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Calculating the cost for employee turnover in the IT industry in Macedonia by using a web calculator

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ABSTRACT

The little meaning, which HR managers attach to managing the rate of employee turnover, is mostly caused by the lack of specific tools to calculate its impact on the profitability of the companies. This paper presents a universal calculator for calculating the cost of employee turnover, which can be used in developing various effective retention strategies. More precisely, the research focuses on the expense of turnover rate in the IT industry in the Republic of Macedonia, calculated using a web calculator specifically designed for this purpose. This web calculator can be used to compute the cost of employee turnover in any industry, with appropriate minor modifications and adjustments of its elements.

KEY WORDS

employee turnover, IT industry, costs calculation, web calculator, Macedonia

JEL Code: M12, M54, J30, J63

1 INTRODUCTION

“Professionals in human resources are increasingly challenged to take a more strategic perspective regarding their role in the organization. We find that as HR professionals respond to this challenge, measuring HR's performance and its contribution to the company's performance consistently emerges as a key theme. This should come as no surprise. The last decade has been highlighted by an ever-increasing appreciation for the value of intangible assets and the associated trend toward strategic performance measurement systems such as Robert Kaplan and David Norton's Balanced Scorecard. New opportunities for HR professionals, new demands for HR's accountability, and new perspectives on measuring organizational performance have all converged.” (Becker, Huselid & Ulrich, 2001:1)

The behavior of employees is a part of that architecture and it is one source of costs, although it belongs to the ‘invisible’ segment. The expense of employee turnover, having its place, in this group of costs is the central point in our paper. The objective of this paper is not to completely eliminate the turnover cost. On the contrary, this paper is focused on developing a calculator for quantifying this cost, so the HR managers can choose between in order to compare the actual costs to the ones estimated for its decrease or avoidance.

Not knowing the cause of the illness, means not knowing the ways to prevent it or cure it. The calculation of the turnover expense is dealing with the strength of the illness and making a decision how to treat it. Tools against the turnover include programs for retention of the current employees – trainings and development, career paths, attractive benefits, flexibility in working etc. All of them have one thing in common – they directly affect the company's budget. The comparison of those costs will not only lead to the cost reduction possibilities, but it will also enable higher employee motivation.

We decided to focus on the IT sector in Republic of Macedonia, due to its high demand for IT personnel, insufficient number of graduates, as well as the high turnover of employees. Therefore, in order to simplify the research and future findings, the focus of the research in the calculation of the employee turnover cost was put only on the job position *Senior Java Software Developer*. According to the HR managers filling this job position with adequate personnel is quite difficult due to insufficient supply of staff, high company costs for training and development of such personnel and the high rate of their turnover costs. By the help of the HR managers in fifteen IT companies in Macedonia and the detailed research of scientific works on this area, mathematic formula was created as an optimal calculator for calculating the turnover cost in this specific industry. Due to the confidentiality

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of the information needed for this research, the data were gathered through a web-calculator customized for our research needs.

2 EMPLOYEE TURNOVER

The employee turnover is an extensively researched phenomenon in the area of human resources management and organizational behavior, but still there is a lack of specific conclusions and reasons for its appearance. For better understanding of the employee turnover and its costs, it is necessary to define it.

The term turnover has been defined by Price (1989) as the ratio between the number of employees who have left the organization in the relevant time period, divided by the average number of people employed in the organization in that same time period. Often, managers link the term turnover to the whole process of filling a vacancy. Each time a position is vacated in the organization, either voluntarily or non-voluntarily, a new potential employee must go through the process of recruitment, selection, and training. The aforementioned exchange cycle is also known as turnover. (Wood, 1995). A similar definition is given by Macy and Mirvis (1976) according to whom as turnover is considered every single leaving and crossing of the organizational boundaries.

Even though the literature on this topic is full of different definitions on turnover, the most eligible definition in this case is the one given by Mobley. According to Mobley (1982), turnover is a phenomenon where the employee terminates its membership in the organization from which he/ she earns monetary compensation. This definition is of particular importance given the current trends in the labor markets, where it is more common to find employees with limited contracts or interns looking for practical hands-on experience.

