Winning the war for talent

Retaining talents for the University of Twente

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Date: September 10th 2009

Summary

This research focuses on scientific talents within the University of Twente, The Netherlands. The University of Twente (UT) employs around 2700 employees of which 60% is scientific staff. Trends nationwide and internationally have led to the situation where talents within the organization are difficult to keep. Intention of this research is to find what the organization can do in order to retain their talents.

Theory

In this research it is stated that talents are seen as individuals with individual needs and motivators that influence their intention to stay with an organization. Basic needs and motivational needs have been distinguished, the first leading to no dissatisfaction and the last leading to satisfaction.

Also systems that can fulfill the needs of talents have been identified. Intrinsic systems can be used to enhance the motivation while extrinsic systems can be used to fulfill the basic needs.

A model is proposed that posits that jobs which fulfill a person's needs are satisfying; those that do not are not satisfying. If the person is not satisfied with his job, it is because the job is not satisfying his needs (Salancik & Pfeffer, 1977, p. 428). All mismatches between a person's needs and the situation will cause dissatisfaction. Thus, when fulfilling all needs with the proper systems a fit is created: employees are satisfied. Satisfaction will lead to more committed people that will be more likely than dissatisfied people remain with the organization: turnover is reduced and retention achieved. Better motivation and more challenges for employees will produce high performance (Locke & Latham, 1990).

Method

A field study has been executed in order to find out what the current and future needs of UT's talent is, whether they feel satisfied with the current job design and work context and whether they intent to stay with UT and are committed. Thirteen interviews have been held among talents, both male and female and both among talents with the age between 30-40 and 40-50. The intention of this field study was to gather as much and in-depth information from talents as possible.

Results

The results of the field study were diverse and indicate that needs, tools and systems should be used on an individual basis. However, in general can be said that UT talents have an intrinsic need for the work itself (research), autonomy, achievement, recognition, working with colleagues and help them develop and finally collaboration or knowledge sharing.

Also, it was found that the needs of the respondents will change along with their career paths; however their most important need (doing research) will not lose importance. The development of management and coaching skills are added as a possible future need to the initial needs of UT's talents.

Furthermore, UT's talents seem satisfied with their job content. They love doing research and are able to place their own research focus, build their own research groups and work with whom they want. However, on individual level they do complain about the amount of management and educational tasks that are placed on their desks which leaves them with less research time. A possible misfit on the individual level between the content of the job; more specific the various tasks within the research job and the ideal content researchers would like to see, has been identified.

Next to that, the current job design matches most of the time with the expectations of the respondents. Especially in the case of the type of work required and the compatibility of colleagues the expectations of the respondents matched most of the time with the reality. Career advancement did not always match with the expectations of the respondents. This is of importance because career perspective was indicated as a very important need for the respondents.

Also, the satisfaction with the work context was analyzed. Overall again UT's talents did seem satisfied with most of the work context, although there were some issues that could be improved. As for example the need for (more) management support: support in finances, personnel issues and administration tasks have been indicated. Several work context items were not indicated as important: benefits and perks, hours required and stress. However, these items did score low on meeting the expectations of the respondents.

Finally, UT's talents do intent to stay with the organization, some for a short while and some even forever. Reasons for not wanting to stay are connected to better career perspective, more challenges elsewhere. The better the offer they will get the more eager they will be to leave the organization. UT can counteract this movement by: making an equal or better offer, make a special deal that the talent will partly work for the other university, offer the talents early in their career perspective.

Several talents have thought of leaving UT in the past. However most of them did not leave in the end. Important needs that make them stay in the end are the position and job situation of their partner and the education of their children.

Next to wanting to stay at UT they are committed to their research group and faculty. Sometimes they even feel committed to the organization as a whole but often this is not the case. This is due to the structure scientific talents are working in and the fact that collaboration over faculty borders is not always stimulated.

UT's talents are both affective and normative committed to the organization. This means that they want to work for UT because they like working for the organization. The organization offers them sufficient job conditions and meets their expectation. Also, they are influenced by obligations they feel having to the organization and the people working in it. The respondents are not committed for continuance reasons: they do have enough other opportunities working elsewhere.

Conclusions & recommendations

Some general conclusions that does improve the fit between needs & systems can be drawn from the results and analysis, these are: *increase the support* for talents, offer transparent and good *career perspective* and *recognize and reward* talents more.

First of all, UT should realize and recognize that research is the driver of their talents: this motivates them most. Therefore, talents should be supported with several tasks that are related to management: financial & personnel. Also, basic support (data cleaning) could be offered in the form of student assistants that will reduce their work load.

Second, UT should offer a transparent and ambitious career perspective. The main reason why talents leave UT are because of better career perspectives offered by other universities or because they feel that their contribution is not valued enough at UT. Creating transparent career paths with strict evaluating and progression points could be a solution. These career paths should be customized to the talents. Also, a fixed job position should be offered to talents, this is highly valued by UT talents and seen as a form of recognition.

Third, UT should recognize and reward its talents more. Talents feel that this is not the case in the current situation. Recognition and reward can be in the form of sabbaticals. Offering talents to go to international conferences and to include them more in faculty and organizational issues, when asked.

But most of all, UT should give individual attention to its talents and strive for tailor made support. All improvements mentioned earlier should be applied on an individual basis. Making sure that every talent within UT will have an individual based need and system fit. This will increase the satisfaction and commitment of the talents and will in the end hopefully retain the scientific talents for UT.

Preface

This research report has been written as a conclusion of my Master study Business Administration – HRM of the University of Twente. In this thesis I report on how UT will be able to retain their talented scientific staff.

Writing this thesis has been a process that took more or less six months. Months that I have spend at the personnel department of the University of Twente. The department informed me well about their policies, their talents and their wishes.
The support I found from within the department has been a wonderful experience. Several people have contributed to this experience. First of all I would like to thank Arjan Brunger who agreed on this particular research and provided me with a job for two days a week as well. Furthermore, I would like to thank Annelies Leussink. Annelies, I am very grateful for all the things you taught me, our personal talks and the time we laughed together. I feel these are things I will use trough out my working life! Finally, I would like to thank Sofia for arranging all my interview appointments. Without your experienced and professional help this would not have been so easy.

Secondly I would like to thank my supervisors from the University of Twente, dr. Martijn van Velzen and dr. Ir. Jan de Leede. Both of them have provided me with detailed comments on my thesis. Because of their critical opinions, their time spend on reading my drafts and explaining me how to improve them I have experienced this period as a very valuable one.

