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Human Resources Assignment in R & D Departments from Automotive Industry

Marius Gal
Lucian Blaga University of Sibiu, Romania
marius_gal@yahoo.com

Claudiu V. Kifor
Lucian Blaga University of Sibiu, Romania
claudiu.kifor@ulbsibiu.ro

Abstract

The objective of this paper is to analyse how the expertise of the employees is used inside the companies in automotive software industry, to present the ideal case of expertise growth and to propose a model that motivates the employees to share their knowledge. The proposed model for increasing the expertise during order execution has a simple structure and is to be implemented straightforwardly. The most performing employees from an area of expertise will become mentors, and those who will be mentored will be the employees who are showing that they can handle their tasks with ease and high quality. In addition, two models can be found in this paper: the model for training evaluation and the development path for every level of expertise in the team.

Keywords: Resources management, automotive, software, employee expertise, training.

INTRODUCTION

For many companies the employees' payroll is their biggest cost, and, in order to remain competitive on the market, they must be practical when investing and helping the employees to reach their best performances. Henceforth, it is vital to concentrate on continuously improvement of the employee productivity and help the employees to evolve in their career. Management should have the objective of enlightening self-esteem and productivity by endeavouring for reliability and stability. The employee productivity is decreasing when the management is not stable with its plans and directions. It can be observed that the top management can change and encourage the employees to achieve their best results (Lack, 2013).

Human resource management is a central asset in growing the productivity and employee performance by using efficiently the most treasured asset a company has, its employees. It is easier for the management to motivate and retain the personnel if they are happy and satisfied at their work place

(Ngwenya, Aigbavboa, 2017). It is a personal satisfaction if every team member feels that, with his/her knowledge they contributed to the final project and their ideas improved the project.

Knowledge is the most important factor in economic growth and a key source for companies for maintaining competitive advantage. Knowledge sharing has developed to one of the main strategic resources for enterprises (Shu-Xia Li and Deng-Feng Li, 2017).

If the employees feel motivated to give their best, the company will have better results. In order to achieve this, a development plan must be available for every team.

A survey from 2007, completed by over 90,000 employees from 18 countries, shows that only 21% reported to be fully involved on the job, 30% wrote that they are dissatisfied, and almost 10% considers that they are totally disengaged. A more recent study, on the same issue, indicated that the numbers haven't changed significantly over the time, only 13% of the correspondents considered themselves involved in their job (Hillard, 2019). If only 21% feel that are fully involved at the job, then the rest, who are not fully engaged in their work, are not working at their maximum level, their ideas for improving together with their expertise are not presented. Thus, by increasing the level of engagement, the company and the employees will benefit from it.

The company will deliver higher quality products to the clients and the employees feel that their work is appreciated and valuable. This is why it is imperative to engage all the employees and to help them to increase their expertise level.

The performance evaluation arrangement is a central part of the managing the human resources structure. Performance appraisals have a key role in motivating the employees, in expertise and social development and promotes a confident and productive relationship among management and their staff. By evaluating the performance of each employee and the quality of his/her work, the management can help the teams in developing the skills in a more efficient manner.

Efficient management cannot exist without performance ratings. The evaluation can also help each employee to develop furthermore. In very small companies the evaluation of performance of each employee is informal and constant because the entrepreneurs are also the managers and they control all the activities. In the literature are presented a lot of frameworks for employee evaluation of performance, but the results must be used for further development of the employee (Lefter et al., 2019).

Every company must help the employee to develop his/her expertise, step by step, with proper mentoring and with orders that have a challenging complexity for the employee.

Companies which do not progress and are not implementing human resources development, frequently have difficulties with the personnel by not getting specialized development through training, mentoring or coaching and the employees are starting to experience lack of challenges or boredom at their work place (Ngwenya, Aigbavboa, 2017).

Elnaga and Imran categorized performance into five features:

1. Planning: the objectives are set, the strategies for reaching the objective are clear and the due dates are established.

2. Monitoring: the employees are verified for the quality of their work and if the development is ongoing. The feedback is given to the employees, so they know the state of their progress. At this stage, the objectives can be modified if they are confirmed to be improbable.

3. The developing stage: is serving the employees in improving any low performance activity.

4. Rating: provides a summary over the performance of the employee, and based on this the company can compare its employees.