Why is the employee turnover rate of such importance to the organizations? The turnover rate is an excellent indicator for effectiveness of the programs and activities of the Human Resources Management, an indicator of the organizational health and wellbeing, the job satisfaction, the morale and the productivity of the employees (Nankervis, Compton, & McCarthy, 1996). Bolch (2001) defines the employee turnover as a movement inside and outside the business, by measuring the extent of changes in the manpower, which is due to approaches to the organization (the total number of employees which have been employed) and due to resignations from the organization (the termination of employment at the initiative of either employees or employers), measured in a certain time span. According to this author, the employee turnover is an important parameter that indicates the overall health of the whole industry and the established level of wages, industrial regions, working conditions, as well as additional benefits for the employees.

It is well known that the organizational stability is highly correlated to the low turnover rate. This leads to the conclusion that the employees would prefer to stay in an organization which has a predictable and stable working environment (Zuber, 2001). This disproportionate correlation also proves correct in organizations that deal with high levels of inefficiency. Their results show a high level of turnover (Mitra, Jenkins, & Gupta, 1992).

As Lucas (1995) points out, the turnover is the highest among the newly employed. He states that the newly employed have a higher perception and expectancies of the new job position, impatience and other personal ambitions, which are rarely achieved in a short period of time. All of this leads to a change in the workplace. The report of the International Labor Organization (2001) confirms the high level of turnover of new employees, which in the US is measured to be 51.7 %, Asia 30 % and in the UK is 42 %.

The turnover of employees is most often calculated by dividing the number of employees who have left the organization and the basic number of job positions in the accounting period. The employees who are being transferred from one job position to another within the same organization are not taken into account when calculating the turnover. Furthermore, the employees who have retired, as well as the ones whose job positions has been ejected from the organizational structure and those who were laid off due to downsizing, are not taken into account.

2.1 Factors Affecting the Employee Turnover

Controlling the employee turnover can be a complex and challenging task not only when defining the workplace, but also when managing the employees. Managers may have difficulties understanding or accepting the turnover in their organizations, because of their "short-sighted" vision and underestimation of the phenomenon. However, identifying the reasons, quantifying the turnover and identifying possible solutions to the higher turnover rates may present themselves as helpful information for the managers who want to make a difference (Mobley, 1982). Many researchers have attempted to identify the important factors that contribute to the increased employee turnover in the workplace. Traditional theories have been focusing on the reason why employees make the decision to leave the organization. Most of the following factors contained in these studies (Bluedorn, 1982; Kalliath & Beck, 2001; Kramer et al., 1995; Peters et al., 1981; Saks, 1996; Black, 2006) continue to be an essential drive for leaving the organization:

- Intent to Leave;
- Job (Dis)satisfaction;
- Role Stressors;
- Poor Employee Training and/or Orientation;
- Lack of Advancement;
- Income;
- Lack of Respect;
- Lack of Responsibility;
- Opportunity to Move.

Torrington, Hall and Taylor (2005), categorized factors which cause employee turnover into four groups: outside factors, functional factors, push factors and pull factors. According to them, outside factors relate to situations where employee’s leave for reasons that are largely unrelated to their work for example, moving away or abroad with a spouse when he/she is relocated. This factor may be unavoidable but can be reduced through the provision of career breaks, form of flexible working and/or children facilitation et cetera. The second-functional factor includes all resignations which are welcomed by both, employers and employees alike. They gave major examples of the functional factors as those which stem from an individual’s poor work performance or failure to fit in comfortably with an organizational or departmental culture. Even though such resignations are less damaging than others from an organizations point of view, they should still be regarded as an unnecessary cost. They attributed this kind of problem to poorly engineered change management schemes and suggested that, improvement in recruitment and selection procedures can help solve such turnover problems. Thirdly, the authors talked about push factors. This is a type of turnover which stems from reasons which are favorable to the employee but which are within the organization or work itself. According to authors, insufficient development opportunities, boredom, ineffective supervision, poor levels of employees’ involvement and straight forward personality clashes are the most common precipitation factors which contribute to the push factors of turnover. According to them, mechanisms such as opportunity to voice concerns can help address all of these by organizations. To them, absence of such opportunities will make unhappy employees start looking elsewhere. The fourth group of factors Torrington, Hall and Taylor explained was the pull factor. These factors are those emanating from outside the organization. These factors include salary levels-that is, employees leaving to broader nations of career development; moving to new areas of work for which there are better opportunities elsewhere; chance to work with particular people; and more practical questions, such as commuting time. It seems that very few people appear to leave jobs in which they are broadly happy in search of something even better. Instead, they say, the picture is overwhelming, one in which dissatisfaction employees seek alternative because they no longer enjoy working for their current employer.