Finally I would like to thank Steven and my parents for their ongoing support. Not only during the writing of my master thesis but throughout my study. You have always had faith in me, which gave me the power to perform at my best!

Enschede, September 2009

Janine Rebel

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1. Introduction

Currently and in the coming years talented employees are difficult to find and might even become scarce. According to various authors this leads to a war between organizations for the brightest and the best people. The organization with the best policies and tools to hire and bind employees should be able to win this war and become a dominant partner in its field (Michaels, Handfield-Jones, & Axelrod, 2001) (Frank & Taylor, 2004) .

1.1. Motive

The University of Twente (UT) is a small technological research university in the east of the Netherlands and employs around 2700 persons: both scientific staff (59%) and general staff (41%). Among scientific staff are professors, associate professors, assistant professors and PhD's. Their core activity is education and research.

According to several P&O officers the problem is, for some years now, that the university is struggling to fill scientific positions especially in the technical fields. Also, coming years 20% of UT's personnel database will retire: consequently these positions need to be filled. Furthermore is acknowledged that once talented researchers are hired, they are difficult to retain.

These problems are not preserved for UT only, also other universities cope with them as has been acknowledge by Looise & Torka (2007). They state that particularly within the academic sector the workforce will firmly decline because of falling interests, the ageing problem and 'brain drain'. According to a report from the committee Van Vucht Tijssen this led in 2008 to a shortage of scientific staff of 12% (Looise & Torka, 2007, p. 28). Although there are no figures found to confirm this shortage of 12%, within UT there is a shortage of scientific staff. A mean of 20 vacancies a month is an indication which underlines this shortage.

On top of these trends, this year UT expressed the ambition to become an excellent international university where excellent research and education is combined. Talented employees play a key role to realize these ambitions. It is stated that talented employees need to be attracted, retained and developed (Route 14, 2009).

This idea can be carried back to the Human Capital Theory. The basic idea behind human capital theory is that people, rather than money, are the driving force of economic and social growth and urban development. The key to regional growth lies in concentrating a critical core of highly educated and productive people: knowledge workers (Yigitcanlar, Baum, & Horton, 2007).

The international ambitions of UT combined with the above mentioned trends (falling interests, ageing problem & braindrain) ask for a central position of talent management. Talent Management has been described by Pascal (2004, p. ix in: Lewis & Heckman (2006)) as: "*managing the supply, demand, and flow of talent through the human capital engine*". Branham (2005) uses the cycle of talent management to explain that talent management is about: attract, select and engage employees. UT is especially interested in the last step: engage, or in other words retain employees. Therefore this research will focus on retaining talented scientific employees for UT.

1.2. University of Twente – PA&O department

Within UT the PA&O department is responsible for the Human Resource policies and operations. PA&O aims to contribute to the realization of UT's goals. Each year the HR department writes a year plan in which the focus of the coming year is stated. This year the priorities are: Talent management, Recruitment and Selection, Mobility Training Development and Support & Women.

Within the Route '14 process the need for talent management, more specifically a new talent policy was identified. A team was formed (consisting of the president of UT, two Deans and an HRM policy maker) to generate an outline which will serve as a basis for a new talent policy. The overall idea is to provide talented employees within the university with extra attention and benefits. This, in order to attract and retain talents for UT.

UT has first of all started to identify characteristics for talented scientific staff. Overall the idea is that a scientific employee is identified as a talent when he or she is expected to become professor in the (near) future. The work profile (UFO profile) of a professor is used to see if the employee has this potential.

All faculties are asked to go through their personnel files and identify those employees that are expected to become professor in the (near) future. Employees that are at a specific level in their career and reached their potential also are identified.

Next to this identification a second tool is used. The HRM department has described characteristics that are used to identify talents both in general as specifically for scientific staff. These characteristics can be found in appendix C. This selection process will be used accordingly, in order to end up with a pool of talented scientific staff that will be offered special (development) programs, benefits and career paths.

1.3. Retaining talents

The retention of employees is for several reasons of importance for an organization. In short three statements why organizations should pay attention to the management and retention of talents can be distinguished.

First of all human capital is, more than in any other organization the main asset of a university and thus the main source for the creation of competitive advantage. People are seen as key drivers of success (Farley, 2005). Even in a global economic downturn which is characterized by downsizing and layoffs, organizations still need to retain key knowledge workers. However, in order to increase the competitive advantage, only having employees is not enough: they should be managed properly.

Secondly, costs are of importance. Losing employees and educate new ones is expensive for organizations. Talent and retention management can reduce those costs. In the short term, laying off or losing people is more profitable compared to retaining employment security. However, losing talent is very expensive (Cappelli, 2000). As Amos and Weathington (2008) formulate: "*employee turnover is costly. Turnover costs time and money for employees to separate from an organization and for an organization to recruit and train replacements*". Thus, by managing talent organizational costs can be reduced. When the cycle of talent management is well organized turnover costs will be minimized.

And finally talents need to be managed because the world and the people living in it is changing. Demands change therefore as well, companies have to adapt to these changes. Investing in talents is only justifiable when the future production will increase because of these talents (Lepak & Snell, 2004). Pfeffer (1995) furthermore argues that in the end the organization needs and recognizes the advantages that specialization of talents brings (Pfeffer, 1995). Talent management is thus important in the way that it tries to find the right employment and development strategy for a specific situation or goal.

All three arguments build the central argument within this research that talented employees are critical to the organization and should therefore be retained. The starting point of this research is thus that human capital is a critical resource for an organization. When the organization retains and manages the human capital optimally this can lead to value creation and long term competitive advantage.

This being said, the value of the 'not talented' employees within an organization is of course as important as is the value of talents. As Thorne & Pellant (2007) argue, no organization should focus all its attention on developing only one part of its human capital. Not only because these employees make out the majority of the company's assets, but also because this will negatively affect their motivation and thus the performance of the company as a whole.

1.4. Talents

Human capital forms the core business of a university. Without talents universities are not able to initiate research or practice research on an international level. Losing one is therefore a big loss and should be prevented: talents should be retained.

However, who are those talents? Within this research the focus is placed on retaining scientific talented employees. A talent is defined as:

A talent is an individual with unique knowledge, experience, skills, behavior, norms, values and personality who provides the organization with something extra that 'normal' employees do not provide and that will improve the performance of the organization.

This statement has been derived from various authors that have different views on who exactly talents are. The definition that is used in this research comprises two main vies. Firstly, the view that every individual possesses a talent and secondly the view that the real talents are the ones that bring 'something extra' to the organization (van der Sluis & van de Bunt-Kokhuis, 2009); (Michaels, Handfield-Jones, & Axelrod, 2001); (Thorne & Pellant, 2007); (Brown & Hesketh, 2004). This something 'extra' has, within UT, been specified as: the ability to acquire funds, a cum laude doctors' degree, winning prizes and international experience.

