

The specificity of selected tools of development of social competencies among IT specialists

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Abstract

The article points to the specific nature of social functioning of IT specialists in three areas (attitudes towards: superiors, co-workers, self-development). What is also described are the specifics of the development needs of this professional group. The characterization of IT specialists is preceded by the description and classification of improvement tools that are adequate to the individual stages in the development of social competencies. The author also refers to some of the latest tools for improvement of the competencies of IT specialists. Both classic and the latest tools are analysed and evaluated. Regarding the latest tools, the author focuses on the assessment of gamification.

Paper type: review article

Keywords: IT specialists, computer scientists, IT industry, social competencies, competence development, development tools

Introduction

IT specialists are a group of employees whose functioning in the social field is specific. In addition to that, organizations from the IT industry perceive the need to develop expertise that goes beyond the professional knowledge. In order not to discourage IT specialists (whose attitude is often already reserved) from development in the area of forming relationships with internal and external customers, one should choose the activities that are appropriate for the level of the competence de-

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velopment of the employee. One should also demonstrate a critical approach to new offers on the market of development activities as the recipient of these activities (as opposed to people from the development department or human resources) is not fascinated by the very freshness of solutions and time of their creation. One can have the impression that the recipient of development activities wonders why they were isolated from their fascinating technical activities.

The aim of the study is the systematization of the classic tools for the development of social skills relevant for IT specialists and critical assessment of selected propositions for the development activities described in the literature as the latest. The criteria for division were defined based on the presence of descriptions of a given tool in the database of the *Scopus* journal. The tools described as classic are grouped according to the level of competence development of an employee for whom they are addressed.

1. Attitudes of IT specialists in the area of professional functioning

IT specialists, as a professional group, may exhibit specific characteristics in the field of social competence. This can be seen even in attitudes towards:

- employer,
- co-workers,
- own professional development.

In these three areas, there are also elements important for the development of social competence.

In terms of attitudes towards employers, we can notice low identification with the employing company and a stronger relationship with the professional environment (e.g. developers) rather than a specific organization (Rosiński, 2012, pp. 230–231). However, together with the development of highly specialized knowledge-based work, this kind of attitude is typical of other professional groups of employees (Alvesson, 2004, pp. 21–38; Rosiński, 2013, p. 178). What remains characteristic of IT specialists is their critical attitude to the employing organization. Employees of the IT sector consider organizations that employ them to be unfriendly, not developing the competence of employees and not giving enough feedback (Rosiński, 2013, pp. 181–182).

In the second of these areas – attitudes towards co-workers – it is worth paying attention to two characteristics. We are dealing with:

- openness to cooperate only with those perceived as highly competent in the field of specialist (professional) skills together with unwillingness to cooperate with other people,

- evaluating professional competence of co-workers as higher than one's own together with pessimism (increasing along with gaining work experience) about one's own professional competence (Rosiński, 2013, pp. 183–185).

The last of these ranges of employee attitudes – own professional development – is the priority direction of personal commitment. It is a highly motivating area – in a group of IT specialists it is identified with personal development. Professional development is seen in terms of achieving individual success (Rosiński, 2013, p. 185). The measure of professional success can be mainly the amount of earnings, because the so-called strong calculative motivation is an element distinguishing this professional group (Rosiński & Marcinkowski, 2010). The high position of professional development in the hierarchy of values is accompanied by the belief in the necessity of sustainable development of specialist competence. However, in the case of IT specialists development aspirations exist in a specific context: they co-exist in this occupational group with high expectations of the employing organization as to the scope of development activities. What is characteristic is the task-oriented mindset of IT specialists, which coexists together with high individualism of action, unwillingness to work in a group and the perception of others as potential competition (Rosiński, 2013, p. 186).

