process:

- affects - short-term and intense emotional processes, accompanied by pronounced motor manifestations and changes in the work of internal organs;
- emotions are longer and less intense than affects, emotional processes that reflect the subjective meaning of situations, but not of specific objects in themselves;
- feelings are longer and less intense than affects, emotional processes that reflect the subjective meaning of specific objects. For example, hatred moods are quite prolonged emotional processes of low intensity.

A negative impact is blindly following someone else’s mood and reactions, for example, when a “breeding ground” of gossip and negativity appears in the team, which changes the

mood of the masses, causing anxiety and distrust of colleagues, which, of course, affects labor efficiency. Unconsciously “mirroring” the emotions of other people, we begin to feel the same emotions as they are.

The positive effect is associated with self-control. We try to manage our own emotions, notice changes and control our condition. For example, a confident leader can easily convey an optimistic attitude to his team. Here for the manager, it is important to give people a positive charge, set up and motivate them to succeed in their work.

Interestingly, in this case, infection occurs without the participation of non-verbal signals. However, the inability to see the poses and facial expressions as well as to hear the voice of other people is compensated by new means of transmitting emotions that are used when communicating with the virtual team on the Internet. This is a certain style (you know exactly a certain number of people who abuse caps and punctuation marks), typical mistakes that people make when they are nervous and, in a hurry as well as the specifics of using emoticons and stickers. This area is still waiting for its researchers – we give an idea.

Emotional infection is a socio-psychological mechanism of transmitting the mental attitude to other people from one person or group of people, emotional impact in conditions of direct contact and the inclusion of the virtual team in certain mental states.

In the study of the emotional component of the processes of managing innovative projects recognition was created by the psychophysiology Simonov. Formula, in a short symbolic form represents a set of factors that affect the emergence and nature of the effects of emotions.

$$E(t) = f \left(P(t)^* (In(t) - Is(t)) \right) \quad (1)$$

where $E(t)$ – emotion, its degree, quality and impact; $P(t)^*$ – the power and influence of the actual need; $(In(t) - Is(t))$ – assessment of the possibility of meeting the need based on innate and ontogenetic experience; $In(t)$ – information on cost, meeting the need; $Is(t)$ – information about existing assets that the virtual team and manager actually owns [4].

The factors listed above are decisive, necessary and sufficient but a time factor should also be considered. Emotion can be either short-lived or long-lasting. At the same time, it is necessary to consider the peculiarities of emotions and individual-typological features of managers of innovative projects. From the formula, it follows that the possibility of satisfying the need influences the sign of emotion. A function that reflects emotions is the same as an evaluation function.

Emotional infestation is a social and psychological mechanism of transfer of mental mood to other people from one person or group of people, emotional influence in the conditions of direct contact and inclusion of a person in certain mental states.

Emotional contamination occurs in large open spaces, especially in virtual communities, for instance, in a crowd that can spread certain emotional states quickly. Most often, these conditions can be markedly enhanced by multiple reflections of the virtual team in the chain reaction scheme. However, unlike cognitive chain reactions, complementary emotional transmission is less conscious and more automatic.

Emotions are different in content, reflecting various aspects of the significance of their situations. To apply the psychophysiological formula for assessing the impact of the emotional state of the stakeholders of innovative projects, we transform these influences into a competent complementary dream model of managing innovative projects [10, 11].

Not only members of the project team but also other participants involved in the project in one way or another, including service companies, agencies responsible for forming a temporary staff, etc. – all of them is directly affected by the project product, or the project imple-

mentation process. The stakeholder is, therefore, a generic term that defines all institutions, companies and individuals who are directly or indirectly affected by the project [12, 13].

A project manager is a mission-oriented professional with the necessary authority to manage and integrate the project; its role is to detail the mission of the project on goals and objectives, to formulate a complementary strategy for its implementation, and to form a virtual project team consisting of experienced professionals to perform work on a project that has certain limitations and conditions for implementation.

The skills, models and management techniques used in a project depend on whether conventional management methods can be used or for maximum effectiveness, eleven virtual team project management areas need to be applied.

How to resist penetration into virtual project team negative emotional infection. How to the infected virtual project team by positive emotion.

If you feel that after a short conversation with a team member or communication on social networks, there was discomfort, most likely you were infected with negative emotions from the interlocutor. How to counter this?

1. Calm down. If you are angry, it is best to stop communicating and try to calm down. Then you should ask yourself the question: what is happening now? What is the purpose of your communication? Perhaps you need to stop communicating at all or try to shift the conversation into a more constructive channel a little later when emotions calm down.

2. Develop critical thinking. No matter what the interlocutor tells you, it is important to keep a cool head, to collect and analyze information, to compare facts. Then it will be harder to manipulate you.

3. To be here and now. This is a good habit, helping to realize that at the moment you are infected with negative from the interlocutor. Try to concentrate on something positive, pleasant, to regain your good mood.

4. Spread your shoulders. Our brain is designed in such a way that if we straighten our shoulders, inhale deeply and straighten our back, it reads this as information that everything is fine with us. After some time, we begin to feel much better. Therefore, if you feel that you have become infected with negativity, simply straighten your shoulders and smile.