1.5. Relevance

This study has both scientific and social relevance. As was described in the first section many organizations try to attract and retain talented employees. Talents are one of the most important resources nowadays for companies. This research aims to verify whether the retainment of talents is executed effectively. Is the focus placed on the right needs, what actually does motivate employees to stay? And which instruments should be used to retain the talents? This research could be of help in the future for companies (at least for one: UT) that struggle retaining their employees and help them to make the right choices. It could open their eyes and let them see that there are more ways to retain talent than might have been assumed.

This research has also scientific value because it aims to combine several well known theories in a new model. This model is also tested within UT. Possibly new insights were developed that can be used for further investigation or development of talent retention literature and theories. Also, insight in the practical application of these theories is a result.

1.6. Research question & Research objective

This research will deal with how UT can retain talented employees. Retention drivers, employees' needs and motivators are the focus of this research. These factors might influence the intention of talented employees staying with the organization. The main focus in this study is on scientific staff (no specific positions) because they constitute the core business of the university (education and research): they are the main capital.

From the above follows that the main research question for this research should be:

What should the University of Twente do in order to retain their talented scientific staff?

The research goal is to advice the PA&O department which instruments should and could be used to retain their talents. These instruments can furthermore be integrated in a UT wide retention policy which will increase the competitive advantage of UT both nationally and internationally. Ideally it will furthermore help achieve UT's ambitions and solve the staffing problems of today and tomorrow.

1.7. Organization of this thesis

The first chapter provides background information on the research topic. The following chapter will comprise the theoretical background which will form the basis of the research design. This design and the methodology used will be dealt with in chapter 3. Chapter four contains the literature study that will be used to answer the theory based questions. Chapter 5 presents the results of the field study and chapter six will provide an analysis of these results. Chapter seven contains the conclusion in which an answer is formulated to the central research question. This research will be finalized with limitations and recommendations for UT.

2. Theoretical framework

As follows from the introduction, retaining talents is the main focus of this research. In order to build a theoretical framework around this focus, theories with a basis in human capital and human behaviour will be used. The theories used are developed in the sixties and seventies and based on blue collar workers. However modern literature and theories are often based on these ground theories, which is why these theories form the foundations of this framework. In the literature study extra attention will be given to (recent) literature, specific for talents and knowledge workers.

2.1. Work motivation

The motivation of talents is a point of interest when focusing on talent retention. Atkinson (1964) defines motivation as "the contemporary influence on direction, vigor and persistence of action" while Vroom (1964) defines it as *"a process governing choice made by persons … among alternative forms of voluntary activity"* (Steers, Mowday, & Shapiro, 2004, p. 379). In the end most definitions deal with factors or events that influence, direct and maintain specific human behavior over time and how this affects the organization an employee works for.

Within the motivation theory three streams can be distinguished: the content theories, process theories and design theories. The design theories (how) binds the content (what one wants) and process (what should be kept in mind) theories.

Models, characterized as *content theories'* principal aim was to identify factors associated with motivation. The need hierarchy theory by Maslow (1943) is one of them. Maslow (1943) distinguishes five needs that are organized in hierarchy (see appendix A). He further argued that the first three needs represent deficiency needs and the two elements at the top represent growth needs that relate to individual achievement and the development of human potential (Steers, Mowday, & Shapiro, 2004, p. 381). Especially the top of the pyramid is therefore of importance for retaining talents.

McClelland (1961, 1971), ignored the concept of a hierarchy and focused instead on the motivational potency of several clearly defined needs, including achievement, affiliation, power, and autonomy. The concept of hierarchy was not ignored by Alderfer (1969) and his ERG (existence, relatedness, growth) theory. However he did argue that his three stages of needs could be strived for at the same time and that the order of needs is different for every individual.

While Maslow, McClelland and Alderfer focused on the role of individual differences in motivation, Herzberg (1966) tried to understand how work activities and the nature of a job influences motivation and performance. Herzberg furthermore suggests that job satisfaction and job dissatisfaction are not opposite to each other (Herzberg 1966 in: Herzberg, 1987). Job satisfaction is increased by motivational factors which are intrinsic to the employees while job dissatisfaction is decreased by hygiene factors which are extrinsic to the employee.

Around 1960 a new approach to work motivation emerged called *process theories*. These theories focused on characterizing the processes underlying work motivation. One of the best known theories within this period is the expectancy theory of Vroom (1964). He argued that employees rationally evaluate work behaviors and outcomes and choose the one they believe will result in most valued rewards and outcomes (Steers, Mowday, & Shapiro, 2004).

Porter and Lawler (1968) expanded Vroom's work to recognize the role of individual differences. Another important theory within the process theories is the equity theory which explains how employees respond to perceived unfairness in the workplace. For example, Adams (1963) argued that both conditions of underpayment and overpayment can influence behavior.

Goal setting theory furthermore emerged in the late 60's, based on the discovery that specifying targets for behavior enhanced task performance (Locke, 1968 and Steers & Porter, 1974). Locke showed, based on numerous studies, that goal commitment, goal specificity and goal difficulty enhanced task performance (Steers, Mowday, & Shapiro, 2004).

A final important theory of the process theories is the self-efficacy theory of, among others, Bandura (1977). Bandura proposed a social cognitive theory, suggesting that self-confidence lies at the heart of an individual's incentive to act or to be proactive. And that self-efficacy plays a role in work related performance (Steers, Mowday, & Shapiro, 2004).

The models and theories from the sixties and seventies have been used to further develop these theories. Some have a strong focus, as is the case with the *design theories*. The best known theory within design theories is developed by Hackman & Oldham (1976) which is called the job characteristic theory. This approach emphasizes the importance of a fit between characteristics of the job and characteristics of the jobholder. When a match is present, job characteristics theory predicts desirable outcomes for both the employee and the organization (Kulik, Oldham, & Hackman, 1987).

