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«Розширення повноважень співробітників в компанії, що розвивається»

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## INTRODUCTION

For the last 20 years IT outsourcing industry has been actively developing in Ukraine. In 2018 export of IT services reached USD 4.5 billion, gaining the place of the second largest export industry in the country. Being one of the most prominent and high potential industries in Ukraine, emerging IT business is still facing a lot of challenges. High competition known as “war for talents” is a great problem for the majority of companies. However, it is even more challenging and sometimes destroying for a start-up or a small growing company that depends on high-qualified personnel equally as on their customers.

High competition among IT outsourcing companies causes high turnover rate, that has significantly negative impact on business. Large IT solution providers refer to 23% of turnover rate which is 2.5-3 times higher in emerging companies. High turnover rates put businesses at high risk - as it creates additional expenses and can destabilize the business.

In practice this is solved mainly by improving process management, setting up compensation and benefits strategy, setting up career development plans and introducing employee empowerment practices. While process management is more needed for companies in “infancy” and “go-go” stages as per Adizes, compensation and benefits is more relevant for “stable” companies with higher budgets and yields, introducing employee empowerment practices help increase job satisfaction and decrease turnover rate in the growing IT outsourcing company that passed “go-go” stage but haven’t yet reached a “stable” point which effectively resolves the problem of employees willingness to quit the job.

The Objective of this research is to decrease voluntary turnover rate while increasing employee empowerment mediated by job satisfaction in the company. The research object is employees lifecycle in the company.

The research subject is increase of employee empowerment that consequently decrease turnover rate mediated by job satisfaction.

The Objective is expected to be achieved with a help of Employee empowerment based approach that will reduce voluntary turnover rate.

Research is based on the following findings:

- Analysis of turnover rate in the company
- Analysis of factors that have impact on turnover rate
- Analysis of turnover rate in Ukrainian IT outsourcing industry
- Analysis of existing methods of decreasing turnover rate in outsourcing companies in the phase of active growth
- Development of Employee Empowerment approach that decreases turnover rate
- Launching the EE approach in the company
- Analysis of the EE approach effectiveness

## **CHAPTER 1. Analysis of employee empowerment and its connection to turnover rate**

Employee empowerment has been known as a psychological state and a management tool. It may create a definite state of mind when employee can do his or her task, experiencing intrinsic motivation. According to Spreitzer [28], employee empowerment can be viewed in four dimensions of motivational construct, i.e. meaning, competence, self-determination and impact.

However, from the managerial viewpoint, employee empowerment is a great management tool that unites certain practices and behaviour with focus on providing feedback and share information, recognizing employees, sharing responsibilities with employees. According to Arnold [2], employee empowerment is a leadership style that foster meaningfulness at work, involves employees in decision making, gives autonomy from bureaucracy.

Bowen and Lawler [4] offer employee empowerment approach where managers share service delivery responsibilities with employees. These responsibilities include 1. sharing information about the company's performance; 2. providing organization performance based rewards; knowledge-sharing practices that help employees realize how they can contribute to company's performance; 4. employees decision making that has impact on organizational performance.

Employee empowerment as managerial approach and cognitive state of mind is connected to turnover rate by means of job satisfaction. In other words, launching employee empowerment approach is expected to increase the level of employees job satisfaction what consequently decrease voluntary turnover rate.

### **1.1 Turnover in outsourcing IT companies in Ukraine**

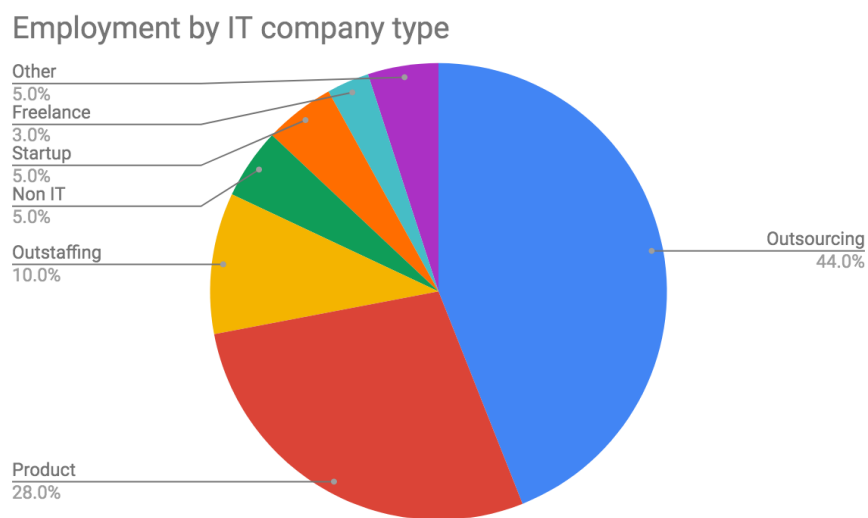
Ukraine is one of the world leaders in IT outsourcing - according to an International Association of outsourcing Professionals IAOP 17% of The Global Outsourcing 100 rating in 2019 comprises of Ukrainian outsourcing companies and this amount is constantly growing over the last decade [16]. Simply put - globalization

allowed foreign companies with highly developed economies access a market of talented and highly educated engineers, software architects and quality assurance specialists in Ukraine and hire them for 3x-4x lower rates in average comparing to US/EU.

In these conditions Ukraine is competing Poland, Belarus, Bulgaria, India, China, Malaysia, Indonesia. Ukraine's success on the global market in IT area is mainly based on technical education and high level of technical culture in local universities.

According to a research conducted by DOU in June, 2018, there are about 154 000 professionals working in software development domain. This is a highly competitive environment where industry is growing 11-26% per annum. Currently industry growth is highly constrained by a number of software engineer professionals available on the market. Such resource shortage leads to a number of negative effects, such as high turnover, short employee lifecycle at a company.

According to numerous researches, outsourcing and outstaffing companies prevail with a rate of 55% of overall market.



Picture 1 - Employment by IT company type

IT is a specific domain with high level of added value and percentage of intellectual efforts. With outsourcing and outstaffing models employer, their on-site teams interact with every specific engineer directly including handling interviewing

process, assessing candidate's technical, soft and communicative skills in English. In reality this means outsourced resources become integral part of the on-site teams and employers business in general. Taking into account a number of researches in project management area, that refer to 8-9 months as a duration needed for a new team of software engineering professionals to get to an optimal performance, build interpersonal relations and effective communication channels, high turnover rate can turn into a complete disaster for an employer that decides to outsource and puts their business under the considerable risks as work on the projects turns into endless knowledge transfer loop.

According to SHRM turnover was mentioned as one of the top challenges faced by 47% of Human Resource experts [23]. So, why does turnover matter? First of all, it is quite costly for the business. Secondly, turnover has negative impact on organization performance. Finally, resources are limited, and it's becoming more and more difficult to find the needed specialists to replace those who quit.

High turnover also puts business of outsourcing providers under the risk, which could be calculated as shown in (1):

$$\begin{aligned} \text{AnnualCostOfTurnover} &= (\text{Hiring} + \text{Onboarding} + \text{Development} + \\ &\quad \text{UnfilledTime}) \times (1.1) \\ &(\text{NumberOfEmployees} \cdot \text{AnnualTurnoverPercentage}) \end{aligned}$$

According to annual survey among Ukrainian IT outsourcing companies conducted by Ernst&Young, median turnover rate in 2018 has been 28%, whereas Indian outsourcing companies struggle with turnover rate around 40-50%. Nevertheless, 28% of turnover rate creates great financial and reputational losses for the emerging business. Just for an outsourcing company of 30 persons with turnover of 28%, annual cost of turnover is USD 12 245, without taking into account reputational losses and possible loss of projects and/or customers [appendix #1]. Definitely, for the emerging business turnover is quite damaging, even though it is an average rate among Ukrainian IT outsourcing companies.



## **1.2 Turnover management**

Modern IT companies consider employee empowerment to be a tool that helps raising effectiveness, increase engagement, inspire innovation and increase attrition.

Employee empowerment is often associated with engagement practices, employee mobilisation, process that encourages employees commitment to success of the whole company [7]. According to Spreitzer [27], employee empowerment can be defined as motivational construct demonstrated through meaning, competence, self-determination and impact. In other words, empowered employees find their work meaningful, feel competent in performing daily work activities, self-determined and believe that they play important role in a company.

Scholars and researchers have found definite connection between employee empowerment and turnover intention by means of job satisfaction, as their strongest connecting point and variable [29].

It means that advanced employee empowerment increases employees' job satisfaction, which consequently reduces employees' turnover intentions [18]. Bob Hayes in his study on measuring employee empowerment supports this idea as well. While measuring employee empowerment he has found out that respondents with high level of employee empowerment have high job satisfaction, feel valued at work, demonstrate higher level of participation, importance and variety [14].

Investigating turnover intentions in IT companies, we addressed to annual survey provided by DOU [9] in 2018 with 8638 respondents around Ukraine. According to the survey, in the process of choosing a new job Ukrainian Developers value compensation and benefits (78%), interesting tasks (65%) and career opportunities (57%). These results show that in order to be competitive on the market, an emerging IT business should consider this while developing compensation and benefit policies, providing Career Development plans, and choosing projects, as stack of technologies is crucially important for Ukrainian Software Engineers and has direct correlation with "interest" to the project.

Willingness to start a career in IT in the majority of cases connected to high interest to technologies (78%), high salaries (61%) and career opportunities (50%). Salary is mentioned in most cases since it's a hygiene factor or factor for dissatisfaction. When this factor is covered, an employee will feel no dissatisfaction, however he or she will not be automatically satisfied. It is well seen while checking results of DOU survey and the way how respondents answered the question : "What would you do if you didn't need to earn money?" annually above 70% of respondents reply that they would still work in IT, what shows their intrinsic motivation. The survey results support Herzberg's Two factor Theory (2)

**Table 1.1 - Herzberg's Two Factor Theory (2)**

	<b>Motivation factors</b>		<b>Hygiene factors</b>
	Achievement		Company policies
	Recognition		Supervision
	The work itself		Relationship with supervisor and peers
	Responsibility		Work conditions
	Advancement		Salary
	Growth		Status
			Security

According to this theory all attention should be focused on Motivation factors that comprises achievement, recognition, responsibility, the work itself, advancement and growth. As we see these factors are strongly connected to Employee Empowerment

which plays crucial role in motivating employees. In the context of an emerging IT business, it is necessary to invest in development of motivation by launching the set of employee empowerment practices. It will help to save costs and gain fast results. This is why we take motivation factors as a base of employee empowerment program.