5. Rewarding: the employees are informed about their highest performance and they are rewarded according to it (Ngwenya, Aigbavboa, 2017).

PROBLEM STATEMENT

The efficient human resources allocation is a problem which affects most of the companies from automotive industry and not only from this industry.

The concern that will be discussed in this paper, in the area of resources assignation, is the situation when an expert is assigned an order that is below his capacity. For example, a very good software developer must do the same thing for more modules, instead of teaching a junior software developer about his orders and methods, so the unexperienced employee can replicate what he has learned.

The employee should learn and teach continuously. When a monotonous work is planned, the employee should share the knowledge in that specific order, and the repetitive order can be assigned to the employees with less experience in that project. They gain experience, and the employee who has already knowledge can handle more complex orders.

This situation can be imagined as a person that buys a very capable laptop but it is used only for browsing on the internet, even though the laptop is capable of computing high end graphics or complex algorithms. This can be summarized in the following circumstances:

- The company hires experts, even though they do not represent a necessity, with big salaries exclusively for repetitive or simple tasks.

- The company has experts but they are used for repetitive and simple orders even if the company needs them for complex orders.

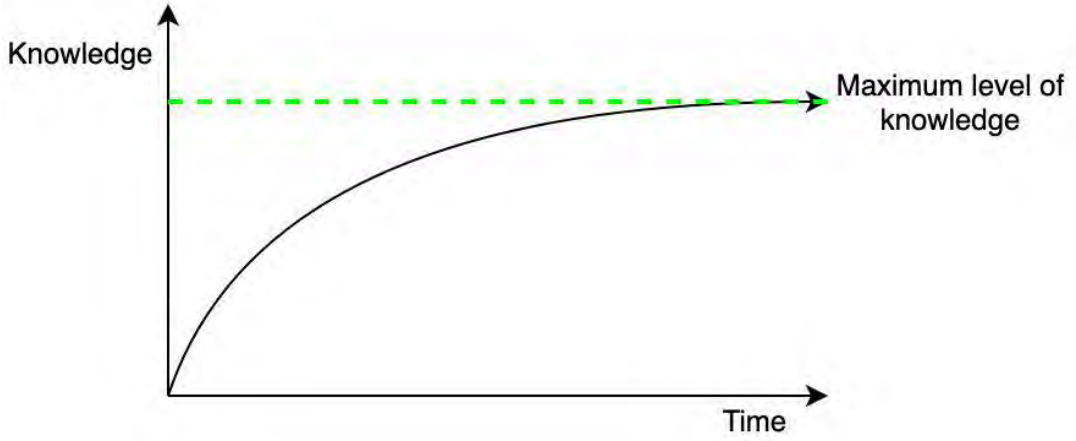
The best case scenario is when experts are necessary in the company and they are used at their full potential.

NORMAL AND IDEAL INCREASES IN EXPERTISE

Every employee has his/her own limits in solving assignments when discussing about their complexity. If the new employee is a junior, or a person with low experience in that field, both the company's and the employee's objective should be the same: the employee should achieve its maximum level of development in a project as soon as possible. In order to help the employee to improve his/her level of expertise, the complexity of the orders should be at least equal or higher than the employee's actual level of expertise, so he or she can learn and achieve more experience and expertise.