Simply purely intuitive is attracted to us by an interlocutor who listens carefully to us, understands our emotions and feelings, does not give any marks to our actions, does not torment us with advice "from our own lives", respects our opinion (even if he does not agree with us) ... Then there is a strange feeling of unity, a feeling that you are both - at one wave.

It is believed that the concept of "empathy" comes from the Greek pathos - a strong and deep feeling, close to compassion, with the prefix -em, which means the direction inside. You can feel empathy, even at the root of disagreeing with the point of view of the interlocutor.

Detecting empathy with your interlocutor means to perceive the inner world of another but without losing contact with oneself. This means that you must retain the ability to return to your world of emotions. If the shade "as if it is with me" (the key part - "like") disappears, then instead of empathy there is an identification with the emotional state of the interlocutor, you become infected with his emotions and experiences to the same extent as he.

Empathy does not mean "putting yourself at the place of the interlocutor," it is not copying his feelings. Empathy is an attempt to look at things through the eyes of the interlocutor. Another very important point: one can feel empathy, even at the root of not agreeing with the point of view of the interlocutor. That is, you are capable of deep understanding of the feelings of the person with whom you speak, you distinguish your own emotions from those that arose in response to the emotions of the "other side" in the conversation.

Many of you probably have heard of a psychologist Carl Rogers, he defines empathy as follows: "Being in a state of empathy means to perceive the inner world of another accurately,

with the preservation of emotional and meaningful shades. As if you become this other, but without loss of feeling “like”. Yes, you feel the joy or pain of the other, as he feels, and perceive their causes as he perceives them. But there must be a shade of “like”: “as if I’m happy or frustrated.”

Empathy is not a formal logic nor an appreciable reaction. Empathy promotes effective communication [24].

Project managers in their work constantly feel the need to understand the interlocutor as fully as possible.

This is felt during an interview with a potential candidate for a vacant position, in solving conflict situations, in the formation of a system of motivation, in the creation of project teams, in optimizing the number of staff, in the release of employees - in all these cases, the project manager is vital to listen and hear interlocutors.

For efficient and effective work with the personnel, it is necessary to understand the essence of the real motives of the actions of the employee, the source of his interests, the causes of lies, the goals of isolation.

When forming a team (especially in the “storm” stage), various emotions are raging which is challenging to control and direct in a constructive way. It is worthwhile making a reservation. It is not about the phenomenon of nature but about the five stages of team formation: formation, storm, normalization, execution and completion.

If we talk about “storms” in a very short way, then you can characterize it so. Initial optimism after a starting jerk gives way to pessimism, if not frightened by the tasks set. A sense of disappointment or disagreement about the goals, responsibilities in the project.

To achieve a general result, it is necessary not only to listen but also to understand the point of view of each member of the team, to come to a common opinion, while avoiding a clash of interests and the collapse of the team.

If the company introduces a system of motivation based on an individual approach, then only through an empathic hearing (it is also called “active listening”) it is possible to determine the internal motives of each employee, and, therefore, get to the point, making a specific motivational proposal to a unique specialist, expert. In addition, as a consequence of the competent elaboration of the motivation system, one can solve the problem of retaining the key specialists of the company. In our time of high competition, the latter task is especially relevant: as a highly professional specialist an expert can be a talented leader.

Accordingly, when “good” people go, very often take away all their team.

Business erases state and national boundaries. Now no one will surprise anyone with the multinational staff of the company, as it was 15 years ago. Intercultural features of the company require a project manager special knowledge in the field of relations (and business including) and a deep understanding of the intricacies of the culture of different countries and denominations whose representatives work in the company. In cross-cultural companies empathy becomes a connecting link in shaping a common corporate culture.

Microsoft CEO Sathya Nadella argues that empathy is a critical component in developing products or concepts that helps understand the needs of people and gain their trust. In addition, the ability to read alien emotions will be needed in negotiations and for conflict situations. The head of this skill will inspire subordinates and lead them with them. The line-up employee is to maintain a friendly atmosphere in the team (and this, as the research shows, has a positive effect on our performance). By showing empathy in working with clients, you can find a common language even with the hardest people.

Usually emotional exchange occurs on a thin, almost imperceptible level. The ability to calm down the painful experiences of other people and the ability to communicate with the interlocutors, who are in absolute fairy tales, are indicators of higher skill. The only effective

strategy is this: you need to deeply absorb the feelings of a person and then adjust it to a more positive wave.

How to develop empathy? It is important to understand that it is closely related to other elements of emotional intelligence - the ability to recognize and control their own feelings. This should be learned first and foremost.

The map of empathy was created many years ago by Dave Gray, the founder of XPLANE, the author of the techniques of brainstorming "Geyshtorming", the author of books on visual thinking practices.

Empathy map is an idea rendering tool developed by XPLANE that allows you to put yourself at the user's point of view to look at the problem your product solves with your eyes. The map of empathy is a scheme in which the center of a representative of a certain user segment is placed; on the different sides of it there are 4 blocks ("think and feel", "say and do", "see", "hear"). The conclusions are presented in two additional blocks: "problems and pain points" and "values and achievements".