2.2 Calculating the Turnover Rate

The rate of turnover in the department, sector, or even in the entire organization is a good indicator of the morale of the employee and his or her job satisfaction. The formula that follows is adapted from Mercer (1988), who used it in some of his calculations for the cost of turnover.

$$\text{FLUCTUATION RATE} = \frac{\text{NUMBER OF "LEAVERS" (EMPLOYEES TERMINATING DURING CALCULATION PERIOD)}}{\text{AVERAGE NUMBER OF EMPLOYEES}} * 100$$

These rates can be calculated monthly, quarterly, semi-annually or annually. For instance, if there were 25 people who have left the organization over the last month, and the total number of job positions counts 500 employees, the turnover rate would be:

$$\text{TURNOVER RATE} = \frac{25}{500} * 100 = 5 \%$$

Another method for calculating the turnover of employees involves separating the departures of employees that were affected by the organization (controlled departures) from the departures on which the organization could not have any impact (uncontrolled departures). Departures from the organization which cannot be influenced are commonly caused by pregnancy, illness, death, or relocation. The rate of controlled departures is calculated in the following way:

$$\text{FLUCTUATION} = \frac{(\text{NUMBER OF TOTAL DEPARTURES-UNCONTROLLED DEPARTURES})*100}{\text{AVERAGE NUMBER OF EMPLOYEES}}$$

This method contains the most important measures of the effectiveness of certain HR management programs. This is mainly because in this method greater attention is paid to the part of the human resources on which the HR manager could have direct influence (through better selection, training, development, supervision, improvement of working conditions, better salaries, and other opportunities).

2.3 The Cost of Employee Turnover

The current global economy and the increasingly fierce competition is forcing firms to consistently review and enhance their level of efficiency, in order to survive competitive pressures.

Common sense dictates that reducing operational costs while increasing cash flow is an effective business strategy to adopt in response to threats to economic survival. This has led industrial firms to invest substantial resources and efforts in cutting the costs of raw materials and production equipment, as well as in innovation and improving productivity in the areas of manufacturing, technology, delivery service, and marketing/sales procedures. Parallel investments have also been made in the service industries. Cost/benefit analysis has commonly been employed to assess the economic utility of these measures. Yet very little has been done to evaluate the costs and benefits related to the behavior and activities of human resources (Wayne F. Cascio 1991).

Renm (2008), according to a research conducted in October 2007 in New Zealand, wrote that 90.5% of the unemployed have left their jobs on their own desire. In other words, the so-called "war for talents" is finished – the employees have already won. Yet, the battle of retaining the talented employees has just begun and it will be "raging" for quite some time.

Many studies point out one problem of the companies, which is considered to be the key to their survival. This problem is finding and retaining the best employees. But despite that, nationwide, the average annual turnover rate for all companies is 12 % (Mercer, 2014). Another study presents a remarkable conclusion. According to the study, 75 % of the demand for new employees is only due to the need of replacement of employees who have fluctuated (William H. Pinkovitz, Joseph M. and Gary G., 1996).

The employee turnover undoubtedly represents an expense. The problem is not unawareness of the existence of that cost, but its quantification. While the reasons for certain behavior of the employees, including turnover as one of the variables, is examined on a regularly basis, little attention is paid to the calculation of the turnover costs themselves (Cotton & Turtle, 1986; Horn, Caranikas-Walker, Prussia, & Griefeth, 1992; Lee & Mowday, 1987; Mobley, 1982; Schwab, 1991). Few scientific studies exist in this area, all of which are for medium level qualified workforce.