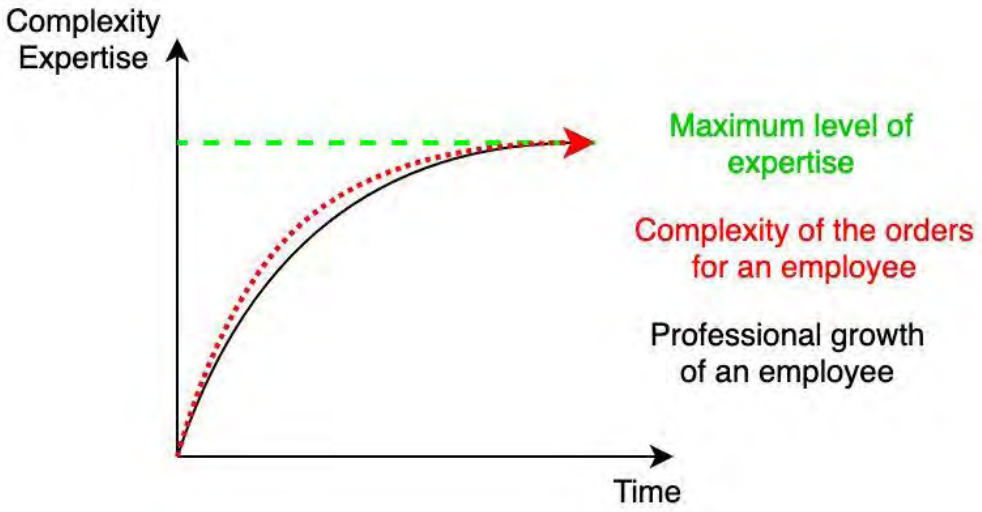
The level of knowledge of an employee is increasing until he becomes an expert in his field of work, as it can be seen in the next figure:

Picture 1: The normal increase in expertise



It can be observed that the level of knowledge increases in time, and the companies should help and benefit at maximum from the development of each employee. The growth of the expertise is somehow logarithmic. At the beginning, when the employee is hired in the company, his/her level of knowledge about solving the usual tasks is low, but with proper training and mentoring, the expertise can be increased. Based on picture 1, the picture 2 illustrates how the complexity of the orders should be increased:

Picture 2: The ideal order allocation for an employee



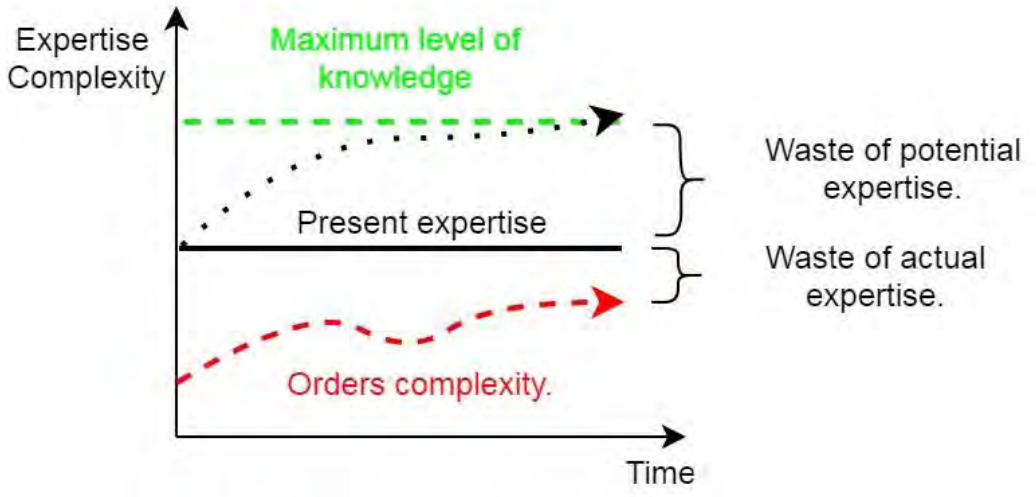
This figure should represent the objective that each company from software automotive industry has with its employees, so the knowledge is always improved. In order to support each employee to fulfil his/her best level of expertise, the orders assigned to him/her should have a slightly higher complexity than his/her expertise at that moment.

WASTE OF KNOWLEDGE POSSIBILITIES

The increase of expertise for the employees is necessary for the companies to have quality products and to create innovative ones. It is not an easy challenge to help every employee to reach his/her maximum level, but the results will pay off. Of course the easiest thing is not giving the proper help to the employee for achieving his/her maximum level, so these situations are shown in the following figures. The objective is to avoid these kind of situations, but first we must know what to avoid.