The map of empathy is relevant where you need to look at the product from the eyes of the client:

1. Development of strategy;
2. Launching, completing a product or service;
3. Search for new directions;
4. Improving the level of service;
5. Working with the atmosphere in the company [25].

If the project manager is already familiar with the audience, then the empathy map details the context of the use of the product, at the start of the project will show where the gaps in the data. An empathic map can be constructed for any product and it does not matter if it is implemented or exists only in the format of the idea.

So, what you need:

1. Determine the approximate target audience.
2. Conduct a "brainstorming" with a team / customer and fill out a map based on your experience and assumptions.
3. Conduct online research. Not only and not so much how users interact with your product but how they behave in relation to the problem that your product solves. For example, if your product is a project management system for Microsoft Project, then you need to learn what ways the project management tasks are solved by users, which they like, and what they do not like, which in principle cannot be made, and I would like to the tools they involve in the process, etc. However, it is important to remember that empathy is different from the impassive study of how a person uses something. Empathy is related to empathy with the understanding of what the user wants to achieve, no matter if he knows about the product that the team creates.

Conduct interviews (potential or real) users. You can also observe their work instead of interviewing (better, in addition to it).

The map of empathy is an instrument of brainstorming. To work in a team to be effective, it is important:

- prepare in advance - if they send materials to the participants in 2-3 days, they will have time to get acquainted with the topic, to think about the tasks and to prepare the necessary data;
- speak the main task at the beginning of the discussion - so the project manager will make sure that all participants in one wave know the goals and rules of work;
- record the course of an assault - you need to choose a person who will fix the ideas, so as not to miss nothing.

The information is distributed in blocks as follows (figure 1) [19, 21, 24]:

Think and feel: what troubles the user? What words does he think about the problem? What is there to doubt? It's better to look for this information where users complain: for example, in forums.

Say and do: how does the user behave publicly? What does it say? What is the solution to the problem? This information should be searched on social networks.

See: what is the environment in which the user is located? What are the suggestions and alternatives your product faces?

Hear: how does the environment in which the user is, affects him? What say colleagues, acquaintances, authoritative sources for him? What media channels have an impact on the user? Unlike the block "see", the information here does not necessarily correspond to reality. But the user trusts her. Where to find information for this block: rumors and thoughts on forums.

Problems and pain points: what troubles the user? What is he afraid of? What could be the reason that he would give up your product? Often, the "I Think and Feel" block becomes a source of information for this. All these fears and doubts will have to be dispelled, and this can be done by a bunch of ways: from the "right" text in the interface to the individual consultations.

Values and achievements: what will help the user to get rid of problems and doubts. For what product features is he willing to pay. What values should be broadcast. Conclusions from this block affect the product from a variety parties: they can cause both small changes in the interface or in the text, and the addition/exclusion of certain functionalities and sometimes even a change in product positioning.

The main risk of the project is becoming "burnt down" employees. The project rhythm and the large flow of tasks cause such people to be annoyed. To understand why such people, appear in an organization, consider the model of development of a specialist, built on the parameters "skill/motivation". This model is needed to understand at what stage the "life cycle" can be staffed by the project and how it affects their motivation.

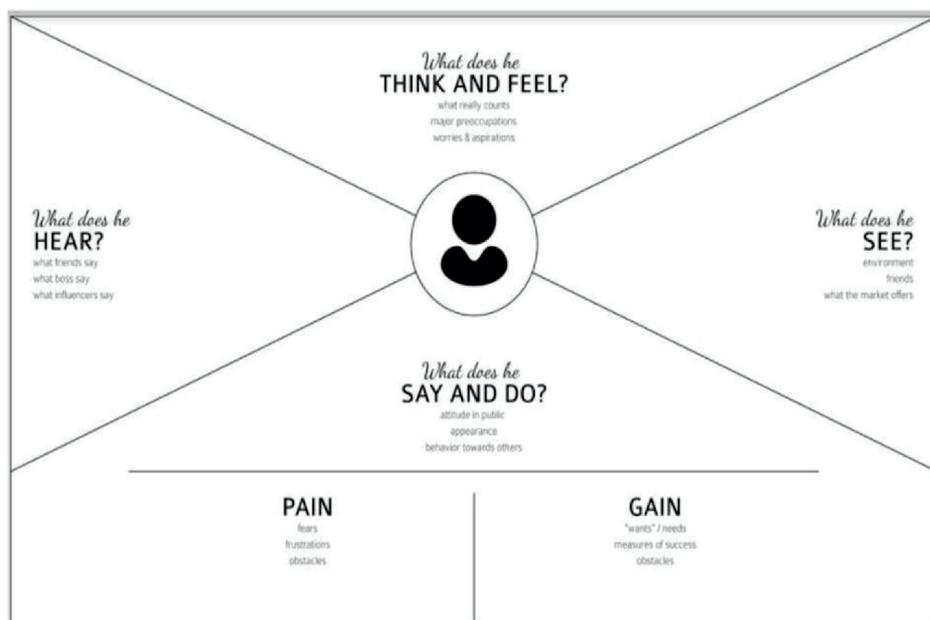


Fig. 1. Empathy Card [24]

If we consider the personal change curve of the manager during the life cycle of the project (Fig. 2).