Research show that the typical turnover cost per employee is almost the same as the employee's annual salary. Nevertheless, these calculations can easily reach up to 150 % of annual earnings, and even up to 200 % or 250 % when it comes to managerial positions or positions that require specific qualifications. (Bliss, W. G., 2004)

Several scientists have studied the benefits from the programs for retaining employees. In one scientific article of Huselid (1995), where a sample of 968 companies from various industries has been researched, a strong correlation has been discovered between the turnover of employees and the rise in sales, market value of the company, and profitability. In a similar manner, Heskett, Sasser and Schlesinger (2008) in their scientific paper, point out the existence of strong links between employee retention and increased productivity in a wide range of industries. Identical to this is the research conducted in 76 hotels by Simons and McLean Parks (2001) which reveals that the turnover of employees is the driving force for the hotels' profit.

Woods and Macaulay (1989) have examined the relationship between turnover and employee satisfaction in six different industries (banking, IT, retail, telecommunications, investment management and insurance) and have shown that there is a direct correlation between the perception of the clients about the turnover that occurs inside the company and the pleasure and satisfaction they have as consumers of that same company. Accordingly, customer loyalty is directly related to the turnover of staff. This report notes that "the negative effects of the increase in turnover of employees are not felt exclusively by the HR managers. It is apparent that customers are also directly affected by the turnover. As a result, the turnover, now more than ever needs, to be on the priority list of executives, as it directly affects the profitability of the company.

Many of the managers interviewed by Wasmuth and Davis (1993) said they understand how high the cost of turnover is, but rarely did anyone have strategies for managing it, primarily because they had no way to determine the impact that it has on the threshold of profitability. Using a method adapted from Cascio (1991), Wasmuth and Davis (1993) have calculated the average cost of replacing an ordinary production line worker, which turned out to be \$ 1.500, while the amount rose to \$ 3.000 for a management position. In the late 80's another study estimated that the costs of turnover are on the rise and are currently around \$ 2.500 for an ordinary production line worker (Woods & Macaulay, 1989). However, none of these estimates are focused on a particular workplace. Instead, the researchers had found the average costs for managerial positions and ordinary production line workers generally, without

identifying a specific profile of the manager or worker. In our opinion, even though this is a good starting point, much more can be done about the accuracy of the measures and the usefulness of the collected data.

2.4 Models Used for Calculating the Cost of Employee Turnover

The first step in calculating the cost of turnover was finding appropriate formulas to calculate it. In our opinion, the most influential author in this area is Cascio (1991), whose paper is among the first ones, where he tried to calculate the cost of turnover. The simplicity and applicability of its formula made him one of the most cited contributors in this area.

Cascio (1991), tried to explain the exceptional impact of the turnover by quantifying the cost amount arising from it. His calculation model distributes the cost of turnover in several different categories: costs of the employees leaving the organization, costs of replacement and costs for employee training and development.

The methods used in estimating the cost of turnover can vary, particularly due to the different periods of calculation and the limited literature, which makes direct comparison difficult. Older methods for the quantification of the costs of turnover include only the visible costs, disregarding the invisible costs that are no less important than the previous ones. Such cost is the one which is due to lost productivity while replacement of the employee.

Even though this expense was not originally provided by Cascio (1991), later Wasmuth and Davis (1993) attempted to quantify it while working on Cascio's formula. The purpose of their scientific work was to determine the exact rate of turnover in catering industry, as well as to calculate the cost it causes, in order to assist managers in hotels to develop certain strategic programs for retaining employees. Their model includes the following groups of costs: costs of the employees leaving the organization, replacement costs, costs for employee training and development and the cost of lost productivity, as well as damaged public relations and employee morale.

Later, Hinkin and Tracey (2005) made a software that allows managers to quickly and accurately calculate the cost of employees in the hospitality industry. Based on the work by Cascio (1991) and the joint efforts of Wasmuth and Davis (1993), the next five groups of costs appear in the previously mentioned software: costs of employee's departure, recruitment, selection, training and development and loss of productivity costs. Each cost category contains a certain cost formula by which the total cost of the turnover is calculated.