An overview of the several motivation theories, their implications for managing talents and their authors can be found below:

Theory type	Theory	Implications for managing Talents	Authors
Content theory	Need Hierarchy Theory	Self- Actualization and intrinsic needs lead to motivation.	Maslow (1943) &
	Theory of Needs	Needs are non hierarchical.	McClelland (1961, 1971)
	ERG Theory	Needs vary per individual, are hierarchical but can be strived for simultaneous.	(Alderfer, 1969)
	Motivation Hygiene Theory	Motivational needs are intrinsic and lead to job satisfaction. Basic needs are extrinsic and lead to no job dissatisfaction.	Herzberg (1966)
Process theory	Expectancy Theory	An individual chooses most rewarding work behavior.	Vroom (1964) & Porter & Lawler (1968)
	Equity Theory	Conditions of over/ under payment influence behavior.	Adams (1963)
	Goals Setting Theory	Specifying targets for behavior enhances performance.	Locke (1968) & Steers & Porter (1974)
	Self- efficacy	Self confidence plays a role in performance.	Bandura (1977)
Design Theory	Job characteristics Theory	A fit between characteristics of a job and the employee leads to desirable outcomes.	Hackman & Oldham (1976)

Figure 1: Overview motivation theories

2.2. Motivation – Retention link

Analyzing and evaluating the motivation theories mentioned in section 2.1, three of them are of special interest: the needs theory by Maslow, McClelland and Alderfer, the Two Factor theory by Herzberg and the Job Characteristics Theory by Hackman and Oldham. The need *theory*: primarily the top two needs (self- actualization and esteem needs) that are particularly applicable to talented employees. Also the *two factor theory* will be used: the importance of the environment (work context) and hygiene and motivation factors for employees. Furthermore the *job characteristics theory* is used because this theory focuses on the design of the job which can enhance the motivation of talents.

In 1943 Abraham Maslow wrote an influential paper that set out five fundamental human needs and their hierarchical nature: a need should be fulfilled before moving on to the next level. The top two needs: esteem and self-actualization needs, are of interest for talents because they represent growth needs that relate to achievement, development and human potential. These needs will be further explained.

First of all *esteem needs*: people in our society have a need or desire for a stable, firmly based, high evaluation of themselves, for self-respect, or self-esteem and for the esteem of others (Maslow, 1943). This self-esteem, when firmly based, is based on real capacity and achievement of people combined with respect to others. Satisfaction of these needs lead to feelings of self-confidence, worth and strength.

Second and top of the pyramid is *self-actualization*: this means that what a person can be, he should be. This need has to do with the need for self-fulfillment and the ability to become what a person is capable of. Talented employees have to be challenged to perform at their best and develop their skills until full potential has been reached.

As was stated earlier, criticism on Maslow's Hierarchical Theory is that needs are not hierarchical (McClelland, 1961) or can at least be strived for at the same time and that needs are not universal but vary for each individual (Alderfer, 1969). Thus, current research on job satisfaction and job redesign generally proceeds from the premise that different individuals have different need strengths and, therefore, will respond differently to the same job characteristics (Salancik & Pfeffer, 1977).

This research will use the following starting point: talents have esteem and self-actualization needs and fulfilling those needs will lead to satisfied/ motivated employees. These needs can be strived for simultaneously and are not universal but will vary per talent.

Another important theory for this research is the motivational need theory developed by Frederick Herzberg (1987). Herzberg distinguishes hygiene and motivational factors. Using hygiene factors will lead to no job dissatisfaction while motivational factors will lead to job satisfaction (Herzberg, 1987).

Basically, Herzberg (1987) draws a distinction between *intrinsic* and *extrinsic* rewards. When the *extrinsic* rewards (hygiene factors) are not used employees will be dissatisfied and unhappy with the job and possibly leave the organization. These hygiene factors (for example: more salary) lead to movement (for example: working harder) and are short term oriented. To make it work in the long run, the organization should constantly enhance the extrinsic rewards for more movement (Herzberg, 1987).

The *intrinsic* rewards (motivational factors) have long term effects on employees' attitudes. For example by giving them more interesting and challenging work which will increase employees' motivation (Herzberg, 1987). Using motivational factors can lead to satisfied employees and possibly to retention of employees.

Herzberg finally argues that the motivational needs should be used to design work that motivates employees which he called: job enrichment (Herzberg, 1987).

Concluding, using intrinsic rewards will lead to motivated talents that are satisfied with their job. Using extrinsic rewards will not lead to motivated talents but will lead to no dissatisfied talents. Thus, both hygiene and motivational factors should be used to satisfy and retain talents.

The job characteristics theory, which is part of the motivational design theories, deals with the design of a job. This approach emphasizes the importance of a fit between characteristics of the job and characteristics of the employee (Kulik, Oldham, & Hackman, 1987).

Oldham & Hackman (1987) argue that there are five core job dimensions. These core dimensions will lead to three psychological states which lead in turn to four personal and work outcomes: high internal work motivation, high growth satisfaction, high general satisfaction and high work effectiveness. In order to achieve the desirable outcomes, Hackman & Oldham (1987) argue that all three psychological states must be experienced by an individual.

Three characteristics of jobs that are especially powerful in influencing the experienced meaningfulness of work are: skill variety, task identity and task significance. Hackman & Oldham (1987) also list autonomy and job feedback as important characteristics that lead to feelings of personal responsibility for work and information about whether tasks are carried out effectively or not (Kulik, Oldham, & Hackman, 1987).

Within this theory there is finally an important assumption that only people who are competent to perform the work, that want to achieve growth satisfactions at work, and are relatively satisfied with the work context will thrive on work that is high in motivating potential. These conditions are often found among talented employees (Kulik, Oldham, & Hackman, 1987).

Thus, in essence the theory predicts that when talents find their work meaningful, experience personal responsibility for work outcomes, and have regular, trustworthy data about how they are performing, then they will both perform well and feel good about it (Kulik, Oldham, & Hackman, 1987).

2.3. Proposed framework

Integrating the three theories results in a framework that can be found in figure 2.
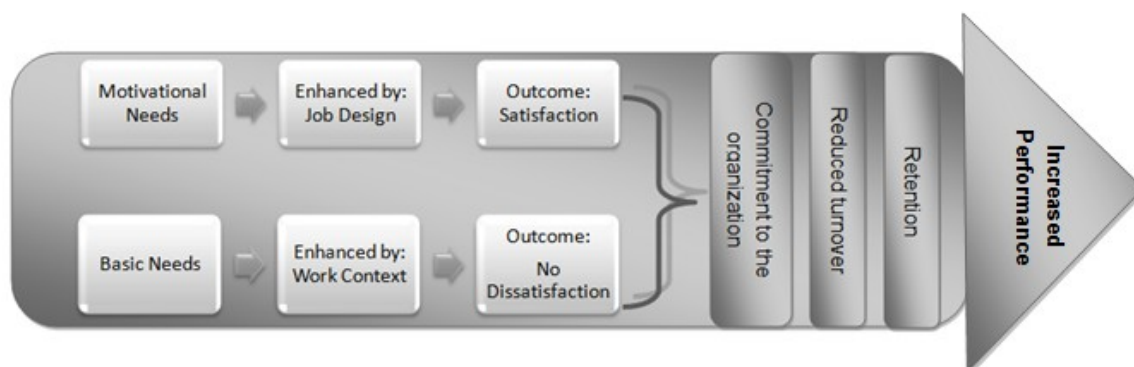
Figure 2: Proposed framework

This framework depicts that value can be created by combining Maslow's & McClelland's need theory and Herzberg's two factor model. The basic needs of Maslow (1943) & McClelland (1961) are combined with Herzberg's' hygiene factors. These factors should be present in an organization and can be enhanced with the help of the overall work context. These factors being, among others, salary, status and job security. This will counteract employee dissatisfaction and prevent employees from leaving.