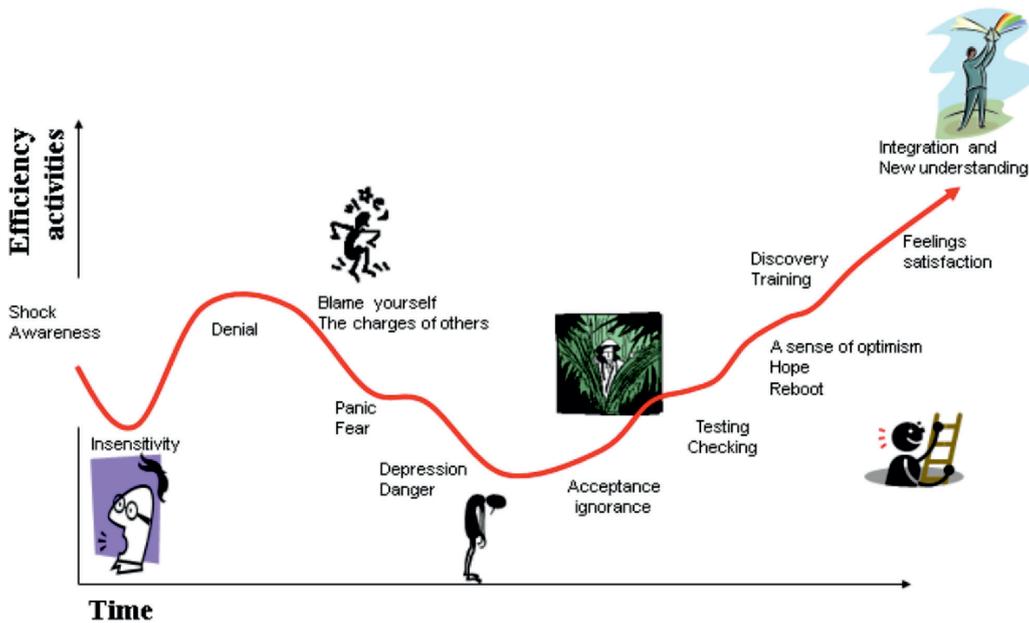


Fig. 2. Curve of personal manager changes during the life cycle of the project

Then it becomes apparent that at the beginning of the project there is a decline in the team's activity and the manager needs empathy from the stakeholders and a conceptual model must be presented in two parts in order to achieve a balance:

$$\text{Motivation} = \text{Emotional Intelligence} + \text{Empathy} \quad (1)$$

$$\text{Project success} = \text{Emotional intelligence} + \text{Transformational leadership} + \text{Competencies of project manager} + \text{Created Values} \quad (2)$$

The motivation of the team at the beginning of the project is most affected by the emotional intelligence of employees and the empathy of the stakeholders.

Stage 1 – Little experience, lots of enthusiasm (low skill, high motivation). This may be a young specialist who got his first job; a person who has decided to try himself in a new profession or a professional who has been promoted to a managerial position. In general, any of the options when a person just came to a new place is very keen to succeed, but still does not understand how to do it.

Stage 2 is the first disappointment (low skill, low motivation). At this stage, our expert comes to the understanding that everything is not as easy as it seemed at first. He makes the first mistakes, succeeds at once, and, most importantly, comes the understanding that the path to the summit is long enough and not at all as simple as it seemed at first.

Stage 3 – natural growth (skills are increasing, motivation is different). If a specialist manages to overcome the previous stage, he enters the path of professional growth. It is already clear what exactly needs to be done for development, it is also clear that the path to success lies through a long methodological work. This stage is usually quite long, with its black and white stripes, so there is not one level of motivation on it, the only thing that can be said is usually enough to keep moving forward.

Stage 4 – Competent specialist (high skill, strong motivation). At this stage, the specialist goes to the competence plateau, and can begin to perform tasks autonomously (without a manager), gradually expanding his sphere of responsibility and helping beginners at work.

Ideally, having worked for some time in this mode and having prepared a replacement, the employee goes to the raise and returns to the first stage, starting a new turn of his career spiral.

In real life, unfortunately, it often happens not so. New posts are not always available and teaching yourself a worthy replacement does not allow for the absence of any candidates for this post, so the next stage comes.

Stage 5 is a very competent specialist. This condition is described by the English word “overqualified” and indicates a significant discrepancy in the competence of the specialist and the needs of his office. The state is characterized by a constant decrease in motivation, due to the lack of a positive connection from the implementation of complex, interesting tasks. After some time, the decline in motivation leads to disappointment from work, and shifting the priority from work to something else (hobbies, families, and outsourced projects). Typical external attributes: a person starts to work strictly on schedule, and at a meeting more speaks not about his work, but about something that took her place in the system of priorities. Man at this stage does not necessarily work badly. On typical tasks, lack of motivation from a good specialist is offset by a high level of professionalism. Problems begin if complex tasks appear that require exit from the comfort zone; in this case there will be behavior that is the opposite of the expected – instead of labor enthusiasm there is a rejection or even resistance. This is because solving problems beyond the competence requires a high place in the system of priorities, and the place is already occupied by something else [26].

Expectations of management begin to disagree with the behavior of the employee. The employee begins to press, which demotivates him even more.