Most common situations are the following:

Picture 3: Waste of employee's high expertise



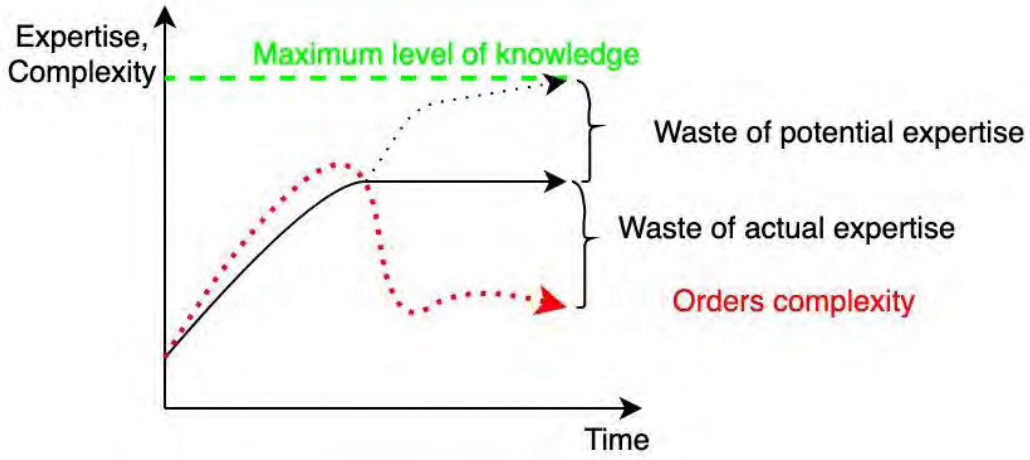
From the picture number 3, it can be observed that if an employee has relevant experience and expertise, but it is not used at its full potential, the company wastes resources. It can be observed that the level of complexity of a task is slightly increased in time, but there is still room for improvement and using the employee's capability. There are two types of waste:

1. Waste of actual expertise: this waste refers to waste expertise of the employee on lower complexity orders than his/her actual level of expertise.

2. Waste of potential expertise: the company is losing the level of possible expertise of an employee who could work on more complex orders. The cause for this is the limited level of the orders complexity the employee receives. If this figure is compared with the ideal growth of the employee, the complexity of the orders should be at least equal with the capability and the level of expertise the employee has.

A different situation that can be observed in the automotive industry, is that the company starts very well to help the employee in developing its skills, but that help does not have the same consistency in time. This situation is illustrated in the next picture:

Picture 4: Maximum level of knowledge not reached

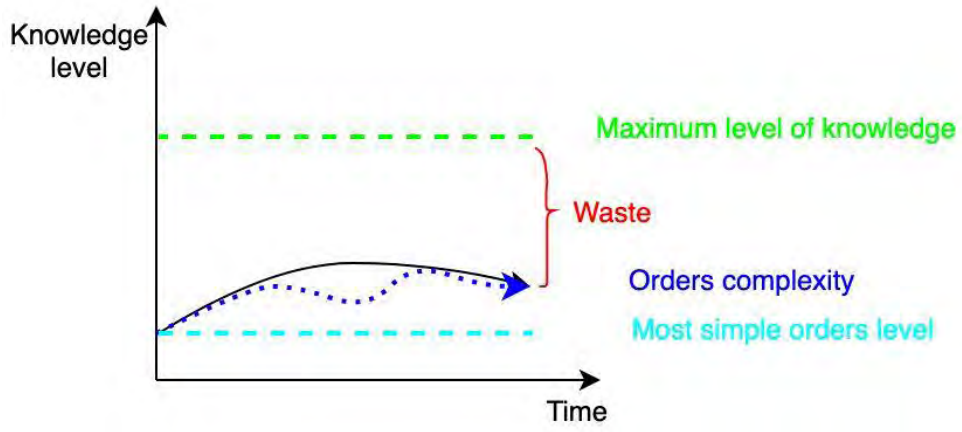


The employee comes with some experience and knowledge in the team, and the company is aware. It can be observed that the employee has enough support to increase its expertise, the company invests time and money in the employee's development, but starting with a point in time, the level of complexity of the orders is below the level of his/her expertise. The figure shows that even though the employee has a good potential of growing his/her knowledge, the support for this is no longer fit. This point in time can be triggered by a management change, a team's reconfiguration, a change of the projects or the technology that it is used or other situations that can appear in a company from software automotive sector. Here the company should start to ask questions like:

Why is the employee at the same level of expertise? Is our support according to the employee's development or should it be adjusted? How can the development process be adjusted? Are there other tasks that could be solved by this employee?

In the next picture, we can observe that the company sets the maximum level of knowledge for the member because the complexity of the orders remain the same, instead of increasing.