Maslow's self esteem and self actualization phase is combined with Herzberg's' (1987) motivational (intrinsic) needs that increase the level of satisfaction of employees. These motivational needs can be enhanced with the help of the job design which follows from Hackman & Oldham's (1987) job characteristics theory. Job design tools being, among others, task achievement, recognition, intrinsic interesting tasks, increased tasks responsibility, advancement and possible growth.

It is furthermore expected that by enhancing both job design and the work context, talented employees will be more satisfied, committed and motivated to stay. This will positively affect the turnover numbers of the organization: retention of talents is achieved. Because retention has a positive influence on the performance of an organization the overall performance of an organization is expected to increase as well.

3. Methodology

This chapter describes the research strategy and research sample used in this research. Furthermore the research design and instruments, the selection, interview questions and the operationalization of important concepts in this research is elaborated on, followed by the procedure.

3.1. Research strategy

In order to answer the central problem formulation: *What should the University of Twente do in order to retain their talented scientific staff?* the following research questions have been defined:

1 According to the literature what are talent's needs?
2 What types of (reward) systems are and should be used in order to retain talents?
3 What are the current and future needs of UT's talents?
4 Are UT's talents satisfied with the current job design and work context?
5 Are UT's current talents committed to stay?

A research strategy has been developed on the basis of the information from questions 1 and 2. Interview questions were furthermore developed in order to find out what the current and future needs of UT talents are and whether they are satisfied with the current situation. Also talent's commitment with the organization was studied.

3.2. Research sample

As has been stated in the introduction, the HRM department has described characteristics that are used to identify talents both in general as specifically for scientific staff. These characteristics can be found in appendix C. This selection process has been used accordingly, in order to end up with a pool of talented scientific staff: the research sample for this research.

The research sample this study used is based on scientific staff that was able to acquire grants in the (near) past. This information could be easily adapted because it was filed within the university and freely accessible. It should be noted that only Veni, Vidi, Vici grants[1] or Spinoza[2] prizes has been focussed on. Although one could argue that other prizes/ grants or big projects could also indicate that an employee is talented, only the names of Veni, Vidi, Vici and the Spinoza winners could be easily obtained and were used. Half way the research was found that this group of respondents were almost all in the age group 40-50. This research intends to interview a very diverse group of talents. Therefore a younger talent group in the age of 30-40 was selected by the faculty P&O advisors. Conform the UT checklist, these young talents were indicated as Tenure Track worthy and were therefore added to the original research sample. In total the research sample consisted of 29 respondents.

3.3. Research design and instruments

3.3.1. Research method

The first two research questions will be answered with the help of a literature study: studying relevant (recent) literature on talents, their needs, rewards and motivation systems. Questions three, four and five will be answered with the help of field study based on in depth interviews.

Concerning the field study, different types of research methods could have been used. A distinction that can be made is between qualitative and quantative data. According to Babbie (2004) this is essentially the difference between numerical and nonnumerical designs. Both types of data are useful for different research purposes (Babbie, 2004, p. 23). The purpose of this research was to collect as many motivators and needs from scientific talents. Insight in their motives to stay with the organization or reasons why they would leave and how the organization could prevent this from happening was a goal as well.

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[1] The Netherlands Organization for Scientific Research (NWO) created three forms of grant to support excellent researchers: Veni (for researchers who have recently completed their doctorates), Vidi (for experienced researchers) and Vici (for researchers of professorial quality (www.nwo.nl).
[2] The Spinona prize is awarded by the Netherlands Organization for Scientific Research (NWO). The prize is the biggest Dutch award in science. Each researcher receives two-and-a-half million Euros to freely devote to his or her research. The researchers receive the prestigious prize for their outstanding, pioneering and inspiring scientific work (www.nwo.nl).

Therefore, within this research a qualitative design was used in order to come up with in depth data on which several scenarios could be based. More specifically, semi-structured in-depth interviews were used. With the help of this method, it was possible to really get to the intrinsic motivations of employees and ask extra questions when necessary to verify or clarify the information. The interview questions were furthermore structured around themes that provided answers to the research questions used in this research.

Quantitative data collection has not been used because this type of data could only be retrieved on a very small scale: there are not many talents within the university. Drawing conclusions on such a small scale would have provided an unreliable basis for generalized conclusions.

3.3.2. Selection

Another point of attention was the selection of the respondents. As was mentioned earlier, respondents were selected on the basis of the fulfillment of one of the characteristics identified by UT (acquiring grants). An overview of the employees that acquired grants, their background and gender was made and 18 out of 29 talents were selected as respondents.

This selection intended to guarantee interviewing, in a short time span, a diverse group of talents. Both female, male, young, old, technical, non-technical, national, international characteristics was focused on.

Those employees that acquired grants and were selected were invited for an in-depth interview. All respondents received an e-mail explaining the research goals and inviting them to be interviewed. After a week all respondents received a phone call to make the actual appointment for the interview. In total 13 appointments have been made.

The interview took place in the office of the respondents and was mostly executed in Dutch unless the respondent was not able to speak Dutch. These interviews were held in English. Almost all interviews took about one hour, some more, some less. A week after the interview took place all respondents received the minutes of the interview and were asked to authorize them for use.

3.4. Interviews

The questionnaire was organized around six themes: current needs, future needs, satisfaction with work context, satisfaction with job design, intention to stay and commitment. These themes are based on the sub questions used in this research that stem from the central research question. The complete interview format and the interview questions can be found in appendix D and E.