The final, sixth stage of this process will be professional degradation, and the person from the state “may, but does not want” goes into the state “does not want and cannot.” Such employees are either cut short by the state’s next optimization, or they end their path in “paper” positions with a low level of responsibility.

Common features of transformational leadership and emotional intelligence

Recently, the classification of leadership has changed, in particular, Burns includes the following formats:

- Transformation;
- Transactional;
- Non-intervention [18].

Transformational Leadership. Leaders put the needs of employees higher than their personal.

Transaction leadership has three components:

- Contingent remuneration, while the productivity of subordinates is related to conditional rewards;
- Active management, through which leaders monitor effectiveness and apply corrective actions if deviations occur;
- Passive management (leaders intervene only when problems become serious) [19].

The third type of non-intervention leadership. This leadership style can be described as non-leadership or avoiding leadership responsibility. Leaders do not respond to requests for help and oppose the expression of their views on important issues.

Leadership is undergoing fundamental transformation today, the transformation from a leader critic to a leader as a partner and coach takes place. This role transformation requires some skills, because leadership is what you do with people, not with them. Numerous studies have shown that transformational leadership positively affects productivity, job satisfaction. Therefore, we can assume that the skills

The transformational leadership will stimulate efficiency and innovation in this volatile market. Bennis and Nanus identified four characteristics of transformational leadership:

- Idealized influence;
- Inspirational motivation, where the leader inspires and supports team spirit;
- Intelligent stimulation, when a leader encourages creativity and innovation;
- Individual consideration when a leader maintains and supervises every follower.

By conveying the content and purpose of work delegated to their employees, transformational leaders inspire and motivate followers to go beyond expectations (Shamir).

Transformational leaders use intellectual stimulation to encourage innovative ways of working and problem solving.

Bass and Avolio noticed that transformational leaders are more successful at the workplace, moving forward with racetracks, improving their financial performance, and were rated as more effective for their employees than transaction leaders [20].

Transformational leaders stimulate and inspire followers to achieve extraordinary results, as well as develop their own leadership potential. Transformational leaders take into account the needs of individual followers.

Case study of emotional infection for innovation project virtual team

During the implementation of the virtual project team have professionals from different fields of knowledge with different skills cooperate to achieve the mission of the program [14, 15]. The complementary community is a mental space of partnership and competency, in which the professional competencies of the virtual team members are concentrated. The competence of the team is formed, as well as the cooperation between professionals is encouraged to create a complementary teamwork capability.

At the program level, the most important thing is to set up interfaces for interaction between organizations and program virtual team members.

To form a harmonious of the virtual team, the following rules must be done:

1) mutual strategic trust in the realization of common tasks: observance of social ethics, orientation on productive complementary cooperation and commitment into the project;

2) defining the context and principles of the innovative project - an unequivocal interpretation of the mission, tasks, roles and virtual professional terms within the complimentary style;

3) defining the project regulations – principles of project implementation, common professional or technical language, terms for communication and standards of implementation of business processes;

4) the availability of professional skills that are implemented in the work on the program;

5) space (“Ba”) is a common complementary space used by the virtual team to support their professionalism and engagement within the project, with a minimum set of rules.

Let look on the conceptual model of complementary action of the virtual project team (fig. 3).

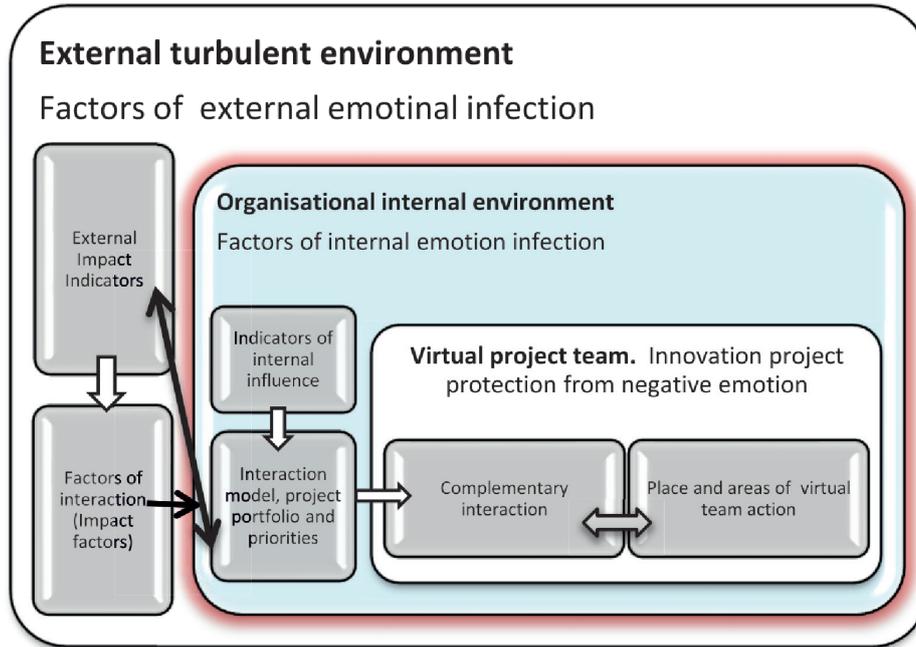


Fig. 3. Conceptual model of organizational development programs in a turbulent environment

Effective virtual team management requires visibility, usefulness and novelty. For participants to feel the usefulness of the community, it should develop and present real and clear plans for the implementation of the program, quantitative indicators and methods of interaction. Besides, the community should be able to access the application's databases and databases at any time, from anywhere. Otherwise, it will be difficult to attract first-rate professionals to participate in the program.