2. Competence development of IT specialists

IT specialists, when talking about competence development, have in mind mainly professional (specialized) competencies – and with them combine their sense of accomplishment (not only professional but also personal satisfaction with life) (Rosiński, 2013, p. 186). However, from the point of view of customer services of the IT sector, an area that needs development are not solely and mainly technical skills, but social skills. These are the communication problems related to defining customer expectations, contracting work, discussing difficulties emerging in the course of the project, means to receive feedback from the customer. There are the causes of the problems of IT specialists in cooperation with the recipients of their services. As a result, they bring a loss for both sides (Rosiński & Seppanen, 2014).

Today, cooperation with computer scientists to create the e-business world seems indispensable. Naturally, for running business very often the already existing, ready and free or relatively cheap solutions suffice. However, the search for competitive advantages or the desire to develop the company brings us back to cooperation (e.g. within the project) with IT specialists. You can, of course, boil the whole thing down to building guides like “How to talk to a computer scientist,” but the change of the market of IT services is moving in the direction where IT specialists become “technicians from magicians” and play the role of service to the cus-

tomer (Rosiński, 2013, pp. 58–63). Thus, IT companies, in an effort to cooperate with customers, should take into account the development of social skills of their employees. This applies not only to people who have direct contact with customers, but also those working “in the production of” solutions – effective cooperation in a team is also associated with social skills.

3. The need for the development of social competence

The necessity of professional development is gaining importance when, after an initial period of work, the employee reaches the expected level of operating efficiency in the organization. It appears that in this case there are two different solutions for the situation described by Senge (2008, pp. 159–169) as development within growth. The situation is illustrated in Figure 1.

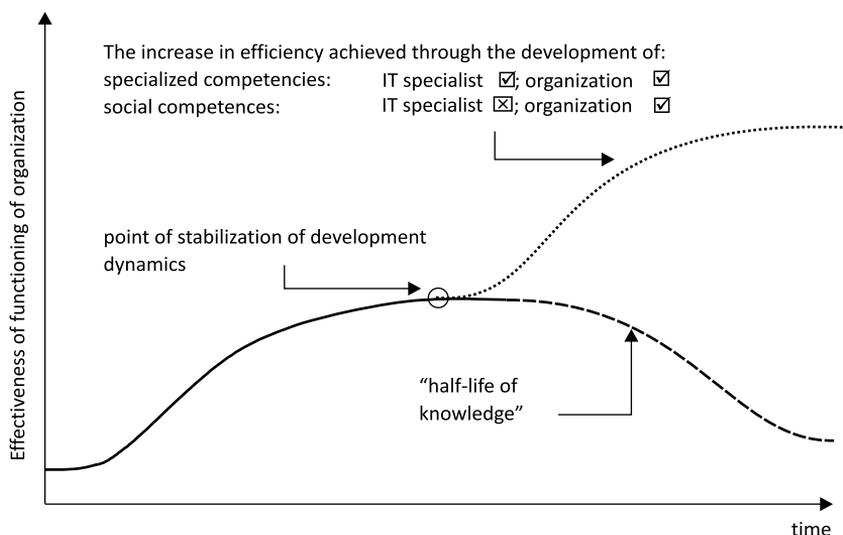


Figure 1. *Development expectations of IT specialists and the employing organization.*

Source: based on project work regarding competence development carried out in the departments of IT companies from the financial sector in years 2005–2010 and companies from the IT sector in years 2012 to 2015.

The necessity of development is recognized both by the employee and by the human resource department as demonstrated by the point of stabilization of development dynamics in Figure 1. Both sides seem to be aware of the fact that the

lack of development of competence leads to a decrease in employee efficiency due to outdated knowledge and its replacement by new knowledge (a process called “the half-life of knowledge”). In the IT industry, this process is particularly fast and causes concerns for IT specialists (Rosiński, 2013, pp. 93–95, 120–125).

Regarding this necessity, IT specialists may have a different idea than the employing organization. It is worth noting that IT specialists, when speaking of the development and growth of efficiency, have in mind mainly professional (specialized) competencies associated with the deepening of expertise (Rosiński, 2013, pp. 177, 187–189) even though the companies employing specialists also recognize the importance of developing social competencies (Rosiński & Filipkowska, 2008). Thus, it seems to be crucial to show an employee of the IT industry development benefits resulting from improving social skills and professional competence rather than expecting only the development of specialized competencies.