Picture 5: The worst case scenario for an employee who starts his/her career



In this situation it is discussed the case when the employee is a student who just finished his/her studies and he starts to work on the orders. Since he has no previous experience, the company must challenge the young employee to evolve and learn as much as possible. If the order complexity is not challenging

him/her, there is the risk that the full potential is never reached and this is another case of wasted resources. It can be considered that, as long as the full potential of the employee is not achieved, the employee is not giving 100% of what he can deliver and the loss is accountable on two sides: the company and the member of staff.

A Research and Development department centre from automotive industry is composed by teams that work on certain projects. In a team the following types of employees can be found, based on their knowledge and experience:

1. New entries: the workers who have under six months and can solve low complexity orders, those which are usually repetitive in the way that certain steps must be followed in order to have the work complete.

2. Medium personnel: the employees who can resolve independently low and medium complexity orders.

3. Experts: in this category we can find workers who can solve high complexity tasks and also innovative orders.

These three categories are the easiest to use when the order assignation process takes place.

An innovative order refers to the orders which are not common, that do not have a certain pattern to follow to solve the requirements from the customer, and the order is not present in any method of work in the company.

PROPOSED MODEL FOR RESOURCES ASSIGNMENT

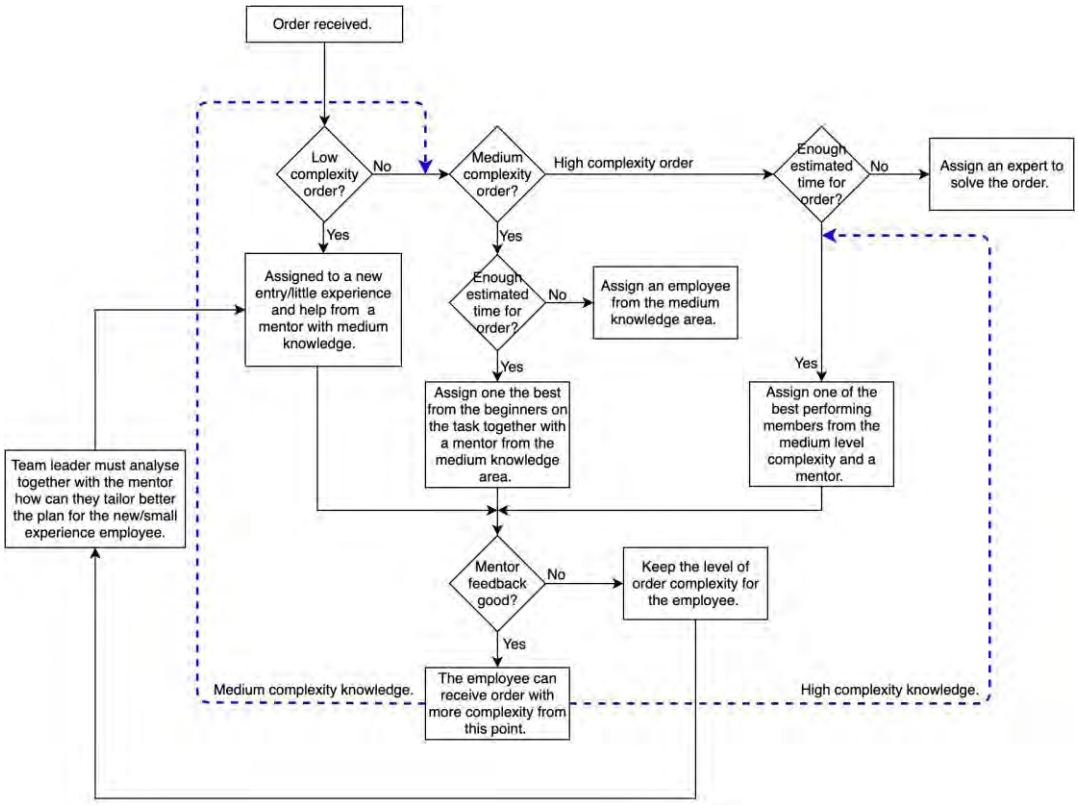
In order to avoid the described situations, the next model is proposed. When discussing about human resources assignment, it must be kept in mind the efficiency and effectiveness, and how the company will benefit from the full capability of every team member. If an order with low complexity is given by the customer, the new team members should start to work on it with the close supervision of an employee from the medium level. The reason for that is, that in this way, the employees can increase their knowledge level, when they are working on projects and they are making all the steps that are necessary to finalize the order. And the knowledge is consolidated when applied, helping them to have an overview and preparing for their future assignment as a potential trainee.