The stakeholder infection model is based on an understanding of the life cycle of the project manager, which is presented as a Kubler-Ross curve for personal changes of the manager of innovative projects and programs (Fig. 4).

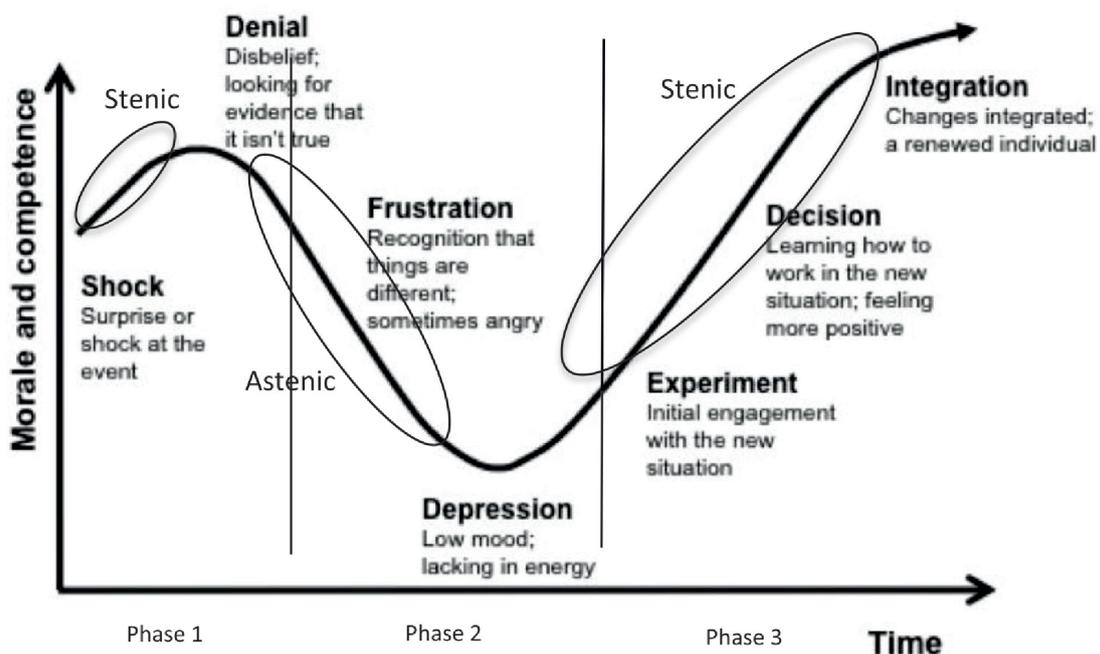


Fig. 4. The curve of personal changes of the innovative project the manager and virtual team

On the initial phase of project activity within the virtual team defended next steps - “shock, surprise, reflection” and “denial”. This is a short-term phase where the wall and asthenic stains are infected. These infections usually do not extend beyond the project management virtual team.

The second phase is related to a significant drop in performance. These are “blaming yourself and others,” “panic and fear,” “depression and danger.” At this phase, an asthenic infection is formed that goes beyond the project management team.

The third phase involves the transition from asthenic to wall infection of the virtual team and key stakeholders of the innovation project. In this phase, the following factors are formed - “acceptance of ignorance”, “testing and verification”, “feeling of optimism, hope and restart”, “opening, learning”, “feeling of satisfaction” and “integration and new understanding” of the innovation project.

The simulation results of the implementation of the innovative Knowledge Base Creation ‘International program Euro MPM’ by the virtual team from 10 University from European countries are shown in Table. 1 and Table. 2. At the same time, “score 1” was considered as an assessment of the current state of the innovation project before infection, “score 2”, after infection of the project virtual team.

Key competencies for creating intelligent project support and virtual team engagement for innovative projects are Strategic Thinking, Integral Thinking, Leadership, Coordination, Communication Skills (provided by information systems, databases and knowledge), as well as motivated, professional initiatives.

The results of the assessment of changes in the competence of the manager and team of the project with “asthenic emotions” are shown in Fig. 5.

Table 1. Assessment of changes in the competence of the manager and team of the project with “asthenic emotions”

| Nº | Criterion name | Score 1 | Score 2 |
|----|-------------------------------------|---------|---------|
| 1 | Self-reflection and self-management | 6 | 4 |
| 2 | Personal Integrity and Reliability | 5 | 3 |
| 3 | Personal Communication | 5 | 3 |
| 4 | Relations and Engagement | 6 | 3 |
| 5 | Leadership | 7 | 6 |
| 6 | Teamwork | 7 | 6 |
| 7 | Conflict and Crisis | 6 | 3 |
| 8 | Resourcefulness | 5 | 4 |
| 9 | Negotiation | 6 | 4 |
| 10 | Results Orientation | 6 | 4 |

The chart of changes in the level of competence of managers of innovative projects (Fig. 5) shows significant drop incompetence in the context of the influence of asthenic emotions. In this case, the coefficient calculated as $K = (\text{Score 1}) / (\text{Score 2})$ in this case is equal to 1.55, which indicates the negative impact of infection on the application of the competence of the project manager.