The value of this type of combination of development paths is shown by the effects of projects implemented by the author of the article in companies from the financial sector carried out in 2005–2009 and covering, respectively, 200 and 300 specialists. The selected aspects of these projects are described in a separate article (Rosiński & Filipkowska, 2009). The positive development effects also occurred in IT companies (employing programmers, testers and network security specialists) – project work carried out in 2012–2015 with a total group of 90 persons (groups in projects consisted of, respectively, 46, 16 and 28 persons). Despite discovering, during the project evaluation, positive changes regarding the assessment of effectiveness of trainings consistent with the typology of Kirkpatrick (1998), that is: reaction of responders (of surveys); changes in the level of knowledge and declared attitudes (post-training tests), observed changes in behaviour (interviews with supervisors, internal customer satisfaction survey conducted before and after training), efficiency in project implementation and hence greater profitability (interviews with management companies and/or managing directors), the results of projects from years 2012–2015 have not been published due to the lack of consent of the organization awarding projects.

4. Tools of development of social competence

However, the same observation of the employee and the organization regarding the development of social competence in the IT industry does not solve the problem. The development of people with rare knowledge or skills creates another dilemma concerning the overall strategy of improving employees. The organization may care about:

- diagnosis of competencies and developing the strengths of employees (in other words, the pursuit of organizational excellence),

- identifying and offsetting the weaknesses of employees (i.e. reducing skills gaps).

Efforts are also made to integrate the two extreme solutions. Such solutions are usually associated with the creation of individual development plans, based at the same time on the following:

- tasks performed by the employee (now and in the long term up to two years),
- any development gaps likely to affect the performance of tasks.

We then stop seeking only the biggest differences (comparing the expectations of the organization concerning the result obtained by the employee) appearing on the radar charts to build an individualized development plan for each specialist separately – with emphasis on the task-related context valued by the group so much (Rosiński & Filipkowska, 2007).

However, even in the approaches that integrate extreme solutions (eliminating gaps, increasing strengths) one should take into account the specific level of employee competence development and optimal tasks associated with each situation. The proposition is included in Table 1. It is not a list specific only of IT companies but it also seems to be accurate for this industry.

The tools included in Table 1 can be described as classic. Although organizations cannot use them all, the individual tools have a rich literature and are part of typical solutions in the area of HRM (Armstrong, 2004, pp. 476–480).

Based on data from Table 1 it is difficult to talk about specific tools as tools that are always developmentally beneficial. They are a valuable proposition, depending on the level of employee competence development.

Thus, in evaluating various development tools one should also refer to the various levels of competence development.

Given the situation when the level of employee competence is considered to be lower than expected, we have development tools, such as, job training, certification, training/courses, becoming familiar with the documentation and professional literature. It seems that if these tools are approved in the area of specialized competence (together with recognition of their slight development), then in relation to social competences we can meet with reluctance of IT specialists recognizing the primacy of improving technical skills. The increase of usefulness of these tools for this group of computer scientists can be assigned to the immediate supervisors who, using the so-called model and expert authority (Raven & Kruglanski, 1975, pp. 177–219, as cited in Hersey, Blanchard, & Johnson, 2013, pp. 140–158), can show the employee the importance of developing social skills and the value of trainings relating to this area.