### **1.3 Advantages and possible risks of introducing Employee Empowerment in growing company**

Talking about advantages of Employee empowerment, it should be kept in mind that first of all, it's a great managerial tool which can be successfully applied by leaders. It helps decrease overheads, whereas productivity increases. Managers can dedicate time to more important tasks. Organization and management benefit from knowledge sharing practices which usually accompany Employee empowerment. Employees are given an opportunity to make decision which can improve quality of service and satisfy customers. Moreover, while dealing with customers, it's quite important to be trustworthy and show decisiveness, ability to make decision without waiting for approvals. Finally, empowered employees produce more profit for the business than non-empowered employees.

However, Employees empowerment is beneficial not only for business and management, it has positive effect on employees through better understanding how their daily tasks are connected to the business performance. Empowerment increases job satisfaction and engagement. Moreover, it increases self-esteem of employees, as being empowered they feel needed and valued at work, capable to make decisions and influence the business. Employee empowerment motivates staff to find ways how to improve execution of their work. As it's seen, employee empowerment is positive for business, customers and employees.

There are definite risks while launching employee empowerment in an organization. First of all, not every Manager can accept employee empowerment correctly, fearing to lose power. Some of the employees can resist as they are not ready to hold more responsibilities. If employees are not trained well enough, the

empowerment program may fail or have negative effect. In order to make employees make decision, it can take a lot of time. Empowerment may be stopped while reductions of the workforce or changes in senior management. And finally, for launching empowerment it is required to have the right attitudes, knowledge and assumptions.

#### **1.4. Conclusions**

Lack of high quality Software Engineers and high competition among Ukrainian IT companies heat the market increasing turnover rate. According to annual survey results conducted by Ernst&Young the median turnover rate among Ukrainian outsourcing companies was 28% in 2018. For the emerging business with 27 employees, main assets of which are customers and high quality employees, annual turnover cost over comprises USD 10 000 for a company of 27 employees. This creates both financial and reputational losses, as customers who request IT services are highly demanding, willing to know every Software Engineer personally, react quite negatively when this Engineer quits.

While increasing employee empowerment the emerging business can resolve several strategically important tasks i.e. increasing job satisfaction, reducing voluntary turnover rate, increasing customer satisfaction and improving organizational performance. Despite the fact that there are definite risks of incorrect launch of employee empowerment, we find that this approach is still worth considering. Employee empowerment is a managerial tool and cognitive behaviour that is beneficial for business, customers and employees.

Finally, employee empowerment is connected to turnover rate by means of job satisfaction. In other words, launching employee empowerment approach is expected to increase the level of employees job satisfaction what consequently decrease voluntary turnover rate.

## **CHAPTER 2. Development of a model for assessing employee empowerment in an organization**

### **2.1 Analysis of employee empowerment**

Employee empowerment is a relatively complex concept which is hard to analyse, evaluate and measure. Bob Hayes investigated Employee Empowerment and in his study [14]. He focused on how to measure employee empowerment and developed an employee empowerment questionnaire that shows level of employee empowerment in a certain organization and how it is related to other variables i.e. job satisfaction, intentions to quit, etc. The questionnaire validity is verified by using Cronbach's Alpha Estimate that shows to what extent items of the questionnaire are interrelated.

This research has become a basis of other studies and is considered as fundamental in employee empowerment domain where 15 variables were analysed in relation to employee empowerment. Among these 15 there are only 5 that have the strongest positive relation against employee empowerment - job satisfaction, task importance, task variety, organization-based self-esteem and participation. In other words, employees with high level of employee empowerment are satisfied with their work, feel valued, demonstrate high participation and find their tasks and work in general quite interesting.

Consequently, it was considered to use just these 5 variables in our research, as the rest are less significant. Let's consider each of the variables in detail, figure out means to measure them in a specific organization and analyse ways to influence employee empowerment through them.

### **2.1.1 Analysis of job satisfaction**

Employees have attitudes towards their employer, job and career. However, the central employees' attitude is about job satisfaction [20]. According to Locke, job satisfaction can be defined as a positive emotional state that an employee may have regarding to his or her job [21]. Job satisfaction is closely linked to turnover rate and employee performance.

For measuring job satisfaction we propose to use Job Description Index (JDI) that comprises such facets of job satisfaction as the work itself, coworkers, career opportunities, pay and supervision [19].

The JDI [3] is one of the tools to research job satisfaction by means of self-report measurement. The survey has a list of words that describe various facets of job. Respondents who take part in the survey need to provide one of three possible answers i.e. Yes, No or ? (don't know), where the respondent puts Yes if the adjective corresponds to the recent job situation; No - if the adjective doesn't correspond to the job situation; and ? - if the respondent doesn't know the answer or cannot decide. The JDI [30] as a job satisfaction tool is available for free from Bowling State University.

For measuring the results of the questionnaire it is necessary to follow the following system [3]:

- 3 points if the answer is YES for a positive item
- 3 points if the answer is NO for a negative item
- 2 points if the answer is ?
- 1 point if the answer is Yes for a negative item
- 1 point if the answer is NO for a positive item

**Table 2.1 - Job satisfaction questionnaire:**

**The Job Descriptive Index Bowling Green State University 1975-2009**

<b>Area</b>	<b>Description</b>	<b>Items to rate</b>
<i>Work on present job</i>	<p>Think of the work you do at present. How well does each of the following words or phrases describe your work?</p> <p>In the blank beside each word/phrases write:</p> <p><u>Y</u> for YES if it describes your work  <u>N</u> for NO if it doesn't describe it  <u>?</u> - if you cannot decide</p>	<p><input type="checkbox"/> Fascinating  <input type="checkbox"/> Routine  <input type="checkbox"/> Satisfying  <input type="checkbox"/> Boring  <input type="checkbox"/> Good  <input type="checkbox"/> Gives Sense of accomplishment  <input type="checkbox"/> Respected  <input type="checkbox"/> Exciting  <input type="checkbox"/> Rewarding  <input type="checkbox"/> Useful  <input type="checkbox"/> Challenging  <input type="checkbox"/> Simple  <input type="checkbox"/> Repetitive  <input type="checkbox"/> Creative  <input type="checkbox"/> Dull  <input type="checkbox"/> Uninteresting  <input type="checkbox"/> Can see results  <input type="checkbox"/> Uses my abilities</p>
<i>Pay</i>	<p>Think of the pay you get now. How well each of the following words/phrases describe your present pay?</p> <p>In the blank beside each word/phrases write:</p> <p><u>Y</u> for YES if it describes your work  <u>N</u> for NO if it doesn't</p>	<p><input type="checkbox"/> Income adequate for normal expenses  <input type="checkbox"/> Fair  <input type="checkbox"/> Barely live on income  <input type="checkbox"/> Bad  <input type="checkbox"/> Comfortable  <input type="checkbox"/> Less than I deserve  <input type="checkbox"/> Well paid  <input type="checkbox"/> Enough to live on  <input type="checkbox"/> Underpaid</p>

	describe it <u>?</u> - if you cannot decide	
<i>People on your present job</i>	<p>Think of majority of people with whom you work or meet in connection with your work. How well does each of the following words or phrases describe these people?</p> <p>In the blank beside each word/phrases write:</p> <p><u>Y</u> for YES if it describes your work <u>N</u> for NO if it doesn't describe it <u>?</u> - if you cannot decide</p>	<input type="checkbox"/> Stimulating <input type="checkbox"/> Boring <input type="checkbox"/> Slow <input type="checkbox"/> Helpful <input type="checkbox"/> Stupid <input type="checkbox"/> Responsible <input type="checkbox"/> Likeable <input type="checkbox"/> Intelligent <input type="checkbox"/> Easy to make enemies <input type="checkbox"/> Rude <input type="checkbox"/> Smart <input type="checkbox"/> Lazy <input type="checkbox"/> Unpleasant <input type="checkbox"/> Supportive <input type="checkbox"/> Active <input type="checkbox"/> Narrow Interests <input type="checkbox"/> Frustrating <input type="checkbox"/> Stubborn
<i>Opportunities for promotion</i>	<p>Think of the opportunities for promotion that you have now. How well does each of the following words and phrases describe this?</p> <p>In the blank beside each word/phrases write:</p>	<input type="checkbox"/> Good opportunities for promotion <input type="checkbox"/> Opportunities somewhat limited <input type="checkbox"/> Promotion on ability <input type="checkbox"/> dead-end job <input type="checkbox"/> Good chance for promotion <input type="checkbox"/> Very limited <input type="checkbox"/> Infrequent promotions <input type="checkbox"/> Regular promotions



	<u>Y</u> for YES if it describes your work <u>N</u> for NO if it doesn't describe it <u>?</u> - if you cannot decide	__Fairly good chance for promotion
<i>Supervision</i>	Think of the kind of supervision that you get on your job. How well does each of the following words and phrases describe this?  In the blank beside each word/phrases write:  <u>Y</u> for YES if it describes your work <u>N</u> for NO if it doesn't describe it <u>?</u> - if you cannot decide	__Supportive __Hard to please __Impolite __Praises good work __Tactful __Influential __Up-to-date __Unkind __Has favourites __Tells me where I stand __Annoying __Stubborn __Knows job well __Bad __Intelligent __Poor planner __Around when needed __Lazy

Maximum scores that employee may rate job satisfaction is 216, this value means that employee is absolutely satisfied of his or her job. Minimal score that employee may rate job satisfaction is 72, which would mean absolute dissatisfaction of the job.