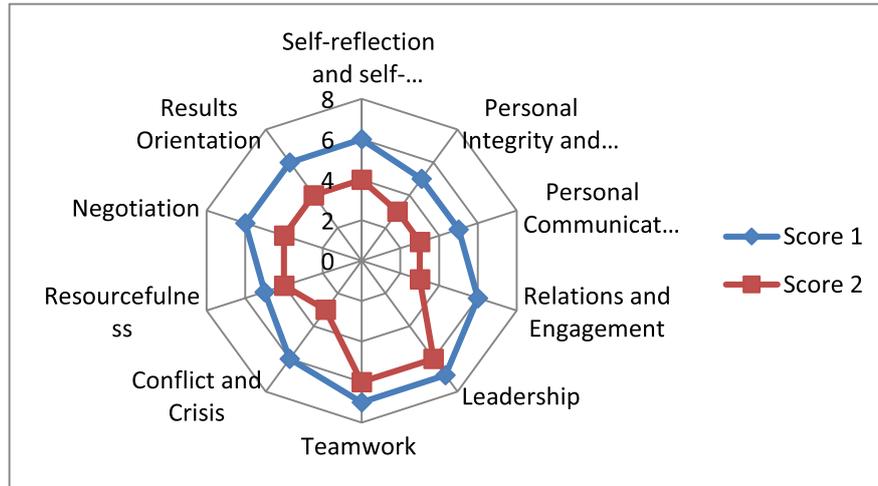


Fig. 5. Assessment of changes in the competence of the manager and team of the project with "asthenic emotions"

The graph of changes in the level of competence of managers of innovative projects (Fig. 6) shows a significant increase in competence in the context of the influence of wall emotions.

In this case, the coefficient K is 0.63, which indicates the positive impact of stakeholder infection on the competence of the innovation project manager.

Table 2. Assessment of changes in the competence of the project manager and team with "stenic emotions"

| Nº | Criterion name | Score 1 | Score 2 |
|----|-------------------------------------|---------|---------|
| 1 | Self-reflection and self-management | 5 | 8 |
| 2 | Personal Integrity and Reliability | 5 | 9 |
| 3 | Personal Communication | 4 | 7 |
| 4 | Relations and Engagement | 6 | 9 |
| 5 | Leadership | 6 | 8 |
| 6 | Teamwork | 6 | 8 |
| 7 | Conflict and Crisis | 5 | 9 |
| 8 | Resourcefulness | 5 | 8 |
| 9 | Negotiation | 5 | 8 |
| 10 | Results Orientation | 5 | 9 |

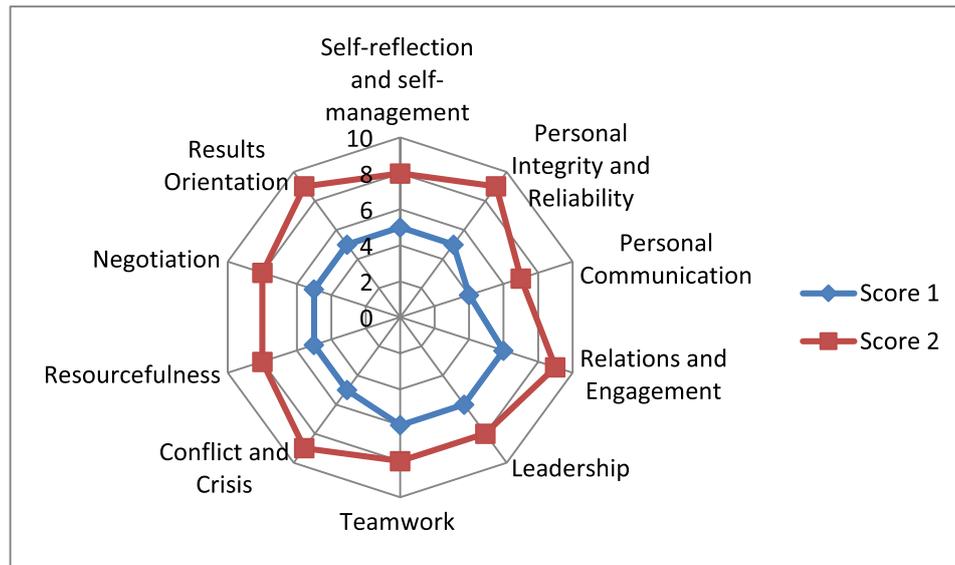


Fig. 6. Assessment of changes in the competence of the project manager and team with “stenic emotions”

The application of the proposed model and the approach to assessing the competencies of the manager and team of the innovation project is conceptually understandable and fully proven as to the adequacy of the model.

Conclusion

Development of a model of emotional infection of a virtual team of innovative projects in crisis conditions allows specifying the trajectories of project implementation in the influence conditions of internal and external environment.