Central Research Question: What should the University of Twente do in order to retain their talented scientific staff?						
	Subquestion 1: What are the current and future needs of scientific talents within the University of Twente?		Subquestion 2: Do the needs of scientific talents within the University of Twente match the current job design and work context?		Subquestion 3: Are UT's current talents committed to stay with the organization?	
	IQ 1: Current Needs	IQ2: Future Needs	IQ3: Satisfaction with work context?	IQ4: Satisfaction with job design?	IQ5: Intention to stay	IQ6: Commitment
Questions						
1. What needs do you currently have in your job?	X					
2. Are those needs met when working for UT in your current position?	X					
3. Which of your current needs are met and which are not?	X					
4. Could you identify which of your current needs are most important to you?	X					
5. Which of your current needs that are being met by the organization motivate you?	X					
6. Are the other needs you mentioned less important to you?	X					

Figure 3: Interview questions

I experienced the majority of the interviews I had with the respondents as very easy going, spontaneous and open. In general all the respondents felt that attention for talents within the UT was a good thing and were willing to cooperate. Also, the majority of the respondents liked talking about their experiences and careers. Some researchers could easily formulate answers to the interview questions while others found the questions difficult to answer. A reaction after one of the interviews from one of the respondents was an email thanking me for making the respondent aware that it was time to take some action. What I found very motivating as well is that every respondent was very keen to be informed about the results of the research.

3.5. Operationalization

The most important concepts (themes) of this research are operationalized in this section.

3.5.1. Current and future needs

Current and future needs of scientific talented employees have been inventoried, current needs meaning needs that talents have in their current work situation. Future needs meaning needs that they might have in the future when moving on in their career or because of a changing family situation.

3.5.2. Satisfaction with work context, job design & job content

As was described in the theoretical framework the work context can be seen as all the items that are related to the work or job but not directly. Salary, work environment, lease car, free days etcetera are examples.

Job design is directly related to the work or job. This can be the responsibility that one has or the freedom to plan or take initiative. In this research Lawler's (1969) argument that job design changes can have a positive effect on motivation, because they can change an individual's beliefs about the probability that certain rewards will result from putting fort high levels of effort, is used in this research.

Job content is, according to Lawler (1969) the critical determinant of whether employees believe that good performance on the job leads to feelings of accomplishment, growth and self-esteem; that is, whether individuals find jobs to be intrinsically motivating.

3.5.3. Intention to stay

The intention to stay or leave the organization will also be an interview topic. Here a talent should be able to identify whether he or she will be working for the organization in the near future or will possibly leave the organization. Also the reason for leaving or staying is of importance here.

3.5.4. Normative, affective and continuance commitment to work

For this study normative, affective and continuance commitment towards the organization is used from the study of Meyer, Allen & Smith (1993). Affective commitment is based on emotional attachment: someone is working for a company because they 'want to'. Job conditions and met expectations will lead to affective commitment.

Continuance commitment is based on the need for salary or because no other job was available: because they 'have to'. Benefits accrued and jobs available will lead to continuance commitment.

Also there's normative commitment based on the values of the employees: they work for the organization because 'it is the right thing to do'. Personal values and felt obligations will lead to normative commitment.

3.6. Procedure

In this research five phases have been distinguished.

1. The first phase was a pre selection of talented employees on basis of grants attained and information from the personnel officers within the faculty.
2. The second phase was an interview with a selection of the talented scientific employees. The data was gathered by interviewing respondents, taping their comments and transcribing those.
3. The transcripts have been analyzed and used to make an analysis. Especially links between answers and abnormalities were of special interest. More in-depth information on the needs and motivators of scientific talents within a university was the result.
4. The information has been used to draw recommendations for UT how to motivate, commit and consequently retain their scientific talent.
5. In the end these recommendations were discussed with the talent project team and P&O advisors in order to see whether the scenarios can be used in the UT organization.

4. Literature study

This chapter aims to answer the first two sub questions that were formulated in the methodology chapter using available and relevant literature. What are talents' needs? & What type of systems should be used to retain talents?

4.1. What are talents' needs?

As was indicated in the theoretical framework two general types of needs can distinghuised: motivational needs and basic needs. Those that are said to influence the performance of talents will be explained and ordered into extrinsic and intrinsic needs. Extrinsic needs being needs that have to do with the work context, intrinsic needs being needs that are related to the job and task itself. Drawing some more attention to the needs of specifically scientific talent within an organization Drucker's definition of 'knowledge workers' is of importance. "*Employees who carry knowledge as a powerful resource which they, rather than the organizations, own* (Drucker, 1989). These knowledge workers (talents) will be the focus of this research.

4.1.1. Extrinsic needs

According to Zingheim & Schuster (2008), studies since 1992 about what talents want, have indicated that engaging and keeping the best talent depends on providing both *pay based rewards and performance based rewards*. This implies that employees have a need for rewards based on their performance. These rewards can for example be increased pay, a lease car, options, extra time off etcetera.

According to Pfeffer (1995) people are furthermore motivated by and have a need for *recognition, security,* and *fair treatment. Also, receiving positive feedback, having senior people showing an interest in ideas* and *status* are often mentioned needs. Although these needs are not directly pointed at the job or tasks of an employee, these extrinsic needs seem to be important factors influencing why talented people stay with an organization (Thorne & Pellant, 2007). Herzberg (1987) adds *work conditions*, *security* and *company policy and administration* to the extrinsic needs, or as Herzberg defines them: hygiene factors.

A *good work –life balance (WLB)* is another extrinsic need which has gained importance from the 1960's on when women more often started working (part-time). The globalizing world, the 24/7 economy and constant change have increased the demands on working couples. The combination of work and family life is becoming therefore more difficult and stressful. According to Lewis, Gambles & Rappoport (2007) the importance of the WLB increased accordingly. It is furthermore argued that there is no perfect work life balance. The desired balance will vary between individuals. Not everyone wants the same levels of work and non-work activities or has the same family situation (Greenhaus, Collins, & Shaw, 2003).

4.1.2. Intrinsic needs

As Looise and Torka (2007) argue knowledge workers value especially *work content* and *career perspective*. These needs focus directly on the job and job content which is why they are indicated as intrinsic needs.

Also, talents or professionals have a strong sense of intrinsic motivation and are mostly interested in *challenging work*. This also drives long work hours and the importance of both work-life balance and rewards and recognition: the extrinsic needs. Professionals also tend to identify with other like-minded professionals rather than the organization for which they work and develop strong interpersonal networks that span organizational boundaries (Kinnie, Hutchinson, Purcell, Rayton, & Swart, 2005).

Also, *performance*, meaning: feedback on how people are doing better and what they can do to perform better is indicated as an important intrinsic need that talents have (Zingheim & Schuster, 2008). According to Kinnie et al. (2005) talents commitment is even linked to their satisfaction with *performance appraisal.* Because of this, talents are highly focused on getting *feedback* on the quality of their work.