**Table 2.2 - Job satisfaction rate scores**

	<b>Area</b>	<b>Max score as per JDI, points</b>	<b>Min score as per JDI, points</b>
	Work on Present Job	54	18
	Pay	27	9
	People on your Present Job	54	18
	Opportunities for Promotion	27	9
	Supervision	54	18
	<b>Total</b>	<b>216</b>	<b>72</b>

We consider four following intervals when assessing results of this questionnaire

**Table 2.3 - Job satisfaction rate intervals (overall)**

<b>Job satisfaction level</b>	<b>Score as per JDI, from, points</b>	<b>Score as per JDI, to, points</b>
Low	72	100
Below the average	101	129
Average	130	158
Above the average	159	187
High	188	216

At the same time, we consider following intervals when assessing by specific areas:

**Table 2.4 - Job satisfaction rate intervals (per area)**

Area	Satisfaction level		
	Low interval	Average interval	High interval
Work on Present Job	18-30	31-43	44-54
Pay	9-15	16-21	22-27
People on your Present Job	18-30	31-43	44-54
Opportunities for Promotion	9-15	16-21	22-27
Supervision	18-30	31-43	44-54

Depending on a job satisfaction rate in the area, it could be increased by using following approaches.

- *Work on present job.* In order to improve rate per this area, employee needs to be told about business goals of work they are doing, why their project is important and what benefits and perspectives the employee will gain.

- *Pay.* Improvement in Pay related area, could be achieved through development of compensation and benefit system. If such system does already exist, it needs to be checked for competitiveness with the ones offered by competitors. In general it's important to keep salaries variation not more than 10% of market average value.

- *People on your present job.* In order to improve in the people area, team work needs to be revised and arranged. Here we propose to support research and development initiatives from the employees and engage them into corporate events.

- *Opportunities for promotion.* Issues with this area usually take place when employee lacks individual development plan. If plan already exists, it needs to be revised together with an employee, set regular meeting to check the progress.
- *Supervision.* If employees lack supervision, there is a need to develop mentorship program, promote feedback culture, launch knowledge-sharing activities.

### **2.1.2 Analysis of organization-based self-esteem**

Organization-based self-esteem (OBSE) is crucially important in terms of forming attitudes and behaviour at work [17]. According to Pierce et al. [25] organization-based self-esteem is considered to be extent to which employees believe they can satisfy needs by holding positions within an organization. Employees with high OBSE have a sense of personal adequacy, as organizational members and a sense of having satisfied needs from their organizational roles in the past [11]. Thus, organization-based self-esteem reflects self-perceived value that individuals have of themselves as organization members acting within the organizational context [22]. Consequently, the employees with high OBSE should perceive themselves as important, productive, needed and worthwhile within their employing organization and are not willing to quit [12]. Employees with low OBSE experience more stress, require more feedback and support, they are more likely to quit [26].

In order to measure OBSE factor, we propose to use methodology of 10-item Questionnaire by Pierce, Gardner, Cummings, and Dunham [24]. It requires answering 10 questions:

1. I'm taken seriously
2. I'm trusted
3. I'm important
4. I can make a difference
5. I am valuable
6. I am helpful
7. I count around here

8. I am cooperative
9. There's faith in me
10. I'm efficient

There are five type of answers, that we weight from 1 to 5 respectively:

1. Strongly disagree (weight 1)
2. Disagree (weight 2)
3. Neither agree nor disagree (weight 3)
4. Agree (weight 4)
5. Strongly agree (weight 5)

Evaluation of a OBSE score for an employee is done by summing response weights, for the questions listed above.

Maximum scores that employee may rate OBSE is 50, this value means that employee is absolutely believes they can satisfy needs by holding positions within an organization. Minimal score that employee may rate OBSE is 10.

We consider five following intervals when assessing results of this questionnaire:

**Table 2.5 - OBSE rate intervals**

<b>OBSE level</b>	<b>Score, from, points</b>	<b>Score, to, points</b>
Low	10	17
Below the average	18	25
Average	26	33
Above the average	34	41
High	42	50

OBSE rate can be improved through providing complex tasks, providing autonomy i.e. no micro-management and effective feedback. We also recommend to

apply coaching methods such as GROW, set KPIs for an employee and periodically verify how he or she reaches the given indicators and objectives each 6 months as there is a strong relation between employee's self-esteem and a way how well he or she reaches the goals, which are important for a company's success.

### **2.1.3 Analysis of task variety**

Task variety is a job characteristic that enriches the job, increases job commitment and productivity. Usually task variety goes together with skill variety. However, according to studies, younger employees with less experience will be productive with task variety, as it will help them to gain experience; whereas older employees are more likely to be effective while facing skill variety since they have already gained skills and knowledge. Since in Ukrainian IT outsourcing companies the biggest part of employees are typically young people (aged 20-35), task variety is quite essential for them [31].

We propose to measure task variety in IT companies using project management trackers such as Atlassian Jira or VersionOne, that allow to track types of task employee is working on. There are 4 types of activities software engineers may be occupied during software development cycles:

1. feature design - requirements investigation and preparation of documentation needed for a feature development
2. feature development - implementation of a new functionality in the project
3. defect resolution - implementation of a fix needed for a software defect
4. customer support - handling requests from customers that are using the developed software

Usually engineers prefer working on feature design and feature development while defect resolution and customer support is something they are trying usually to avoid. At the same time if engineers are too focused on just feature development, business may suffer from customers not being supported and bugs not being fixed that may put business operations under the risk. That's why keeping balance between various

activity types is crucial. Our recommended average occupation by activity type is following:

**Table 2.6 - Optimal occupation by activity types**

<b>Activity type</b>	<b>Optimal occupation, %</b>
Feature development	40
Defect resolution	30
Feature design	20
Customer support	10

Average occupation needs to be calculated against an assessment cycle that varies depending on a software development methodology used. We calculate percentage of successfully completed tasks by types:

1. *Agile Scrum* - as work here is done within 2 or 3 week iterations, we recommend to make assessment cycle duration *4 sprints long*.

2. *Agile Kanban* - as there is no concept of iterations and work is done in an endless flow where tasks are executed one-by-one once they are added to a task board, we recommend to constraint assessment cycle duration to *3 months*.

3. *Waterfall* - there is also no concept of sprints, all work done in a single flow where and different phases are not mixed, meaning during defect fix phase, all engineers will be working on the same type of assignments. Thus, task variety is not effectively applicable to the waterfall model.

We propose following intervals to rate job variety based on a concept of a standard deviation of activity percentages.

**Table 2.7 - Job variety rate intervals**

<b>Job variety</b>	<b>Variety stddev, from</b>	<b>Variety stddev, to</b>
Low	42	50
Below the average	33	41
Average	22	32
Above the average	14	21
High	0	13

So, for example, if employee is occupied equally with different activity types, say 25% per each activity, standard deviation will be equal to 0. Standard deviation of 12.9 corresponds to a distribution specified in table 2.6. Standard deviation of 50 means that employee is 100% allocated by just specific activity and not involved into any other ones.

#### **2.1.4 Analysis of task importance**

According to Grant [13], job performance may be increased with a help of task significance. This term refers to the perception that one's job or task exerts a positive impact on others. It is commonly perceived as meaningfulness of one's work. It is one of the five job characteristics identified in Oldham and Hackman's Job Characteristics Theory. In other words, if an employee believes that his job can positively influence other people, company success, this will increase his performance. In this respect, job becomes more meaningful for employees. Studies prove that employees who were given cues on task significance demonstrated increased job performance.

According to DOU [10], one of the main reasons why Software Engineers change jobs is due to task significance which is described as "interesting" or "impacting" project. Over 65% of Ukrainian Software Engineers mention "interesting



tasks” as one of top 3 reasons for the job change. This is why it is crucially important to show significance not only of tasks, but also of the whole project and its meaningfulness for the company profit, customer’s benefit, etc. The more connection to stakeholders, the more significant the job will be for employees.

In order to measure task significance factor, we propose to use methodology of 3-item questionnaire [15]:

1. In general, how significant or important is your job? That is, are the results of your work likely to significantly affect the lives or well-being of other people?
2. This job is one where a lot of people can be affected by how well the work gets done. How accurate is the statement in describing your job?
3. The job is quite simple and repetitive. How accurate is the statement in describing your job?

There are seven type of answers, that we weight from 1 to 7 respectively. Evaluation of a task significance score for an employee is done by summing response weights, for the questions listed above.

Maximum scores that employee may rate job significance is 21, this value means that employee is absolutely believes they are working on important and impactful tasks and may benefit organization he or she works for. Minimal score that employee may rate job significance is 3.

We consider four following intervals when assessing results of this questionnaire:

**Table 2.8 - Job significance rate intervals**

<b>Job significance level</b>	<b>Score, from, points</b>	<b>Score, to, points</b>
Low	3	6
Below the average	7	10
Average	11	14
Above the average	15	18
High	19	21

Job significance rate can be improved through consistent communicating periodically to employees about importance of their work and share related company success stories. Line manager must communicate this at least once a quarter to every employee he's responsible for. According to existing studies, such as in [13] communication of employee job significance severely empowers employees, they feel their importance. As a result employees become more productive, more engaged, satisfied of their job and don't quit.

Secondly, it is quite helpful to connect employees with end users or customers, who benefit from the work being done. Software Engineers are not always connected to end customers, and for increasing work significance, it is quite a positive practice to connect employees with end customers in order to see how their work impacts other people, improves productivity of organizations, brings positive changes, etc. Such information inspires, brings enthusiasm and motivates to work further.

### **2.2.5 Analysis of participation**

Employee participation is quite crucial for building employee empowerment. With a help of participation it is possible to involve employees in decision-making process, increase responsibilities of employees, form self-managed teams what will consequently increase employee empowerment.

Employee participation is often realized through participative management, i.e. when employees are involved in resolving administrative and management issues, through taking part in analyzing problems, developing strategy and implementing solution. While being involved in management part of work, employees take part in goal-setting sessions, defining work schedule, initiating new ideas. According to Coleman [6], employee participation increases job enrichment through building self-managed teams, quality groups, etc.

For the assessment purposes we propose to build it up from three components:

- *meeting project goals* - most significant factor, reflects how effectively employee meets project goals. This is to be calculated as a rate of successfully completed tasks among ones that were planned to be completed for an term of 3 months. This could be calculated from a project management system, such as Atlassian Jira or VersionOne.

- *mentorship activities* - reflects mentorship activity of an employee and whether he or she takes a responsibility of peer supervision

- *employee participation in internal events and processes* - shows participation in internal corporate activities, such as internal technical meetups, committees and technical interviews.