Table 1 Selection of development tools in accordance with the level of employee competence development

Level of compliance with competence requirements	Possible actions	Proposed development activities
Level of employee competence is below the requirements of the position	<ul style="list-style-type: none"> • Development of management plans focused on supplementing competence gaps • Providing feedback on the progress in the implementation of development plans 	<ul style="list-style-type: none"> • Job training • Training/courses • Updating knowledge (necessity to read documentation/literature)
Level of employee competence complies with the requirements of the position	<ul style="list-style-type: none"> • Increasing self-reliance in the area of tasks performed • Identification of the “areas of proximal development” 	<ul style="list-style-type: none"> • Specialized training • Individual consultations (focused on single topics) • Coaching • Interdepartmental studies
The level of competences of an employee exceeds the requirements of the position	<ul style="list-style-type: none"> • Delegation of tasks requiring a higher level of competence, greater accountability • Searching for tasks breaking routine and posing challenges • Searching for tasks allowing to organize knowledge and its generalization through, for example, sharing knowledge with others • Search for jobs that break professional burnout • Search for new applications of the existing knowledge 	<ul style="list-style-type: none"> • Working in a project team (as an expert – a team member) in the long term entrusting project management • Inviting employees to participate in decision-making bodies (as an organizational expert in a given case) • Entrusting workers with lower levels of competence (after preparation for this function) with the function of the mentor/coach/trainer • Specialist conferences/meetings of practitioners • Internships • Study visits

Source: based on Rosiński & Filipkowska, 2007, p. 418.

When the level of employee competence is in compliance with the requirements of the position, we can talk about specialized training, internships, individual consultations and coaching as development tools. It appears that two of the primary tools work well in relation to specialist competences. Individual consultations can become a good tool for both of the described types of competencies. In contrast, coaching will be applied mainly in relation to social skills. It is considered a particularly useful tool for improving the skills of open communication and teamwork orientation (McLean, Yang, Kuo, Tolbert, & Larkin, 2005, pp. 157–178). Even if in organizations the use coaching is many times lower than the training methods (Sienkiewicz, Trawińska-Konador, & Podwójcic, 2013, p. 109), it is considered a new method (Wodecka-Hyjek, Ziębicki, & Jabłoński, 2011, p. 52). What

is also raised are the many aspects that require monitoring for the effectiveness of these development methods (Wodecka-Hyjek et al., 2011, pp. 53–54).

Together with the limitations of coaching, connected with the very person who conducts development activities and time-consuming nature of the method, it may turn out that this is a good solution for people, who fulfilling the organization's expectations as to the competence of expertise and communication, become the leaders of IT projects. In such situations, support, for example, through coaching can be helpful and protect from typical mistakes made by beginner managers (Hersey et al., 2013, pp. 199–212).

When the level of competence of an employee exceeds the requirements of the position, the following factors arise as development tools of social competence: working in a project team, participation in decision-making bodies, delegation of the mentor/coach/trainer function to workers with lower levels of competence. Adequate to the level of development competencies such as professional conferences, meetings of practitioners, internships, study visits seem to be mainly directed at specialist competencies even though in the case of these events there can be the transfer of social skills in accordance with the principle of modelling – following the behaviour of people from the environment (Aronson, Wilson, & Akert, 1997, pp. 468–472). On the other hand, what seems to be directly related to the development of social competence at this stage is working in a project team and developing the competence of other people (as a coach, mentor, coach). Both by working with the team in the project and expanding the authority of others we not only learn new social behaviour, but also use existing patterns of actions in the new situational context. Sensitivity to the new context of behaviour increases our flexibility and improves effectiveness in relations connected with performance of tasks (Hersey et al., 2013, pp. 95–96, 100–112).

Regardless of the degree of competence development of the employee (Table 1), it is worth noting that such popular courses are the preferred tool for development of competence only in the early stages of work of the employee.

5. Selected latest social competence development tools

Besides the tools defined as classical (Table 1) we are dealing also with tools that can be referred to as the most updated that is with a relatively short period of use on the market and, hence, incomparably less known in the literature.