The medium level was chosen and not the expert level, because it is not necessary to have a mentor from the expert area, since the medium area employees can likewise help the new entries. This is moreover a measure of efficient order allocation.

The experts should be responsible for higher level complexity or innovative orders from the customer. In this way the resource usage is used at its full potential and the useful expertise is not wasted on orders which are not complex.

For the discussed points, we are proposing the following process:

Picture 6: The proposed model for increasing the expertise during order execution



If the process is applied it can help the company to have the ideal line of employee development, without waste.

It can happen, that one employee spends at the same level a long period of time. The length of this period of time cannot be fixed, it depends on each company, project complexity and industry.

The steps of the process are explained next:

- If the complexity of the order is low, that order will be assigned to the new employee or the employee with the limited experience organized with a mentor with medium knowledge.

    i. Based on the feedback from the mentor the employee can or cannot receive orders which are more complex. If the mentor's feedback is good, based on the current level of expertise, the employee can go to the next level. If the employee has a beginner knowledge, he can start to take over orders with higher complexity specific to the medium knowledge area. As well, if the employee has very good results in the area of orders with medium complexity, the team leader will start assigning orders from the area of high complexity, and if he encounters any problems a proper mentor will be available for him to overcome them. An advantage of assigning a mentor from a superior level of expertise, who works on the project, is that the time he needs to explain the requirements is decreased and he can work on its own orders.

ii. If the feedback from the mentor is not good, the team leader, based on the inputs, must decide how and which orders should be allocated to the employee, so he can increase its expertise. First the employee must prove that he can handle very well the specific orders according to its level, and afterwards, he can strive to go to the next level.

- If the complexity of the order is medium, but the time is short, an employee who can solve this type of orders will be assigned.

    i. If there is allocated enough time for the order, the employee with the best results in low complexity orders will get the assignment. Also, if he has any problems or questions, an employee that knows how to handle this type of orders, will assist.

- If the complexity of the order is high, and there is a strict and close deadline for it, an employee from the corresponding area will be assigned.

    i. If the time is sufficient for the order, an employee from the medium complexity area will have the order with high complexity and if needed, he will receive help from a colleague with high expertise.