We propose to assess participation rate as follows:

$$P = 0.5rP + 0.3rM + 0.2rE \quad (2.1)$$

where  $rP$  is a project goal meeting rate scaled from 0 to 1, where 0 corresponds to a case when employee hasn't successfully met any project goals, 1 corresponds to a case when employee met all project goals set for him.

$rM$  is a mentorship rate shown by an employee scaled from 0 to 1, where 0 corresponds to a case when employee is neither supervises peers nor is being supervised. In case employee is being mentored by other peers,  $rM$  is added a value of 0.25. If employee is supervising other peers,  $rM$  is added a value of 0.25 for every peer supervised but not more than 0.75 in total.

$rE$  is a rate of employee participation in internal corporate activities scaled from 0 to 1, where 0 corresponds to a case when employee is not participating in internal corporate activities and 1 corresponds to a case when employee is actively participating in various activities. In case employee is participating in technical interview processes required for hiring purposes,  $rM$  is added a value of 0.4. If employee participates in internal technical meetups as a speaker,  $rM$  is added 0.3, in case as an attendee - 0.1. If employee is participating in committees,  $rM$  is added value of 0.2.

Maximum score that employee may get for a participation assessment is 1, this value means that employee is absolute participator, 0 - in case employee is not reaching any goals and is not participating in company activities. We consider four following intervals when assessing results of this participation assessment

**Table 2.9 - Employees participation rate intervals**

<b>Participation level</b>	<b>Score, from, points</b>	<b>Score, to, points</b>
Low	0	0.2
Below the average	0.21	0.4
Average	0.41	0.6
Above the average	0.61	0.8
High	0.81	1

Participation rate can be improved through line managers that communicate goals, set expectations to employees verbally and through KPIs in relation to project goals, engage employees for knowledge sharing and mentorship. In order to achieve such goals, line managers have following tools:

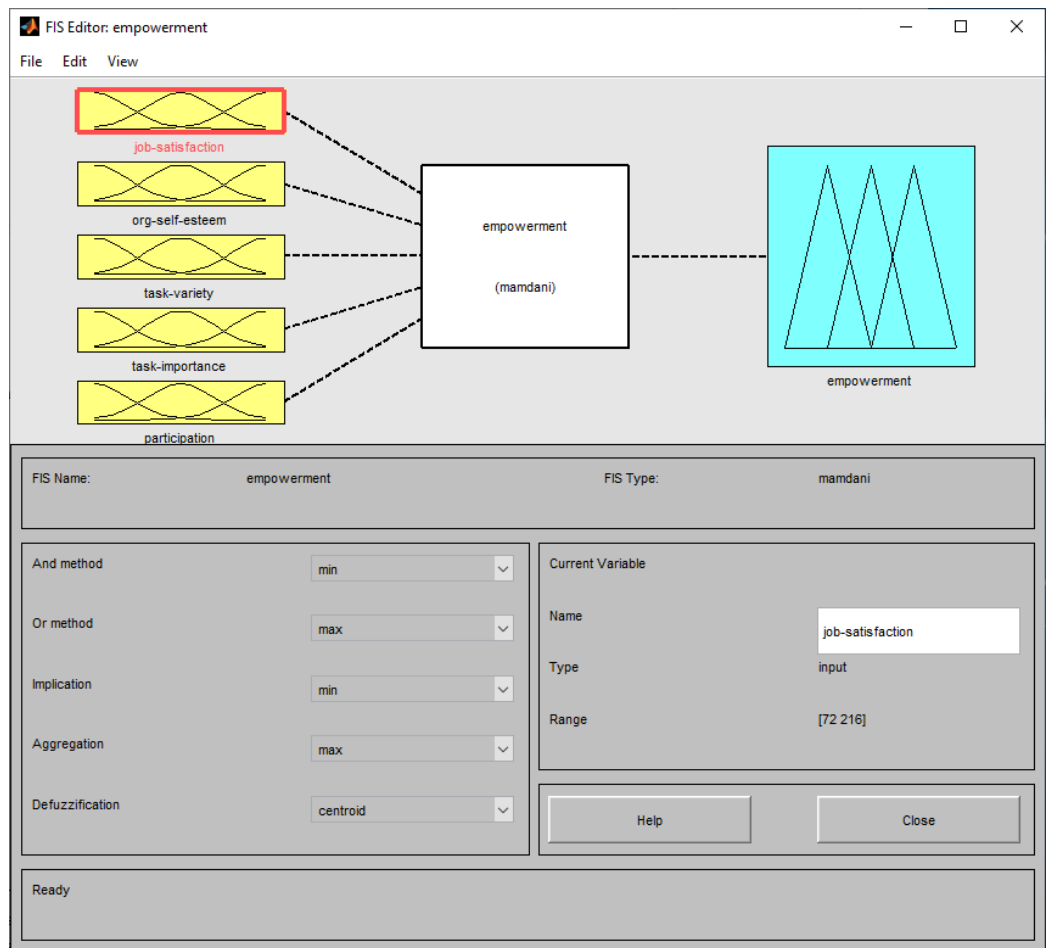
- *Training*: force employees to increase and gain skills and knowledge needed for further professional development as well as for contributing to the company's growth.

- *Information sharing*: as employees must know about the current situation of the company
- *Employee decision making*: employees could be involved into decision making on different levels both in project work as well as participating in administrative management.
- *Rewards*: employees may suggest ideas about rewards, however, they should be connected to performance [8].

### **2.3 Development of a model to assess a employee empowerment in IT company**

In 2.2.1-2.2.5 we have analysed five different variables that have strong influence against empowerment. While they allow to assess specific aspects of empowerment there is no effective approach to assess overall empowerment level in an organization as mentioned variables are not directly connected with each other. Simply put - just knowing that level of task variety and participation is low doesn't allow to assess overall situation in the company.

For a purpose of connecting all variables into a single model we have developed a system based on a fuzzy inference [32]. Developed fuzzy inference system is based on a rule data provided by experts who work in human resources domain. Based on their knowledge and work experience, experts have provided us with an information on how input variables as job satisfaction, organisation-based self-esteem, task variety, task importance, participation do influence output variable empowerment.

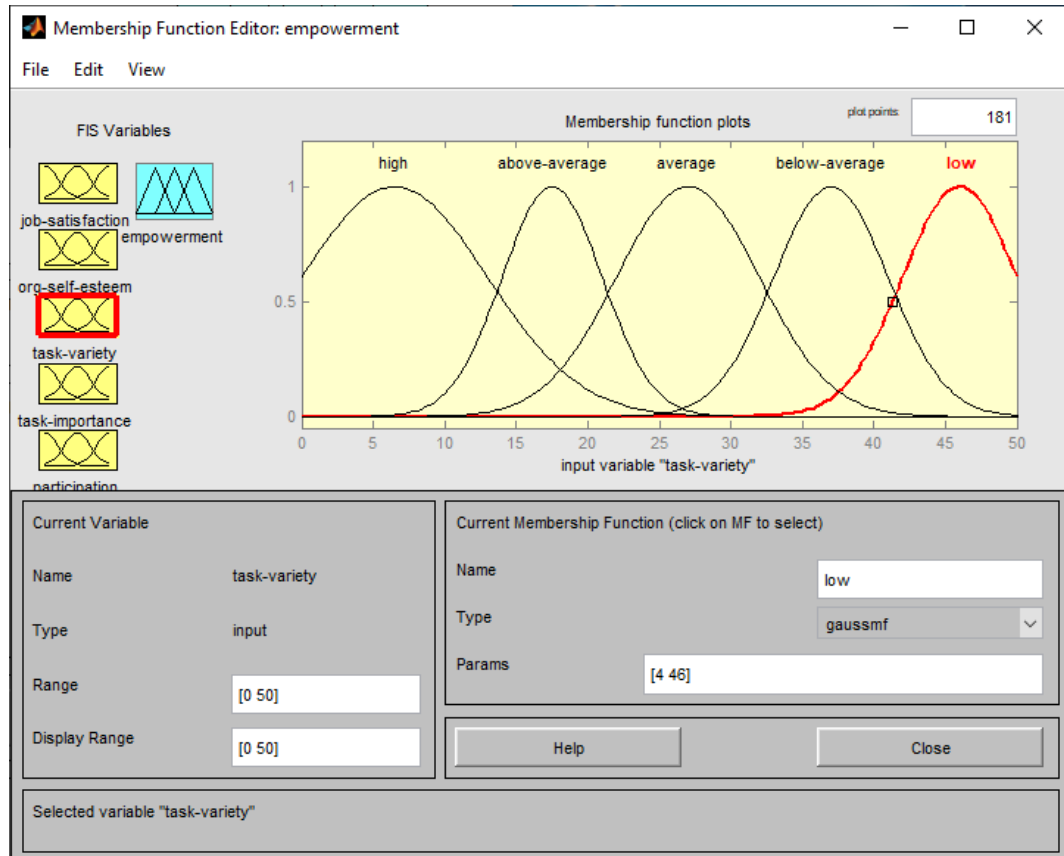


**Figure 2.1 - Overall fuzzy inference system layout**

Fuzzy logic is a form of soft computing method which accommodates the imprecision of the real world. As the antonym of the traditional, hard computing, soft computing exploits the tolerance for imprecision, uncertainty, and partial truth to achieve tractability, robustness, and low solution cost. Usage of a fuzzy logic/inference for this is justified by a nature of the problem as getting analytical expressions or utilizing regression based methods require a significant amount of experimental data sets and measurements which are simply not available for a public use. Instead, using an IF-THEN alike rules provided by experts provide reliable means to assess variables connection and overall influence against the empowerment.

For building a fuzzy model Fuzzy Logic Toolbox was used from Matlab 2014. As linguistic variables, we selected the ones elaborated in 2.2.1-2.2.5. Overall system layout is shown in figure 2.1. Each input variable as well as an output, which is empowerment, have five membership functions, which are a curves that define the

feature of fuzzy set by assigning to each element the corresponding membership value, or degree of membership, - low, below average, average, above-average and high. All input variables used for a model have levels introduced in sections 2.2.1-2.2.5.