2.5 Employee Turnover in the IT Industry in Macedonia

Over the course of the last decade, the so-called information society started functioning worldwide. With the rapid development of information science and technology, this new 'society' has emerged as an indispensable part of the development of each country. For small countries such as Macedonia, the only option to develop their economy is to be export or service oriented and the IT industry allows precisely that. Currently the IT sector in Macedonia is at an early stage, but compared to the transition countries of the neighboring region it has the highest growth rate. Many global multinational companies are investing into the country and are opening their offices, meanwhile searching and recruiting educated IT professionals. This is a fast-developing competitive industry, where wages are relatively high and the personnel is pretty scarce (within Macedonia and worldwide). The companies in this sector are facing problems in recruitment of appropriate personnel. The struggle for professionals is even more intensified, if taken into consideration the possibility of working online for large IT companies around the world and flexible arrangements such as freelancing.

Even though the rate of turnover in this sector hasn't been measured yet, according to the statements of HR managers in this industry the turnover is pretty high and costly. Due to the abovementioned the turnover rates in the IT industry need to be reduced to a minimum, which is currently not the case. That is the main reason why this paper is directed towards this study area. In particular, we will explore enterprises dealing with consulting and development of software solutions. From a total of 755 companies in the IT sector, only 407 fall into this area (Statistical Business Register of the Republic of Macedonia 2013). The IT industry, led by developers involves high costs for further training and development, as a result to the rapid changes in technology. It also includes specific work environment and creativity, which is especially important to job satisfaction. Accordingly, great turnover not only causes high costs, but it also harms the job satisfaction and the working atmosphere.

3 RESEARCH METHODOLOGY

Instead of estimating the cost of turnover of a java software developer, it was has been decided to adapt the already made software by Cornell University for the hospitality industry, upgrade it, and complete it so it can meet the needs of this profession and industry. For this purpose the research has been conducted in two phase process. The first phase was carrying out interviews, while the second one was submitting web forms to the interested parties.

The interviews were made on those who are directly involved in the turnover process of one senior java software developer. Its purpose was to obtain feedback from those groups, considering the fact that we are interested in specific employee profile. The group of interviewees was consisted of: Human Resource managers, CEOs, sector managers and employee supervisors. In total we interviewed 60 people (15 HR managers, 15 CEO, 15 sector managers and 15 employee supervisors) and an interview lasted approximately 30 minutes. All of them were already familiar with the turnover cost and furthermore most of them admitted that the turnover is rather high in the IT sector. Surprisingly, all agreed that the employee turnover causes costs and assumed that they are significant, even though none of them had any idea or specific formula for the calculation of the costs, caused by turnover in the company. Presenting the abovementioned formulas, and receiving their feedback, adaptations were made in the mathematic formula for calculating the turnover cost of this job profile.

During the interviews a crucial problem appeared, which at the same time imposed the creation of the web forms. The problem was sharing of confidential information in order to implement the formula and calculate the turnover cost. The formula itself includes salaries, bonuses and other employee data, which was considered highly confidential and resulted into HR managers being skeptical around its disclosure. The situation was further aggravated by the high competition in the IT sector in Macedonia and the deficiency of staff working in this industry. The only way to solve this problem was to anonymously collect data using web form. For that reason, one more phase was needed.

Second phase was collecting information from HR managers using web calculator. Already revised formula transformed into a web calculator, by the professional help of programmers, was the only idea for gathering information. HR managers filled data by themselves, while the program automatically calculated the turnover cost, allowing us to get non- originating inputs. Data collection started on 17th September and was carried out rapidly (one month) due to the simple distribution of the web calculator that had been sent via a link to the IT companies in Macedonia. The forms were sent to 40 HR manages and the response rate was 37.5 %, or more precisely 15 filled out web forms.

4 WEB CALCULATOR FOR CALCULATING THE TURNOVER COST FOR A SENIOR JAVA SOFTWARE DEVELOPER IN THE IT INDUSTRY OF MACEDONIA

The web calculator (<http://form.jotforme.com/form/52674247499369>) includes the following items for calculating the turnover cost, which are divided into five different categories of costs and one additional category called costs for the salaries of the employees. The items included in separate cost categories are as follows:

1. Cost of employees

Prior to making calculations, we asked the managers to anonymously enter the hours worked and the hourly wages in the web calculator for specific profiles of employees who are in some way involved in the creation of the turnover cost (the employee who leaves the organization, the new employee who comes as a replacement, the sector manager, the HRM manager, etc.)