Professionals are also focused on the development of expertise through *challenging projects*. Furthermore, they feel the need to be *involved in decisions* that will influence their developmental opportunities and careers and they have a need for a high degree of *autonomy*. According to

Kinnie et al. (2005), the idea that involvement is important suggests that professionals want to exercise their own professional judgments about the way the job should be done.

Performance and pay based rewards are sometimes bundled in what Zingheim & Schuster (2008) call total reward programs. These are programs that combine rewards as development (individual growth), pay and (appealing) career opportunities (compelling/ positive future). All components combined should make sure that the company is able to retain talents.

The table below summarizes needs that talents (knowledge workers) have which stem from the several used literature sources. Both motivational needs: intrinsic to the employee and basic needs: extrinsic to the employee are identified.

The arrow indicates that the higher the needs are placed the more they are found intrinsic and motivating to the talented individual. The needs placed somewhat in the middle of the table are indicated as self actualization needs but are found to be intrinsic because they have to do with the job content. The needs that are placed at the bottom are extrinsic needs, needs that are of importance but do not motivate employees.

		Maslow's Needs	Needs that stem from literature	Source
Motivational Needs		*Self Actualization Intrinsic*	-Task significance -Personal achievement -Autonomy -Skill variety -Individual growth -Compelling future -Excitement -Job feedback -Personal Development -Challenging work/ projects	(Hackman & Oldham, 1975) (McClelland,1961,1971) (McClelland,1961,1971) (Hackman & Oldham, 1975) (Thorne & Pellant, 2007) (Thorne & Pellant, 2007) (Thorne & Pellant, 2007) (Hackman & Oldham, 1975) (Thorne & Pellant, 2007) (Kinnie, Hutchinson, Purcell, Rayton, & Swart, 2005)
Basic Needs		*Esteem Needs Intrinsic*	-Positive Workplace -Performance -Fair treatment -Recognition -Stimulation	(Thorne & Pellant, 2007) (Zingheim & Schuster, 2008) (Pfeffer, 1995) (Pfeffer, 1995);(Kinnie et al. 2005) (Thorne & Pellant, 2007)
		------------------------	-------------------------------	--
		Esteem Needs Extrinsic	-Work-life balance -Status -Security -Total pay -Pay adjustments -Rewards	(Lewis, Gambles, & Rapoport, 2007) (Herzberg, 1987) (Zingheim & Schuster, 2008) (Zingheim & Schuster, 2008) (Zingheim & Schuster, 2008)

Figure 4: Needs overview

4.2. Retention & Motivation systems

Another important question to answer is what type of instruments should be used in order to retain talents. Several types of retention systems or tools can be used (Cappelli, 2008; van der Sluis & van de Bunt-Kokhuis, 2009; Frank & Taylor, 2004; Thorne & Pellant, 2007). Before elaborating on this point, it is important to distinguish between two types of rewards. The first types are those that are extrinsic to the individual. These rewards are part of the job situation and are given by others. The second types of rewards are intrinsic to the individual and stem directly from the performance itself (Lawler, 1969).

4.2.1. Extrinsic systems

The most popular retention mechanism today is compensation (Cappelli, 2000). Recent surveys indicate that the most common compensation tool is tuition reimbursement, followed by competitive vacation and holiday benefits, and then competitive pay (Frank, Finnegan, & Taylor, 2004). Most companies try to retain their talented employees by paying them extra salary, bonuses or for example employee stock ownership. This strategy implies that in order to recruit outstanding people that stay with the organization compensation matters.

High wages tend to attract more applicants, permitting the organization to be more selective in finding people that are trainable and committed to the organization. However, perhaps most important: higher wages sends the message that the organization values its people (Pfeffer, 1995).

Paying extra also has downsides. It will create incentives for individuals to waste their time on gaming the system: interpersonal competition (Pfeffer, 1995). According to Pfeffer (1995) higher overall performance can be achieved by using compressed wages which will decrease this interpersonal competition.

Another problem with paying mechanisms is its popularity and that it is easy to copy: recruiters from other companies can easily offer the same amount of money or even more. For the talented employee the incentive to stay at a company then decreases, especially when signing bonuses are offered by competitors (Cappelli, 2000).

This effect could be minimized by paying signing bonuses in stages, rather than as lump sums. This way employees will stay, at least in the short run (Cappelli, 2000). Providing a raise instead of granting employees a bonus could also be helpful. This way of improving performance is also known from van der Sluis & van de Bunt-Kokhuis (2009).

Next to compensation systems there are other extrinsic systems. Fleetwood (2007) for example argues that there are several working practices that improve the Work Life Balance of employees. Examples of these are: flexible start and finish times, term-time working, voluntary part-time, job-sharing, compressed working weeks such as the nine day fortnight or the four and a half day week, shift swapping, self-rostering, time off in lieu, sabbaticals and career breaks. In the end these practices should lead towards employees who are satisfied with their WLB and do not intend to leave the company. However, according to Herzberg (1987) these practices do not lead to satisfaction at all. These practices should be present within an organization but do not motivate employees per se: they are extrinsic basic needs. This will also be the starting point within this research.

Large businesses use another good mechanism for managing retention: location. By carefully choosing the sites for various groups of employees, they can influence turnover rates. A high-tech company, for example might find it useful to have a research and development operation in Silicon Valley in order to tap into cutting-edge thinking (Cappelli, 2000).

Another mechanism is hiring, when companies recruit, they often focus on attracting exactly those people who will be the most difficult to retain. By shifting their sights to workers who can do the job but are not in high demand, organizations may be able to shelter themselves from market forces (Cappelli, 2000).

Finally, history shows that cooperation, even among competitors, can be one of the most effective ways of dealing with talent shortages (Cappelli, 2000). For example a talent pool can be developed between several companies, that to offer better choices for both companies and employees. This pool should ideally prevent employees from leaving the organization.

4.2.2. Intrinsic systems

Different mechanisms are defined that will retain people with critical skills for longer periods because they deal with intrinsic needs (Cappelli, 2000). In general two can be identified: *job design* and *job enrichment*. Job design deals with the question which tasks to include in which job. This should have considerable influence over retention rates (Cappelli, 2000). Job enrichment deals with including certain job characteristics in a job that will create more challenging and more motivating jobs (Moeller & Fitzgerald, 1985).

Job design as a strategy to improve motivation and through motivation job performance was developed by Herzberg (1966) and has been an increasingly important focus of organizational development efforts. In this context, job design can be seen as an extension of other efforts to redesign the conditions of the workplace to enhance employee satisfaction (Salancik & Pfeffer, 1977).