**Figure 2.2 - Membership functions for organization-based self-esteem input variable**

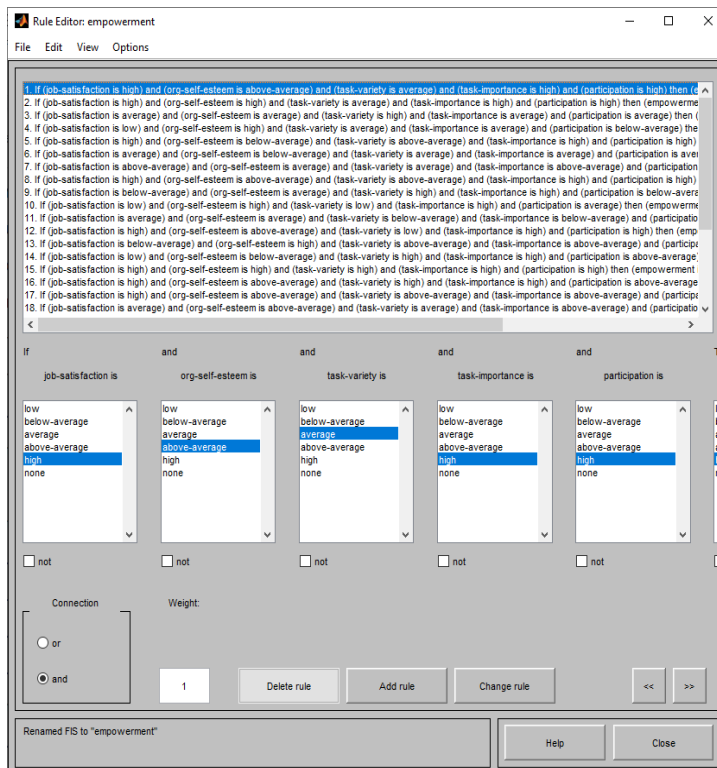
Membership functions [33] for job satisfaction MF were defined based on levels considered in Table 2.3, membership functions for organization-based self esteem were defined based on levels considered in Table 2.5, membership functions for task variety were defined based on levels considered in Table 2.7, membership functions for task importance were defined based on levels considered in Table 2.8, membership functions for task participation were defined based on levels considered in Table 2.9.

It was decided to use symmetric gaussian membership functions for all the input and output variables. Result knowledge base consists of 28 expert rules that are shown on Figure 2.3 and Table 2.10.

Empowerment, as an output variable is distributed within a range of [0;1] and has following levels defined:

**Table 2.9 - Empowerment rate intervals**

Empowerment	Score, from, points	Score, to, points
Low	0	0,1062
Below the average	0,1063	0,3562
Average	0,3563	0,6062
Above the average	0,6063	0,8562
High	0,8563	1



**Figure 2.3 - Fuzzy rule set view in Matlab, Fuzzy Logic Toolbox application**



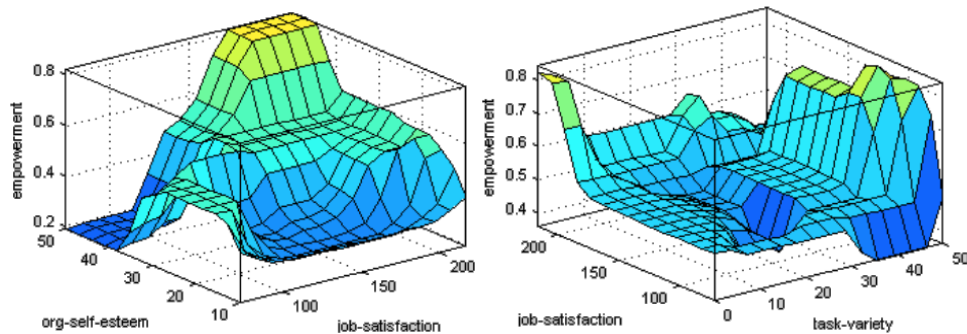
**Table 2.10 - Fuzzy rule set**

<b>Rule #</b>	<b>Job satisfaction</b>	<b>Organization based self esteem</b>	<b>Task variety</b>	<b>Task importance</b>	<b>Participation</b>	<b>Empowerment</b>
1	high	above average	average	high	high	high
2	high	high	average	high	high	high
3	average	average	high	average	average	average
4	low	high	average	average	below average	low
5	high	below average	above average	high	high	high
6	average	below average	average	average	average	below average
7	above average	average	average	above average	above average	above average
8	high	above average	above average	high	high	high
9	below average	average	high	high	below average	average

10	low	high	low	high	average	below average
11	average	average	below average	below average	average	high
12	high	above average	low	high	high	high
13	below average	high	above average	above average	above average	average
14	low	below average	high	high	above average	low
15	high	high	high	high	high	high
16	high	above average	high	high	above average	high
17	high	above average	above average	above average	high	high
18	average	above average	average	above average	high	above average

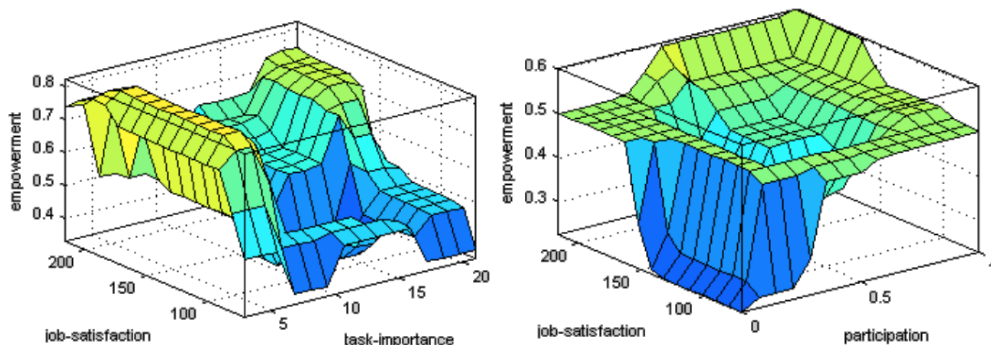
19	high	high	high	above average	above average	high
20	high	high	high	above average	high	high
21	high	above average	high	above average	above average	high
22	low	low	low	low	low	low
23	below average	average	average	below average	high	average
24	above average	above average	low	above average	above average	average
25	above average	average	above average	average	above average	average
26	below average	below average	high	high	above average	average
27	high	average	low	average	low	average
28	below average	above average	average	high	average	average

Figures 2.4 and 2.5 depict how different combinations of input variables such as job satisfaction and task variety influences an output variable, which is an empowerment. Mentioned visualizations are built in Matlab's Fuzzy Logic Toolbox.



**Figure 2.4 - Inputs-outputs correlation visualizations for a) organization-based self esteem and job satisfaction to empowerment b) job satisfaction and task variety to empowerment**

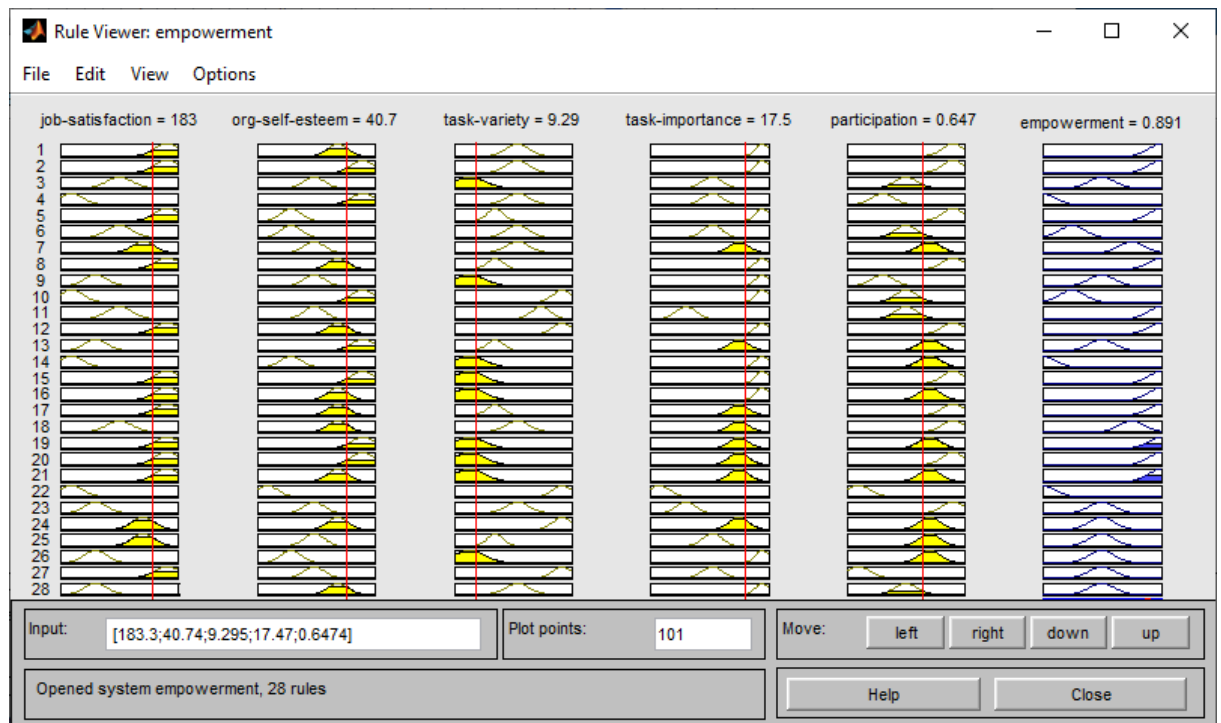
From the visualizations it could be briefly assessed how specific combinations of the parameters affect empowerment. For instance it could be seen that only low level of participation negatively influences empowerment, while levels from below average and up to high influence empowerment only within a range 10% range.



**Figure 2.5 - Inputs-outputs correlation visualizations for a) job satisfaction and task importance to empowerment b) job satisfaction and participation to empowerment**

Using the Matlab's fuzzy rule viewer model could be actually used for testing. by specifying values of input variables for which Matlab automatically calculates

empowerment value. Rule viewer interface is shown on Figure 2.6. As it could be seen from the screenshot, for a given job satisfaction level of 183, organization-based self-esteem of 40.7, task variety of 9.29, task importance of 17.5 and participation of 0.647, according to model, Matlab calculates an empowerment value of 0.891 which corresponds to a “high” level.