2. Separation costs

The first category of costs is cost that occurs during the employee's departure. This cost is taking into consideration **the administrative procedures** which need to be performed at the departure (checking out of the employee, his/her removal from the payroll, signing of agreements between the company and the employee, etc.). Here, we also included the **exit interview**, whose expense is calculated using the time spent by the individuals involved in the process multiplied by the appropriate hourly wage.

3. Recruitment costs

The second category of costs is the cost required for the recruitment of applicants aimed to fill the vacancy. We firstly calculate the costs which arise directly from the recruitment sources (employment agencies, advertisements in newspapers, magazines, brochures, etc.), but entering the annual amount of the specific **recruitment source** for a particular job. This value is ultimately divided by the number of jobs (employments) in total. The second costs are

related to the administrative procedures (writing a job description, advertising, attendance at career days, etc.). They are obtained when the total required hours are multiplied by the salary for one hour for each of the involved employees.

4. Selection costs

The third category of costs, included in the calculation of the total turnover cost, represents the costs for the selection of already recruited applicants. These include several subgroups of costs. Firstly, **costs for administrative processes** associated with the selection process (appointments, interviews, conducting the process of testing, verification of past experiences and recommendations, etc.). The second subgroup includes the **costs for the applicants' interviews**. The method of calculation is identical to the cost of the exit interview, with little changes in the profile of the involved employees. The third subgroup includes **travel expenses, as well as food and accommodation costs for applicants** which are taken as a lump sum, presented as an average value. To the fourth group belong the **costs for selective tests** such as: personality tests and tests for abilities and skills. The costs in the fifth group are due to **checking the previous experience of applicants**, either done within the organization or the task is given to an external consulting agency. The sixth subgroup consists of **costs for drug tests** which is, again, calculated by multiplying the lump sum for one applicant by the number of tests for the whole employment. The seventh subgroup of costs is the **costs of medical tests**, and finally, the eighth subgroup consists of some additional costs for selection that depend on the organization (cost for uniforms, work permits, bonus recommendations from employees, etc.). Last but not least, this group includes **the cost of the time spent on administrative processes for one employment**.

5. Cost of training and employee development

The fourth category of costs includes the ones incurred due to the need for training and staff development. Generally, when talking about a training, most of the time, it is of informal character – either introduction into the job post during the first month, or on-the-job training that also takes place in the initial period right after employment. In both cases of **informal training**, time of the employees of the organization (the manager or colleague) is being spent. The second subgroup is **formal training** with its so-called **external training costs** which include external trainers. A third subgroup is the **cost for materials and overhead costs** for premises where the training is taking place.

6. Costs due to reduced productivity

The fifth category of costs is the hidden expense caused by lost productivity. This cost is estimated to account for almost a third of the total cost of turnover, making it inevitable for quantification (Hinkin, T. R., & Tracey, J. B., 2000). The first subgroup is the **loss of productivity due to an untrained new employee**. The period of time from reduced productivity to achieving full productivity causes costs which increase the cost of turnover. Two main questions are used for calculating this cost: "What was the productivity of the employee who is leaving (percentage less than 100%)?" and "What is the number of days where the productivity is lower than 100%?". According to Hinkin & Tracey (2000) the learning curve contributes for the productivity of a new employee to increase with linear progression. The second subgroup is the **cost that occurs due to reduced productivity of the employee** who decided to leave and occurs from the time when he decided to leave until the moment he actually does. Again, through the same two abovementioned issues we can estimate this cost. A third subgroup is the **cost for impaired functioning of the organization as a whole** due to the departure of an employee and the new arrival. This includes the loss of time by current employees, each time whenever a new employee has any questions, whether he is asking for help or simply disturbing the coordination of the organization. Finally, as a fourth subgroup of costs appear the **costs caused by errors and defects**, which resulted from the decreased productivity and motivation of the employee who decided to leave, or the new employee due to his lack of experience.

5 RESEARCH RESULTS

Graphic 1: Turnover cost of senior java software developer



Given the different size of the participating companies and the different salary strategy, the cost which we calculated for the turnover of one senior programmer is presented in intervals. We have split the results from the companies into two groups. The first group consists of small companies employing up to five senior developers and their turnover cost ranges from 10.000 € to 15.000 €, with an average cost of turnover of 12.500 €. The second group includes those companies that employ more than five senior developers and their average turnover cost is 18 500 €.