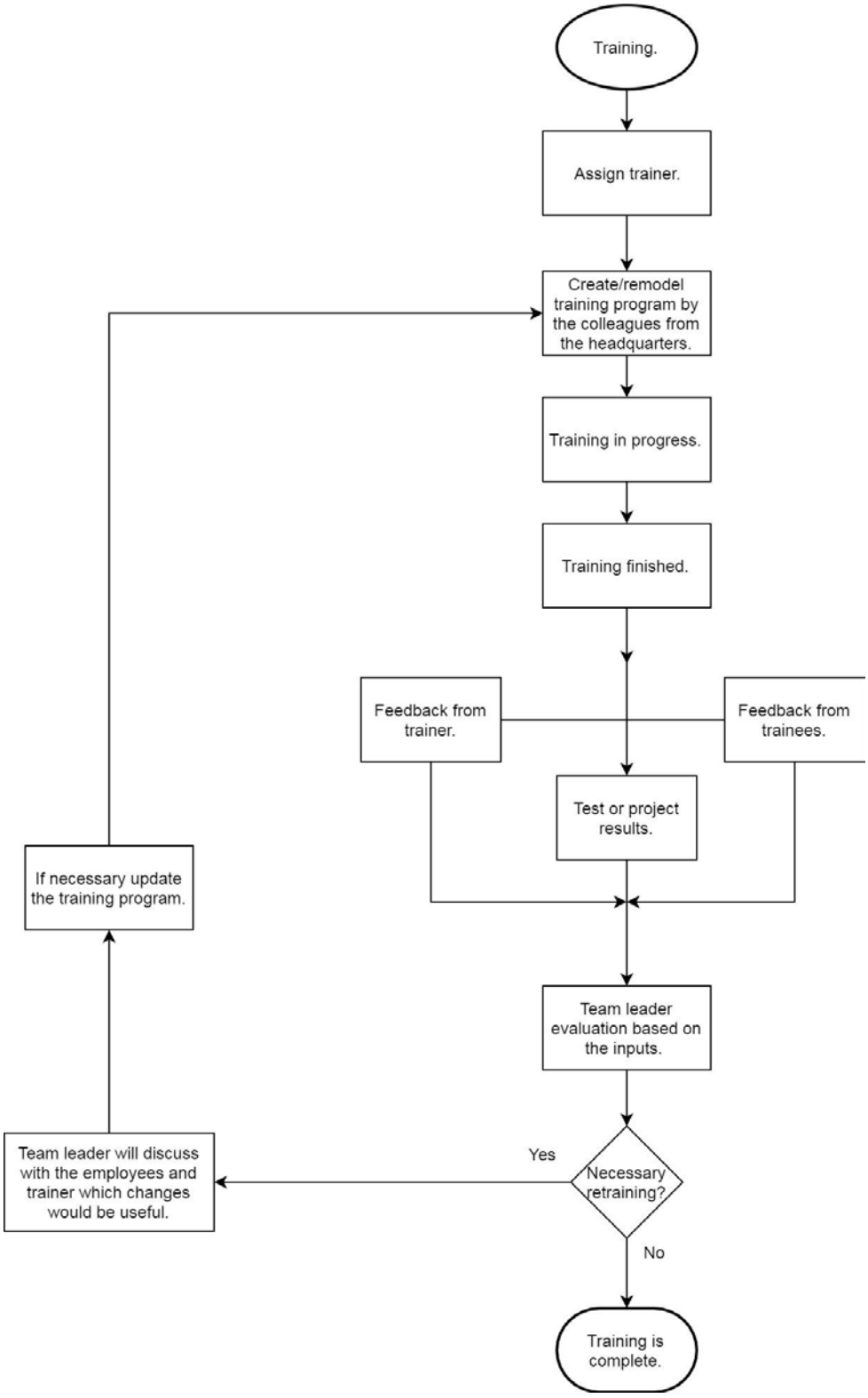
Every company offers trainings to the employees, trainings that have an important cost, since they are usually not covered by the project and the company must pay for its employees to learn. Because of these reasons, the trainings must be verified over the time, together with the trainer, if they still serve the scope for which the training was originally designed.

There can be trainings which are long, both for the trainer and for the trainees, but the results are not helping the trainee. In these trainings that are kept either regularly, or only when necessary, but no matter their occurrence and duration, the quality must remain high.

There are situations when, even if the trainings are considered of high quality, the employee does not benefit at 100%. These types of situations can have advantages and disadvantages. The advantage is that if the underperforming training is identified, then it can be updated so that its performance can increase. The most unwanted situation is when the underperforming trainings are not rapidly identified, and it takes a lot of time in identifying it. This causes time loss for the employee and resources loss for the company. A measure that can help the company to quantify the efficiency of the training is by asking the participants to give anonymous feedback which will be analysed by the team leader.

If the employee stays at the same level for a long period of time, a level that is considered under medium level, the company should react based on the following model:

Figure 7: The proposed model for training evaluation



The training development program consist in the following steps:

- If the decision is to move a project or parts of the project in a new location, a training program must be made. This will be completely personalized based on the specific requirements of the project. This must be made before the new team is formed. After the training plan is complete,

the trainer must be assigned to hold the trainings. Likewise, a test or a project should be the result of the training, so knowledge accumulated can be confirmed after the training is finished. The level of the test or project must reflect the desired level of knowledge the employees must have after the training is finished.

- As soon as a new employee is hired or a new team is formed in a recent branch, a specific exercise must take place in order to teach the basics of the project for the team.

- While the training is in progress, the trainer must write down the observations of the trainees, about how they react during the classes, if they are asking questions, if they are willing to understand the information and other points that can be useful for feedback.

- If necessary, according to the three inputs of the training, feedback from trainer, test or project results and feedback from trainees, a new or modified training program will be established with the team leader.