**Figure 2.6 - Fuzzy rule viewer**

## 2.4 Conclusions

Employee empowerment assessment is complicated. According to Hayes [14], there are 15 factors that are connected with employee empowerment and even if all of them get measured there is no straightforward way to assess overall empowerment in an organization. We have determined 5 most influential variables from that research such as job satisfaction, task importance, task variety, organization-based self-esteem and participation and developed a model that takes them all into account. For each of the parameter an approach for a calculation and assessment was considered alongside the recommendations to increase it using specific action items. All of the parameters were joined together into a single model backed up by a Fuzzy logic [34] which is based on expert knowledge. Introducing a fuzzy logic allowed to assess specific

empowerment level in a straightforward way by calculating 5 values of the input variables. Fuzzy inference model that was synthesized provides cost-effective way to assess empowerment by avoiding building costly hard mathematical models and could be applied to any IT company in order to assess an empowerment level.

## CHAPTER 3. Development of an employee empowerment adjustment technique

### 3.1 Development of a technique to adjust employee empowerment in an organization

In chapter 2 a model to assess an employee empowerment in IT company was developed. Model allows to interconnect five different factors that influence employee empowerment with actual level of empowerment in an organization. As a result of investigations and analysis we propose following technique of assessing and improving employee empowerment shown on Figure 3.1.

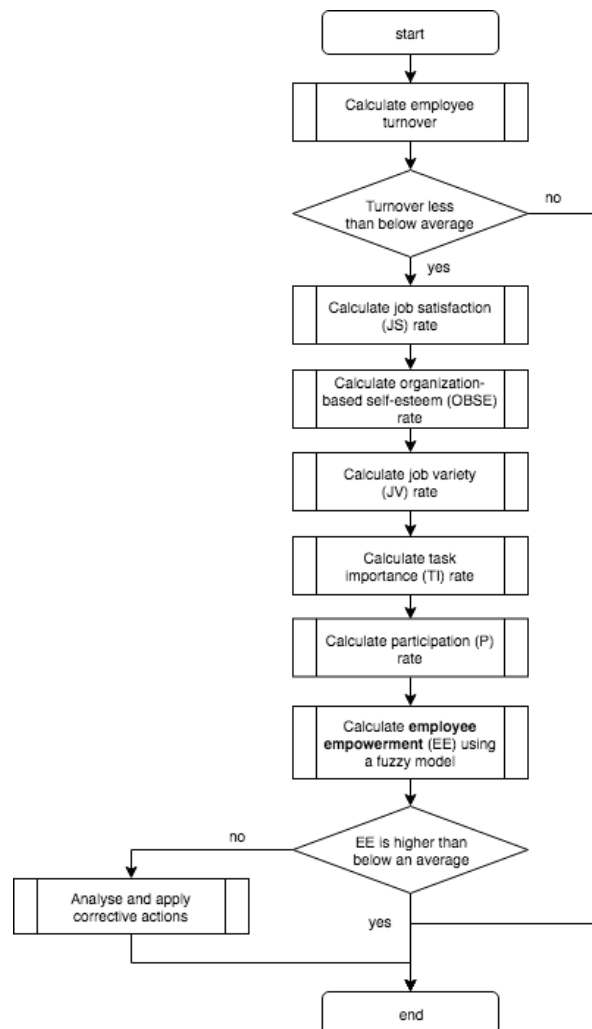


Figure 3.1 - Algorithm for assessing employee empowerment

We consider level of empowerment starting from which empowerment needs an attention as *below average*. According to a breakdown shown in table 2.9 corresponds, this corresponds to a value of 0,3562. So if retrieved employee empowerment value is less or equals 0,3562 we consider this as an indication of severe issues with empowerment with the assessed organization. In this case organization needs deep analysis of five factors used for an assessment. We propose following approach depicted on Figure 3.2.

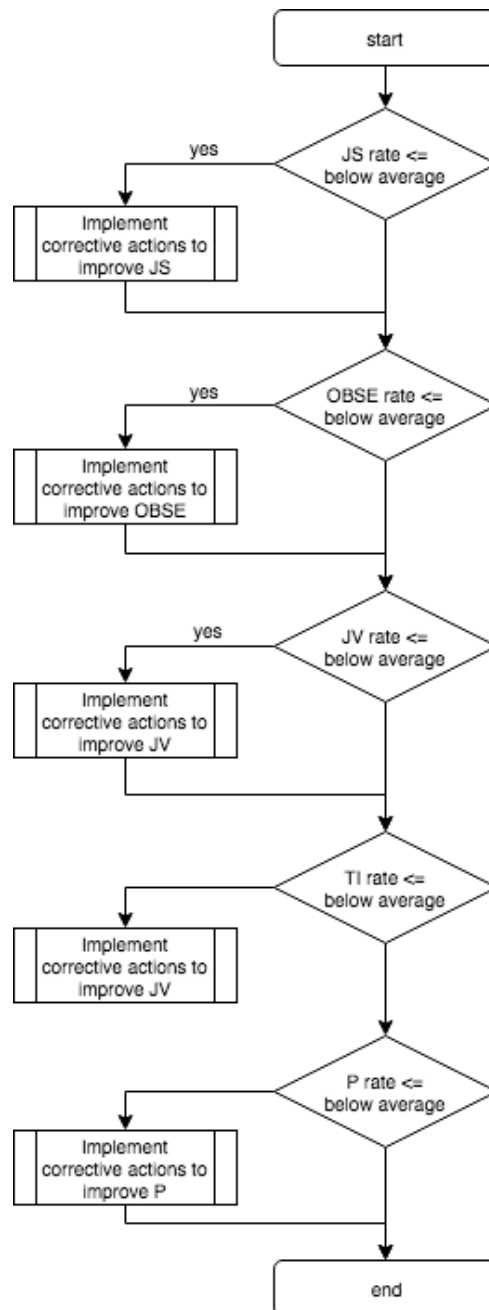




Figure 3.2 - Algorithm for applying corrective actions in order to increase employee empowerment.

### 3.2 General Overview of IT company Plexteq

Plexteq is a newly established SME with staff of 27 employees. The company was founded in 2015 in Vinnytsia by Ukrainian Developer and Entrepreneur.

The company has centralized management structure, as all business decisions are taken by CEO.

Plexteq provides IT services to American and European companies (outsourcing), and simultaneously develops its own IT products (with focus to make lives of users easier Plexteq is an actively developing IT company based in Vinnytsia, Ukraine.

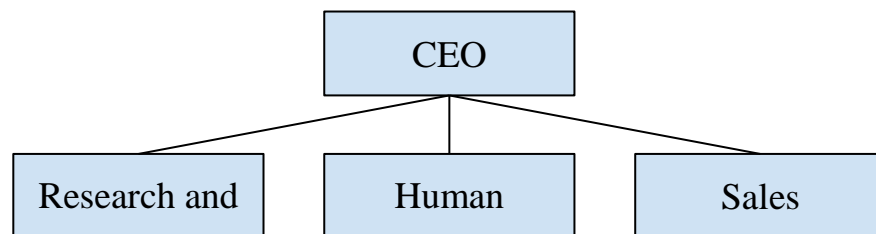
This company combines characteristics of outsourcing and product company, investing its income from outsource projects into product development. The company has been recognized by international business partners and customers who addressed to Plexteq for developing software solution and resolving urgent and complex tasks, whereas other companies failed to do that. Providing high quality services Plexteq has gained great reputation among customers, who are willing to increase teams and continue cooperation. The company grows slowly and steadily. It started from 3 part-time Software Engineers in 2015, and now there are 27 full-time Employees and over 5 open vacancies.

- **Mission:** providing high quality custom software development, system operation, system integration services by leveraging ISO 9001/2000 and CMM v3 compatible processes, providing efficient communication that allow our customers to meet their business goals in highly competitive and fast paced environment.

- **Vision:** to be successful, highly respected and known international company that provides high quality core software/hardware infrastructure services for b2b and b2c large enterprises, including, but not limited to, highly resilient hardware-software hybrid solutions; AI-powered solutions based on Big Data; hardware manufacturing facilities.

Plexteq corporate values include technical excellence, effective communication and proactiveness that are crucial for both attracting new candidates and retaining employees.

The company has functional organizational structure with the focus and the majority of personnel in R&D department. Software Engineers work in teams or solely on projects which can be related to Plexteq product development or software consulting service.



**Figure 3.3 - Plexteq functional structure**

Each department has a manager or director who answers to an executive a level up in the hierarchy who may oversee multiple departments. One such example is a director of HR who supervises the human resources department and answers to CEO who is in charge of the hiring, sourcing, employee retention etc. An advantage of this structure is employees are grouped by skill set and function, allowing them to focus their collective energies on executing their roles as a department.

Currently Plexteq is on its organization development lifecycle phase known as “go-go” [1]. The company is actively growing, although there are several typical for this stage problems: lack of procedures and rules, lack of Managers, there’s a threat to get into the “Founder’s Trap”. Since the Founder is a focus of the majority of processes, it results in time-consuming processes due to organizational overhead. Besides possibility of Founder’s Trap, there are other business threats and risks such as voluntary turnover, lack of qualified specialists on the market, lack of managers in the company, instability of Ukrainian political situation, etc.

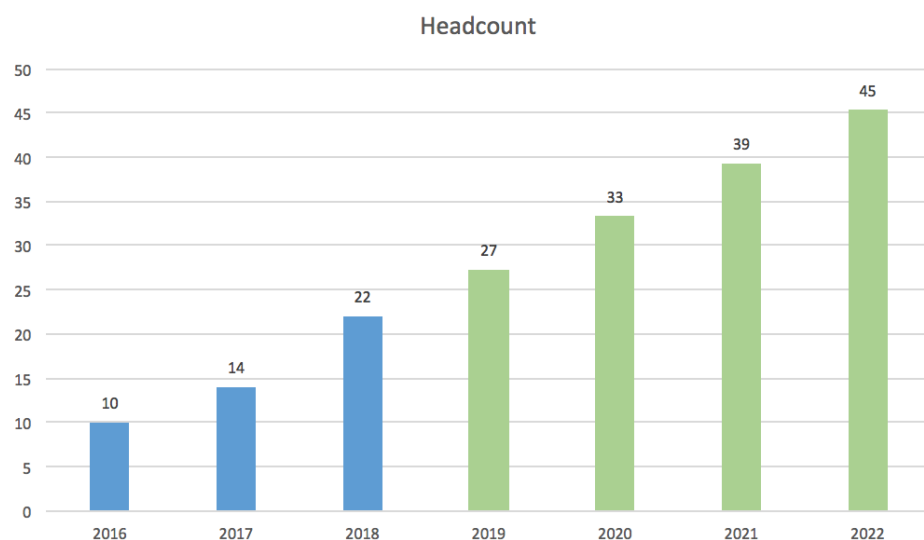
The business accountability depends on recruiting highly qualified specialists, employees retention and sales. Recent customers are willing to work directly with

every team member who is involved in the project. Voluntary turnover of employees causes tremendous damage to the company. This is why all the efforts of this research work is focused on decreasing employee turnover rate, even though it corresponds to the median turnover rate on the Ukrainian market.