The results of modeling in the implementation of an innovative Knowledge base creation project at the International program Euro MPM determined that the key competencies for creating intellectual support with complementation for innovative projects and virtual team infection are strategic thinking, integrated thinking, leadership, coordination, communication skills systems, databases and knowledge, as well as, motivated, proactive and professional leaders of the virtual team.

References

1. Verenych, O. (2019). *The Blended Mental Space: Erosions as a reason of a project failure*. Verenych, O., Bushuieva, V., Bushuiev, D. IEEE 14th International Scientific and Technical Conference on Computer Sciences and Information Technologies, CSIT 2019 – Proceedings.
2. Bushuyev, S., Kozyr, B. & Rusan, N. (2020). *Modeling of Empathy, Emotional Intelligence and Transformational Leadership to the Project Success*. Mathematical Modelling and Simulation of Systems. Advances in Intelligent Systems and Computing Book Series. Springer AG. vol. 972, 209-222.
3. Azarov, N.Ya., Yaroshenko, F.A., & Bushuyev S.D. (2011). *Innovative mechanisms for managing development programs*. K. Summit Book, 564.
4. Krysko V.G. (2006). *Social Psychology: Lecture Course*. – 3rd ed. – M.: Omega-L, 352.
5. Todorović, M. Petrović, D., Mihić M., Obradović, V., & Bushuyev, S. (2015). Project success analysis framework: A knowledge-based approach in project management. *International Journal of Project Management*, 33 (4), 772-783.

6. Bushuyev, S., Murzabekova, A., Murzabekova, S., Khusainova, M. (2017). *Develop breakthrough competence of project managers based on entrepreneurship energy*. Proceedings of the 12th International Scientific and Technical Conference on Computer Sciences and Information Technologies, CSIT.
7. Bushuyeva, N. S. (2007). *Models and methods of proactive management of organizational development programs*, 270.
8. Obradović, V. Todorović, M., & Bushuyev, S. (2018). *Sustainability and agility in project management: contradictory or complementary*. Springer Nature Switzerland AG, 522-535.
9. Rusan, N., Bushuyev, S., & Bushuyev, D. (2017). *Emotional intelligence – the driver of the development of breakthrough competences of the project*. IEEE, International Scientific and Technical Conference on Computer Sciences and Information Technologies (CSIT), Lviv, Ukraine, 1-7.
10. *IPMA Reference Guide ICB4 in an Agile World Version 2.3*, (2018). 71.
11. *Guide to managing innovative projects and programs*, P2M, Version 1.2, (2009) 173.
12. *Individual Competence Baseline for Project, Programme & Portfolio Management*. (2015) Version 4. International Project Management Association, 415.
13. Bushuyev, S., & Verenych, O. (2018). *Organizational maturity and project: Program and portfolio success* (Book Chapter). Developing Organizational Maturity for Effective Project Management.
14. Bushuyev, S. and Verenych, O. (2018). *The Blended Mental Space: Mobility and Flexibility as Characteristics of Project/Program Success*. IEEE 13th International Scientific and Technical Conference on Computer Sciences and Information Technologies, CSIT.
15. Bushuyev, S., Bushuyev, D., Zaprivoda, A., Babayev, J., Elmas, Ç. (2020). *Emotional infection of management infrastructure projects based on the agile transformation*. CEUR Workshop Proceedings.
16. Hatfield, E., Cacioppo, J., & Rapson, R.L. (1994). *Emotional contagion*. New York: Cambridge University Press, 20.
17. John J. (2009). *Sosik. Full Range Leadership Development*. Routledge; 1 edition, 424.
18. MacGregor, J. (2004). *Burns. Transforming Leadership*. Grove Press. Reprint edition, 240.
19. Brackett, M.A., Rivers, S.E., & Salovey, P. (2011). Emotional intelligence: Implications for personal, social, academic, and workplace success / M.A. Brackett, S.E. Rivers, & P. Salovey. *Social and Personality Psychology Compass*, 5 (1), 88–103.
20. Goleman D. (2010). *Emotional intelligence at work* / Daniel Golman; lane. From English. A.P. Isaeva. M.: AST MOSCOW; Vladimir: VKT, 476.
21. Mayer, J.D., Salovey P. & Caruso, D.R. (2008). Emotional intelligence: New ability or eclectic traits. *American Psychologist*, 63 (6), 503–517.
22. Goleman D. (2013). *Emotional intelligence in business*. Mann, Ivanov and Ferber, Moscow, 356.
23. Barling, J., Weber, T., & Kelloway, E.K. (1996). Effects of transformational leadership training on attitudinal and financial outcomes: A field experiment. *Journal of Applied Psychology*, 81 (6), 827-832.
24. Sargwelladze, N.I., Prangishvili S., Sharozhiya, A.E., & Bassin, F.V. (2009). *On the Balance of Projection and Introjection in the Process of Empathic Interaction*. Unconscious: Nature, Functions, Methods of Investigation: 4 t. / By common. edit A. T.3 Tbilisi, 485-490.
25. Jakobony, M. (2011). *Reflected in people. Why do we understand each other*. United Press.
26. Decety, J., & Ickes, W. (2011). *The Social Neuroscience of Empathy (Social Neuroscience)*. MIT Press.