Regarding the structure of the turnover cost, from the five aforementioned categories, the invisible and most neglected expense accounts for the biggest portion. Ranked in first place, the cost arising from loss of productivity, percentage wise, covers more than a third of the total cost and ranges from 25% to 50 % according to the surveyed companies.

The cost of selection is the second largest in the turnover cost structure, with an interval of 20% to 50%. That does not send good signals to recruitment strategies of companies in the IT industry in the Republic Macedonia. In the modern human resources management the rising trend is having more recruitment, but less selection process, because if there is no quality recruitment, no matter how good the selection process can be, a selection of a good employee would be a problem. This is confirmed by the proportion that the cost of recruitment has in the total turnover cost, from 1% to 5%, which places this expense on the fourth place.

The cost, before an employee leaves the organization, has the lowest part of the total cost so it can be found on the last (fifth) place in significance with less than 3% of total cost in all surveyed companies. Contrary to these costs, the cost of training and development occupies a good portion of the total cost. Its proportion ranges from 10% to 20%, which ranks third in importance in terms of the turnover cost. This was expected, given the necessary training that a senior programmer must attend, which mostly seems to arise from the need to adapt to rapid changes in technology.

The average turnover rate in the US industries, concentrating specially on total turnover rate of services is 15 % (CompData Surveys 2013). Assuming that a certain IT company in Macedonia employed 20 senior developers and has such a turnover rate of about 15 %, the cost of turnover would be in interval of 38 000 € (for small companies) up to 56 000 € (for large companies). If we then look back from the perspective of the Republic of Macedonia, the turnover cost for senior developers becomes even more important. Suppose that in the already mentioned 400 companies making software solutions are employed an average of three developers. That would mean that in that year a total of 1200 senior developers were employed. If the IT industry has a similar turnover rate as US of 15 % per year, then around 180 senior developers would fluctuate on yearly basis. Only those developers, even though with a favorable turnover rate, could cause an expense of 2.25 million to 3.6 million € which is almost 6 % of the total export of IT sector in Macedonia (Ministry of Information Society and Administration of Republic of Macedonia, 2013).

How should IT executives view these data? Is this one more rock for Sisyphus to roll up the hill, or the prospect of unrecognized potential? (Waldman, 2004:7) This huge cost of turnover should be seen as a great opportunity, a chance to redirect resources from costs to profit. By improving working conditions, HR managers in every industry can increase job satisfaction, ameliorate retention (thereby reducing turnover costs), while boosting themselves and the system in which they work.

6 CONCLUSION

Based only on the specific profile of senior java software developer, turnover costs represent an expenditure of about 7 percent of the total annual export of IT industry on national level. Stated differently, it would be revenue neutral to offer each departing senior developer (who chose to remain rather than leave) equal to 18 000 € named as a *staying bonus*, or a retention strategy where IT company will offer a *loyalty bonus* of 3500 € to every senior developer.

Furthermore, the calculated turnover cost is undoubtedly less than the actual total cost; the intangible cost components are likely to be financially significant; thus, turnover costs are even higher than the totals reported in Picture 1. Additionally to the already mentioned costs, other non-quantifiable disadvantages of employee turnover exist. These include multiple opportunity costs such as lack of discretionary energy, repetitive training obligations of remaining employees and defensive behaviors related to terminations. Turnover also reduces the morale of remaining employees, adds administrative time, and is disruptive to both organizational culture and structure.

During the interviews one of the managers shared with us a situation where a developer decided to leave the current company because of the low salary and go to another company which offered better terms. The HR manager was convinced that it is worthwhile to increase the salary of a programmer instead letting him leave, but he did not have a tool which would help him to prove it to companies CEO. The created web calculator in this paper would be of perfect use into a situation as mentioned. With its use, the decisions made by human resources managers, whether that is to raise wages or implement training and better working conditions, would be reasonable and empirically justified. The company would have loyal employees, increased job satisfaction and in the same time protection of its intellectual property from competitors.

Only those managers who will understand the importance of keeping the employees of the company by building appropriate systems of compensation, benefits and HRM programs will undoubtedly overcome the competition. The high rate of turnover in any country and industry must not be blindly ignored!

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