Plexteq is increasing team through hiring new employees. The company has been steadily growing from 2 persons in 2015 to 27 in April 2019. The annual turnover rate in 2018 was 28%. Despite the fact that this is a median turnover rate among Ukrainian outsourcing company, Plexteq faces great losses every time when any employee quits. It directly impacts business, increases customer concern, put limitations on business opportunities.

This is why it is required to put all the efforts for decreasing turnover rate in this exact company. Moreover, we have also added data on average employee longevity tenure (16 months) and average employee tenure for current employees (21 months). These are the data that will help us in the future to analyze the metrics, compare them and see how the HR solutions will impact turnover and employee tenure.

The employee headcount has been moderately growing. The number of employees increased from 10 employees in December, 2016 to 14 in December 2017. In a year the staff grew to 22 employees. As of April 2019, Plexteq had 27 full-time employees. The staff growth is connected to team growth and demand of Engineers for development of Plexteq products and software development services.



**Figure 3.4 - Plexteq headcount**

Figure 3.4 depicts headcount over last 3 years and a forecast for 2019-2022.

Table 3.1 shows how turnover changed alongside with turnover costs.

**Table 3.1 - Turnover costs per annum**

<b>Year</b>	<b>Turnover, %</b>	<b>Turnover costs, USD</b>	<b>Turnover costs per employee, USD</b>
2016	16	2 048	204.8
2017	25	4 480	320.0
2018	28	7 885	358.4
2019 <i>(forecast)</i>	35	12 245	448.0
2020 <i>(forecast)</i>	41	17 493	524.8
2021 <i>(forecast)</i>	47	23 663	601.6
2022 <i>(forecast)</i>	53	30 754	678.4

Turnover costs are calculated in Table 3.1 using formula 1.1. As it could be seen from the table above, turnover and related costs grow over the time and lead to significant revenue losses. Alongside with turnover rate, it became a trigger that initiated employee empowerment assessment in Plexteq.

### **Stakeholder Analysis Matrix**

There several groups of stakeholders which are related to the employee empowerment project. All stakeholders are divided into 2 groups: High

Impact/Influence and Medium Impact/Influence. Let's consider each of the stakeholders:

*CEO* has high impact on the project and is highly influenced by the project. For him it is highly important to have low turnover rate, empowered and engaged employees. With CEO support HR Managers are able to implement the project, received needed budget, etc. However, the same stakeholder may block the project with disapproval or limit the budget. For convincing this stakeholder, it is required to show benefits of the project, project ROI, risk management strategy. The next important stakeholder is *personnel*. Personnel are the target audience of the employee empowerment project with high level of impact as well as high influence. For successful implementation of the project, it is required to be willing to cooperate and get involved in employee empowerment project. For employees it is necessary to understand importance of their work and benefit from it. The bottleneck here can be unwillingness to take part in the project and protest. HR Managers must show benefits of the project and support this stakeholder while implementing it [Appendix #3].

*HR Department* is the next stakeholder with High impact/ High influence level. This stakeholder is responsible for project implementation. For HR Department it is important to implement the project, measure results, achieve set goals. Contribution from this stakeholder is seen through supporting the process, providing effective communication, interacting with employees and other stakeholders while project implementation. The possible blockers are connected to time management issues, inability to meet deadlines. As a solution, it is possible to divide the project into parts and set definite time frames.

There are 3 more stakeholders which are involved in the project, although their level of impact/importance is medium. Among them are management, customers and competitors.

Management is interested in creating highly effective teams, meet business requirements, satisfy customers. Managers can be moderately involved in the employee empowerment project, however, their role is to support others. Also, they can explain the importance of the project from the business perspective or customer side. The

possible blockers are indifference and unwillingness to participate. Customers are interested in stability of hired teams, high performance and long employee tenure. This stakeholder can help with providing feedback on team work in time. If customers do not provide feedback, it can become a certain blocker. For engaging this stakeholder it is necessary to show benefits and agree upon feedback procedure.

For competitors is it important to be more competitive on the market than others. They can contribute to the project through sharing more information about their own projects, policies and procedures. It will help us analyze this information and take into account the data for the next projects. The possible blocker is aggressive headhunting, launching similar project, etc. It is possible to engage competitors through participation in open events, like meetups and conferences related to HR and IT. Thus, stakeholders analysis matrix help us analyse and take into account interests of all the stakeholders and develop strategy on engaging them into the project.

### 3.3. Plexteq case study

We started the assessment of employee empowerment from planning and scheduling needed actions. All the events are indicated in the schedule below:

**Table 3.2. Project Activities Panning**

TASK NAME	START DATE	DUE DATE
Launch surveys	21.01.2019	31.01.2019
Analyze Results	25.01.2018	01.02.2018
Offer solutions on participation, task variety and task importance	27.01.2018	04.02.2018

Mentorship program launch	11.02.2019	11.08.2019
Check progress	20.02.2019	11.08.2019
Analyze Results	01.02.2019	05.02.2019
Task Variety Training	04.03.2019	03.05.2019
Analyze Results	15.05.2019	20.05.2019
Launch Weekly Digest	27.05.2019	26.06.2019
Analyze Results	29.06.2019	05.07.2019
Repeat surveys	08.07.2019	19.07.2019
Analyze Final Results on Employee Empowerment	20.07.2019	03.08.2019
Offer new improvements based on results	09.09.2019	20.09.2019

Initially, we launched the survey in order to understand the level of employee empowerment in Plexteq. We have followed the technique described in 3.1 and conducted surveys to assess five input variables: job satisfaction, organization-based self-esteem, task importance, assessment of task variety and participation. Questionnaire and analysis of data showed us the following results:

**Table 3.3. Employee empowerment variables assessment results at Plexteq**

<b>Variable</b>	<b>Result, value</b>	<b>Result, level</b>
Job Satisfaction	151	Average level
Organization-based self-esteem	17	Average level
Task Importance	8	Below the average
Task Variety	35	Below the average
Participation	0.39	Below the average
<b>Employee Empowerment</b>	0.339	Below the average

With a help of Fuzzy inference model we set 5 variables for finding out the employee empowerment level. Employee Empowerment rate we got calculated by the model is 0.339 i.e. which corresponds to a “*below the average*” level. According to the algorithm presented in 3.1, this means a corrective actions must be taken in order to increase employee empowerment. In order to increase employee empowerment rate, we aim to set HR projects focused on improving participation, task importance and task variety.

### **Participation**

Currently Plexteq has several practices how to raise participation. Mostly it’s connected to internal and external events: technical meetups, arranging conferences, fun activities. Nevertheless, aiming to increase employee participation we have offered to launch a Mentorship Program which will increase participation, develop Mentors’ leadership skills and help junior Software Engineers to develop technical skills and learn to cooperate with more experienced colleagues.

Mentorship program 1.0. is the the first iteration of mentorship program in Plexteq.



Mentorship program is designed for employees of all levels. The objectives of the program to develop leadership skills of Senior specialists, to increase performance or mentees. Mentorship is introduced as one of KPIs for Senior Software Engineers who are able to share their skills and knowledge with less experienced colleagues. Junior and Middle Software Engineers are mentees who benefit from mentorship and gain support from Senior level Engineers. Mentorship program corresponds to one of the main corporate values i.e. technical excellence. This adds more value and makes this program even more important for Plexteq employees.

Duration of the mentorship program is 6 months. The program has several important milestones with HR involvement:

**Table 3.4. Mentorship program planning**

<b>Milestone for HR</b>	<b>Timeframe</b>
Program Launch	11 Feb. 2019
Introduction	15 Feb. 2019
Training for Mentees	18 Feb. 2019
Training for Mentors	20 Feb. 2019
Check Progress	Per 2 weeks

A Mentor and a Mentee are chosen by Manager who is in charge of resource allocation. HR Manager supports participants with needed information, training and tools. A Mentor and a mentee has daily 20 minute meetings. A Mentor is in charge of setting goals, developing action plan, removing bottlenecks/ stoppers, providing feedback.

Mentorship program brings benefits for all participants. It helps Mentors to develop their leadership skills, whereas Mentees are learning to develop skills further, cooperate with Senior colleagues.

The Mentorship program was built on Warwickshire CIPD Branch Mentoring program [5] and adopted to Plexteq realities. We involved 9 Mentors and 9 mentees into the program, setting Mentorship as one of KPIs for Senior specialists. We analyzed the 2 week reports, Mentor and Mentee feedback forms for 3 months and got the following results:

90% of all participants shared positive feedback on taking part in mentorship program. We checked the performance of mentees and compared it with the performance before the program. Mentees perform better, can do more tasks per day. 85% of Mentors expressed interest in mentorship program and recognized it as an effective tool for gaining leadership skills.

It is necessary to mention that those employees who have time management and self-organization issues are less enthusiastic about mentorship program and find it annoying (10%). Further trainings and 1 to 1 meetings are planned for them in order to remove these obstacles. From the HR perspective, we have found out that HR support is crucial for launching mentorship program in terms of planning, control and assessment.

In the next iteration of mentorship program we plan to attract team members from abroad to get involved in this program.

### **Increasing Task Significance**

Aiming to increase task significance we analyzed the general situation with all of the projects at Plexteq and find out the following important facts with a help of observational method:

1. Lack of information about end users of the products being developed by Plexteq Engineers
2. Lack of information about other projects at Plexteq and their status
3. Not enough information about Plexteq as an organization for its employees.