- The update must be made with the clear objective of achieving the target.

- After the preparation is done, a test is given and the trainer and the new employee are giving their personal feedback. If one of these three outputs are not satisfactory the company's standards, a decision must be taken by the team leader. The next step, based on the inputs can be one of the following, but not limited to:

- Repeating the training, retraining with another trainer, reinstruction with another way of teaching based on the desire and necessity of the new employee. It must be kept in mind that the expected result is to help the new employee to perform tasks as soon as possible and with high complexity as possible.

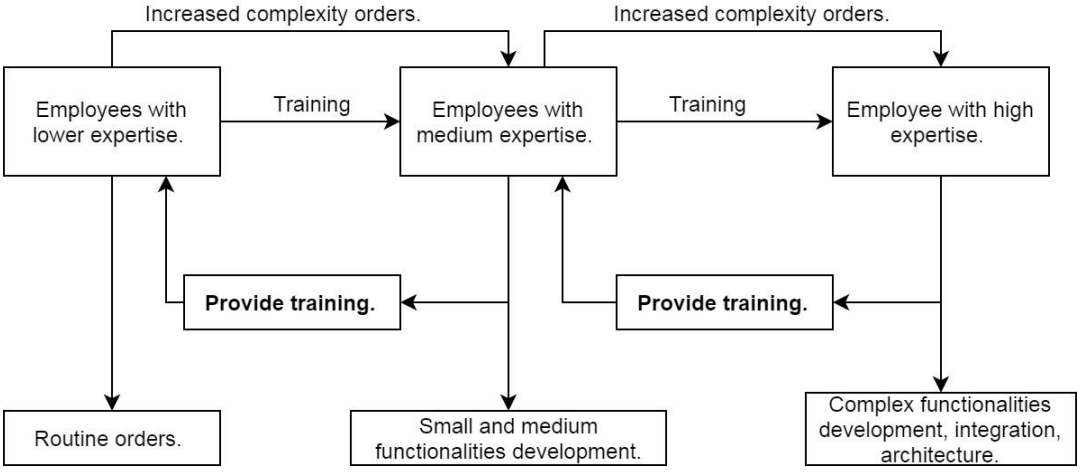
- Otherwise, if all the three outputs from the training are good, the employee has a higher level of expertise, which is shown in the quality of the order's execution. If the orders are not completed with the expected level of quality, this situation must be discussed again and a decision has to be made. Maybe the employee needs more time to accommodate with the orders, or he/she needs to take the training again.

If the orders are completed with the expected level of quality, then the employee can go further with the expertise development until he becomes an expert.

A new idea that is present in the figure 7 is that the employee can become a trainer even if he/she is not an expert, so he/she can help the colleagues who have a high level of expertise to concentrate on the proper orders, the ones with high complexity and close deadline, by becoming a trainer on certain tools or programs and help the new employees to be integrated in the team and gain expertise.

In the next picture the training development program is proposed:

Picture 8: The development path for every level of expertise in the team



Picture 8 shows the development path for the employees regarding expertise. In time, the complexity of the orders assigned to an employee will increase, facilitating the worker to achieve more expertise and experience. The company will have trainers at every level of expertise. The trainees will be from medium and high expertise area, so when new colleagues are joining the team, a trainer from the medium knowledge area will provide training, but when a colleague from the medium expertise area needs a training, a member of high expertise will provide the training. All the trainees are not full time trainees, they are also working on tasks when the trainings are not ongoing. If this model is applied, the support for the team members will be visible and they will be able to reach their maximum potential.

CONCLUSIONS

Resources allocation is a very significant strategy for every company which can boost the company's results. The best strategy is to let the most skilled employees do the most complicated orders, and in the meantime the others from the team can benefit from their experience. It is a waste of resources if the employee does not reach his/her full potential of expertise, both for the employee and for the company. It is a good strategy to keep the best employees in the company, if they are engaged completely in their tasks.

The proposed model encourages development of every team member by recognizing his/her achievements, and if they are at least good, the employee will be given orders with higher complexity. This is a good tool for development, and every employee can become an expert or a mentor if he wants to. An important assistance in the development of the employee is the assigned mentor, if necessary, so the employee is not alone when dealing with the higher difficulty orders.

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