One of such tools is the tool known as gamification. Gamification is most often described as: the use of game mechanics in activities other than games in order to change behaviours (Lee & Hammer, 2011, as cited in Rajpold, 2015, p. 25). Although gamification is defined as an innovative tool, the tool is not new. The origins of the use of games and simulation as an educational tool supporting educa-

tion in the field of management dates back to the 1950s of the twentieth century. You can even find their use as a tool for development of skills in ancient times (Konieczny, 2014, p. 63). On the basis of the review of 29 articles in years 2011–2014, it can be concluded that there is a belief about the usefulness of gamification as a tool for competence development, especially when it comes to programmers (Pedreira, García, Brisaboa, & Piattini, 2015). However, analysis of each publication indicates that the impact of gamification on employee development is not clearly proven (see e.g. Konieczny, 2014). They are currently working on describing the impact of gaming on learning and comparing learning through games with classic educational tools (Kim & Lee, 2015). Certainly there is a strong hedonistic motivation among gamers as a development tool, which can – but need not – encourage the transfer of skills to the real world (Hamari & Koivisto, 2015), and use other classical forms of competence development (Kuo & Chuang, 2016). As shown by subsequent studies (Hamari, Shernoff, Rowe, Coller, Asbell-Clarke, & Edwards, 2016), the enjoyment of the game and immersion do not translate into learning. It turns out, however, that a good predictor for the transfer of competences of the game from the world outside of the game is the recognition by the player of the game for the challenge it poses. Thus, the game constituting a challenge for users allows for the expected learning outcomes through the use of gamification.

Another issue is presenting gamification as an independent and innovative tool – according to the most widely cited definition, gamification is a classic element of training known for many years as games and simulations and belongs to the activating methods (Łaguna, 2004, pp. 164–170).

The analysis of nine major elements characterizing training games (Frapp, 1993, pp. 30–32; Łaguna, 2004, p. 165) can also lead to the conclusion that in describing the game used during training and gamification we describe the same tool. Additionally, the game itself does not need to develop competence. People describing the methodology of training games have pointed out that what is very important is the stage of “leaving the game” and the awareness of emotions from the game and reflection on the events during the simulation as well as transfer of experience to the realities of professional participants. Without these elements, the game can become only the challenging situation to relieve emotions. As Kruszewski (2002, p. 195) notes, strong dramaturgy of the game can trigger simulation conflicts and tensions in the world “beyond the game.” It seems, therefore, that gamification defined as an independent and innovative method does not meet both conditions. Finally, you can come to the conclusion that the creation of a separate term relating to games and simulations is in the area of competence development within the organization a kind of promotional activity. It is such an effective procedure that new websites offering the opportunity to play as a development tool are created every day (Hamari & Koivisto, 2015).

In addition to the now widely discussed gamification, e-learning as a tool for development has also been very promising. It seemed that this solution is ideal for

IT companies using the environment to which employees are accustomed. However, research interest in this solution decreases: in 2012–2014 in the Scopus database one could find every year more than 260 new articles involving e-learning with the development of competencies, in 2015 it was less than half of these texts (144). Despite the development of e-learning projects, we are dealing with two limitations of this tool in relation to social skills. Knowledge about the desired behaviour (cognitive component attitudes) does not automatically mean presenting behaviour, which we know is beneficial (Hersey et al., 2013, pp. 96–98; Aronson et al., 1997, pp. 309–353). You can also assume that if e-learning works well in highly structured content (e.g. the organization of internal procedures, knowledge of the legislation) then to achieve positive changes in attitudes can be difficult for describing social behaviour.

Conclusions

Development tools used to improve social competence, due to the versatility of the skills for functioning in groups or relationships with colleagues, go beyond a single industry. Thus, it is difficult to name development activities only intended for IT employees.

One should pay attention to the critical assessment of gamification often regarded as simply a tool designed for IT professionals. The final review of gamification may indicate that what is developmentally beneficial for IT scientists is the leger artis use of classic tools for the development of social competence rather than testing new products at the audience which is critical to any solution that goes beyond the development of specialist competencies.

The mentioned performance of actions according to all the rules of art means, in the case of IT specialists, adapting the tools to the specific functioning of the career of this professional group. Due to the universal character of social competence, this adjustment to needs can mean, for example, in the area of training, development of games or case studies “from the life of an IT specialist” or a modification of the order of exercises that do not lead to competition with a group of IT workers. These modifications, however, do not result in substantive changes in the structure and objectives of the training itself.

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