In order to resolve these points we offer to launch Weekly Digest - electronic journal with important news on product releases, participation in conferences,

interviews with customers, end users and employees, description of product and people success stories.

We expect this solution to help the organization to be more transparent and open, build brand and become more significant for employees.

### **Task Variety**

For keeping task variety on the decent level it is necessary for Managers on the projects keep the track on task variety. For achieving this goal, we offer to develop a plugin that will help to manage with task variety calculation. Generally speaking, task variety is a responsibility of Managers on the projects to track this indicator and do not go beyond limitations. We plan to train Managers how to use this plugin and arrange work accordingly.

### **Next Actions**

For the next employee empowerment actions we recommend to launch initiative focused project. Empowerment is possible to achieve through creativity, synergy and innovation. In order to create encouraging environment for this, Plexteq will support tech initiatives through the program “Plex Ideas”. The person who initiated any idea must take responsibility for the initiative, investigates this idea, creates team, runs the project and makes decisions. Initially the team receives funding for 3 months. The goal of the start-up initiative is to break even. When achieving this goal, the Management starts investing in the start-up.

## **3.3 Project budget planning**

Project budget was planned out of annual turnover losses which, at the moment is estimated to 342 860 UAH (USD 12 245) for a company of 27 employees. It was aligned with executive management to allocate a budget that is 30% of the current

annual turnover losses which resulted as UAH 102 858. Project budget breakdown is shown below.

**Table 3.5. Project Budget**

#	Expense description	Costs, UAH
1	Assessment of employee empowerment	8 218
2	Management training course with involvement of external trainers	58 800
3	Development of a Jira plugin to count task variety	25 840
4	Purchasing a report about average IT salaries from a consulting agency	10 000

Here, handling an employee empowerment measurement research costed 8 218 UAH, which is approximately 304 UAH per an employee.

As shown above, research pointed to a need to improve in three domains - task importance, task variety and participation. In order to improve participation, all senior and leader graded employees were delegated to an external paid training to develop leadership and management skills within mentorship program framework that costed 58 800 UAH.

Improvement of task variety requires in first order simple and straightforward software that allows to calculate this factor by specific person, team and company at whole and company paid a programmer efforts to build such analysing and reporting tool at cost of 25 840 UAH.

As a part of research, it was decided to purchase a report on industry turnover rate for 2018 from a consulting company to verify and compare it with recent turnover rate at Plexteq. The consultancy and report cost 10 000 UAH.

We estimate that applied techniques will allow to improve turnover by 40%. Taking into account that ROI is calculated as

$$ROI = \frac{NetReturn}{InvestmentCost} 100$$

expected ROI in our case would be 33% and calculated as shown below

$$ROI_{ee} = \frac{12245 \cdot 0.4 - 3673,5}{3673,5} \cdot 100 = 0.33$$

### **3.4 Management Decisions**

In the process of writing the research work and implementing solutions, we have noticed several points which should be improved in Plexteq. Internal communication should be improved as well as planning. From the research we see that task importance is highly connected to communication and can influence it. Brand promotion can be helpful right now in terms of further organization-based self-esteem increase. Within the framework of employee empowerment project we offer to launch “Plex Ideas” program that is focused on employee initiative support.

While studying in Lviv Business School within MAHROD program, I’ve gained new knowledge and skills which help me a lot in daily Human Resource work:

- gaining theoretical and practical background of Human Resource Management;
- understanding of how to measure and apply HR metrics;
- connections with HR consulting agencies and coaches;
- understanding how HR can help business and what should be developed for that.

Studying at Lviv Business School has become a truly crucial point in my professional career at Human Resource Management.

### 3.5 Conclusions

Since Employee empowerment has positive relation to job satisfaction, task importance, task variety, organization-based self-esteem and participation, we decided to pay attention exactly to these points.

We have found out that control and measurement play essential role in any HR project. If it is possible to measure employee empowerment, job satisfaction, organization-based self-esteem, participation, task importance and task variety, it means that the Human Resources can control these matters and influence employees through launching projects focused on exact point. We offer fuzzy inference model as a tool for measuring 5 variables to get results on employee empowerment level. In Plexteq current employee empowerment is on the below average level, which requires increasing. After implementing all the planned projects we aim to measure employee empowerment again in order to see the progress. At the current stage we can analyze headcount and turnover rate for the last 3 months. From February till the end of April, 2019 Plexteq staff grew on 17%. Only one employee left the company during this period of time.

Deep analysis of functional structure, its headcount, turnover and related revenue losses, pointed to potential problems with empowerment in Plexteq. Research made as per developed technique indicated relatively low level of empowerment caused by issues with task importance, task variety and participation domains. As a part of corrective actions, the following was done:

- launching mentorship program (aiming to increase participation)
- developing task variety plugin (aiming to increase task variety)
- launching Weekly Digest (aiming to increase task importance)

The results help us find out areas which are least developed in the organization.

## CONCLUSIONS

The recent realities of Ukrainian IT industry are characterized by high competition that heats turnover rate. Software engineer professionals face enormous number of job opportunities with employers willing them to join sometimes effortlessly. These conditions increase turnover rate. Average turnover rate among outsourcing companies was 28% in 2018. The recent conditions create additional tension for emerging IT outsourcing businesses with significant revenue losses caused by turnover that compete on the market with lower rates when selling their services.

There is a number of approaches to address a turnover, including compensation, benefits, better work conditions. Emerging businesses often can't afford competing on the workforce market with higher salaries, which require using different approaches for decreasing a turnover rate and keeping employees satisfied and motivated. Alternative approach for reducing the turnover rate is increasing employee empowerment that addresses turnover issue by improving internal processes, involving employees deeper into company's operational specifics. In the conducted research it was decided to use employee empowerment as a tool for handling turnover rate.

Employee empowerment assessment is complicated. There is a fundamental research in the HR domain that points to 15 factors influencing employee empowerment, however there is no straightforward way to assess overall empowerment rate in an organization. We have determined 5 most influential variables from that research such as job satisfaction, task importance, task variety, organization-based self-esteem and participation and developed a model based on Fuzzy inference and expert knowledge that links them. By means of surveys, questionnaires and management systems like Atlassian Jira, we have collected needed data to check recent employee empowerment level. This approach helped to assess employee empowerment at a whole and research how different input variables/factors influence the empowerment rate.

Together with the model, a technique to adjust employee empowerment in an organization was developed which allows to find out the level of empowerment and specific corrective actions to be taken in order to increase it.

As a result of the research it was found that Plexteq got a *below average* level of employee empowerment, with 3 input variables of low or below average level: participation, task variety and task importance.

Developed technique was applied, and problematic areas alongside with the corrective actions were figured out. Currently Plexteq undergoes a process of applying the corrective actions in order to increase employee empowerment. Among them - launching mentorship program, developing task variety plugin, launching Weekly Digest resource. It is also planned to conduct second round of surveys to check results in 6 months, together with HR metrics (headcount and turnover rate, employee tenure). With a help of developed approach and technique we are able to measure employee empowerment, apply needed actions, measure results and analyze effectiveness of local Ukrainian SME IT companies.



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## APPENDIX

Appendix #1

<b>Hiring</b>	job posts + Recruiter time spent for closing vacancy + interviewers' time spent on interviews	\$100+ \$200+ \$450+\$100  = <b>\$850</b>
<b>Onboarding</b>	arranging working place, HR work, Accountant work, meetings, checkpoints,	\$90+ \$60+\$30= <b>\$180</b>
<b>Learning and development</b>	conferences covered by the company	<b>\$250</b>
<b>No unfilled time</b>	n/a	<b>n/a</b>
<b>Number of Employees</b>	at the present moment	<b>27</b>
<b>Annual turnover rate</b>		<b>28%</b>
<b>Annual cost of turnover</b>		<b>\$12245</b>

**10-item OBSE Questionnaire**  
**by Pierce, Gardner, Cummings, and Dunham**

	<b>Questions</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
	I'm taken seriously					
	I'm trusted					
	I'm important					
	I can make a difference					
	I am valuable					
	I am helpful					
	I count around here					
	I am cooperative					
	There's faith in me					
	I'm efficient					

## Stakeholders Analysis Matrix

<b>Stakeholder Name</b>	<b>Impact. how much does the situation impact them?</b>	<b>Influence. How much influence they have over the situation?</b>	<b>What is important to the Stakeholder?</b>	<b>How could stakeholders contribute to the situation?</b>	<b>How can the stakeholder block the situation?</b>	<b>Strategy for engaging the stakeholder?</b>
CEO	HIGH	HIGH	To have high engagement rate among employees	Support HR to implement employee empowerment project	Be against employee empowerment project, do not give budget for the project.	Show benefits of launching employee empowerment.
Management	MEDIUM	MEDIUM	To arrange highly effective team work; meet business needs, satisfy customers.	Be moderately involved in the employee empowerment project.	Do not take part in the process, ignore HR actions & recommendations.	Explain importance of the project to business, team and company. Explain the role of PM in this process. Provide training course.
HR Department	HIGH	HIGH	To launch employee empowerment project, measure results at runtime, achieve	Support the process, provide effective communication and interaction with	HR can block the project if it's not launched and realized within deadlines; or when the operational part of work is not done.	To divide the project into parts and set certain timeframe.



			decrease of turnover rate.	employees and other stakeholders.		
Personnel	HIGH	HIGH	To understand the importance of his work and ability to influence and benefit from it.	By willingness to cooperate and get involved in Employee Empowerment Project.	Be disengaged and demotivated, not willing to be a part of the process.	Implement the project showing benefits for employees.
Customers	MEDIUM	MEDIUM	It's important to have stability in teams and low turnover rate.	Provide feedbacks on customer satisfaction. NPS (recommendation to other customers)	Ignore and do not provide feedbacks.	Show how customers can benefit from employee empowerment; show importance of feedbacks and that they will impact on improvements in services.
Competitors	MEDIUM	MEDIUM	To be competitive on the market and have more advantages than other company.	To share information about their own benefits, advantages, similar practices. This will help to analyze advantages of competitors.	By implementing innovative solutions.	Possible engagement with competitors can be arranged through arranging job fairs, HR events workshops, HR/IT related events.