Salancik & Pfeffer (1977) argue in their article that job design can alter the job characteristics aiming at a better fit between the need of the employee and the company. This fit, sometimes referred to as job-fit deals with the fit between employee skills and needs of the job from an employer perspective. Another fit is the Person-Environment fit which may increase job satisfaction and organizational commitment by reducing employee turnover and costs associated with turnover (Amos & Weathington, 2008). Results of the study of Amos & Weathington (2008) support the idea that employees who fit well or perceive themselves as fitting well in an organization will be more satisfied with their job and more committed to stay with the organization.

A final reason why job design changes can have a positive effect on motivation is introduced by Lawler (1969). He argues that job design can change an individual's beliefs about the probability that certain rewards will result from putting forth high levels of effort.

Job enrichment has to do with the content of the job. Lawler (1969) argues that job content is the critical determinant of whether employees believe that good performance on the job leads to feelings of accomplishment, growth, and self-esteem. Or, whether individuals will find jobs to be intrinsically motivating. This can increase the satisfaction of that employee which will probably contribute to a more motivated employee.

Job characteristics are realities in the environment to which the individual responds. For example, jobs can be routine, provide feedback, give workers freedom, require a variety of skills etc. In order to improve a job design, characteristics which are satisfying to the needs of the individuals should be put in place. This can lead to job enrichment or for example job enlargement (Salancik & Pfeffer, 1977).

According to Katzell & Thompson(1990) job enrichment is one kind of innovative program designed to fulfill the imperative of making jobs attractive, interesting, and satisfying. Many behavioral scientists have advanced the thesis that diversified, challenging jobs are more satisfying and intrinsically motivating than simpler, more routine ones.

Thus, job enrichment can be viewed as an organizational intervention designed to restructure jobs with the intent of making them more challenging, motivating, and satisfying to the individual (Moeller & Fitzgerald, 1985). This is different from job enlargement which only makes a job structurally bigger, not more interesting (Herzberg, 1987).

Job enrichment influences the retention of employees because whenever the employee is satisfied with his job, the intention to leave will decrease. Evidence found by Vroom (1964) suggests that vertical job enlargement can lead to increased motivation when it leads to employees committing themselves to higher production goals.

Next to job design and job enrichment there are other practices that can be used to enhance intrinsic motivation. Building trust and using communication is one of them. Communication in this context means that clear objectives are set and that these are regularly monitored. Employees receive feedback and have the opportunity to discuss their own view on their progress (Thorne & Pellant, 2007). This interaction is very important, because this way employees feel that they can influence the environment in which they work (van der Sluis & van de Bunt-Kokhuis, 2009).

Building trust with employees is, according to Frank & Taylor (2004) critical to achieve high retention. It is believed that employees will stay more often when they have a good relationship and open communication with their immediate boss (Frank & Taylor, 2004).

Van der Sluis & Van de Bunt- Kokhuis (2009) argue further that a company can retain talent by keeping promises, also a form of building trust. Keeping a promise is important because an employee can become demotivated when it turns out that promises are not corresponding with reality. This is also called the violation of the psychological contract.

Another intrinsic mechanism mentioned by Cappelli (2000) is the development of social ties. By encouraging the development of social ties among talented employees, companies can often significantly reduce turnover rates. When employees develop both formal and informal bonds they are reluctant to switch jobs because they will not only lose their colleagues but also their friends (Cappelli, 2000).

Below you can find the results of the basic needs (extrinsic) and motivation (intrinsic) systems that can be used in order to retain (talented) employees. Only job design and job enrichment can be classified as an intrinsic motivational need system. The work context systems can be intrinsic to employees and is indicated as esteem need. The Work Life Balance, and the compensation system are classified as extrinsic basic esteem needs systems. These rewards are part of the job situation and are given by others

	Needs	Retention & Motivation systems	
Motivational Need Systems	*Self Actualization Intrinsic*	-Job Design & Job Enrichment • Job – fit • Job content	(Herzberg, 1987); (Cappelli, 2000); (Salancik & Pfeffer, 1977); (Amos & Weathington, 2008)

Basic Need Systems	*Esteem needs Intrinsic*
	
	------------------- 	
	
	Esteem Needs Extrinsic
		-Work context systems
		• Trust
		• Communications
		• Social ties
		• Commitment
		-- 	
		• Work Life Balance
		   o Flexible start and finish times
		   o Term-time working
		   o Voluntary part-time
		   o Job-sharing
		   o Compressed working weeks
		   o Shift swapping
		   o Self-rostering
		   o Time off in lieu
		   o Sabbaticals
		   o Career breaks
		• Cooperation
		• Location
		• Hiring
		-Compensation system
		• Performance based pay
		• Competitive pay
			(Frank & Taylor, 2004) (Mowday, Steers, & Porter, 1979) (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002) (Granrose & Baccili, 2006)
			
			------------------------------ 	
			
			(Herzberg, 1987)
			
			(Pfeffer, 1995); (Frank, Finnegan, & Taylor, 2004); (Cappelli, 2000); (van der Sluis & van de Bunt-Kokhuis, 2009)

Figure 5: Needs systems overview

4.3. Conclusion & proposed model

In this chapter is stated that talents have individual needs and motivators that influence their intention to stay with an organization. Basic needs and motivational needs have been distinguished, the first leading to no dissatisfaction and the last leading to satisfaction.
Also systems that can fulfill the needs of talents have been identified. Intrinsic systems can be used to enhance the motivation while extrinsic systems can be used to fulfill the basic needs.

The new, more detailed, proposed model builds on the model that was presented in chapter 2. With the help of the available literature the model is now more detailed and focused on knowledge workers. Just like the proposed model in chapter 2, the new framework is based on the need theory, motivation theory and the job design theory.
As can be seen a distinction has been made between needs and systems that enhance satisfaction and needs and systems that lead to no dissatisfaction. The first column bundles and describes the basic needs and extrinsic systems. The second column shows the motivational needs and intrinsic systems that, combined, will lead to increased satisfaction.
This model also assumes that jobs which fulfill talents needs are satisfying; those that do not are not satisfying. If a talent is satisfied with the job, it is because the job is not satisfying his needs (Salancik & Pfeffer, 1977). All mismatches between a person's needs and the situation will cause dissatisfaction.

In short, the model (figure 6) proposes the following: in order to increase job retention a fit between employee needs and motivators and intrinsic and extrinsic systems should be achieved. By doing this the employee will be more committed to the company and turnover will be reduced. This will enhance the retention rate of the employees and lead to increased performance.

Figure 6: Detailed proposed model
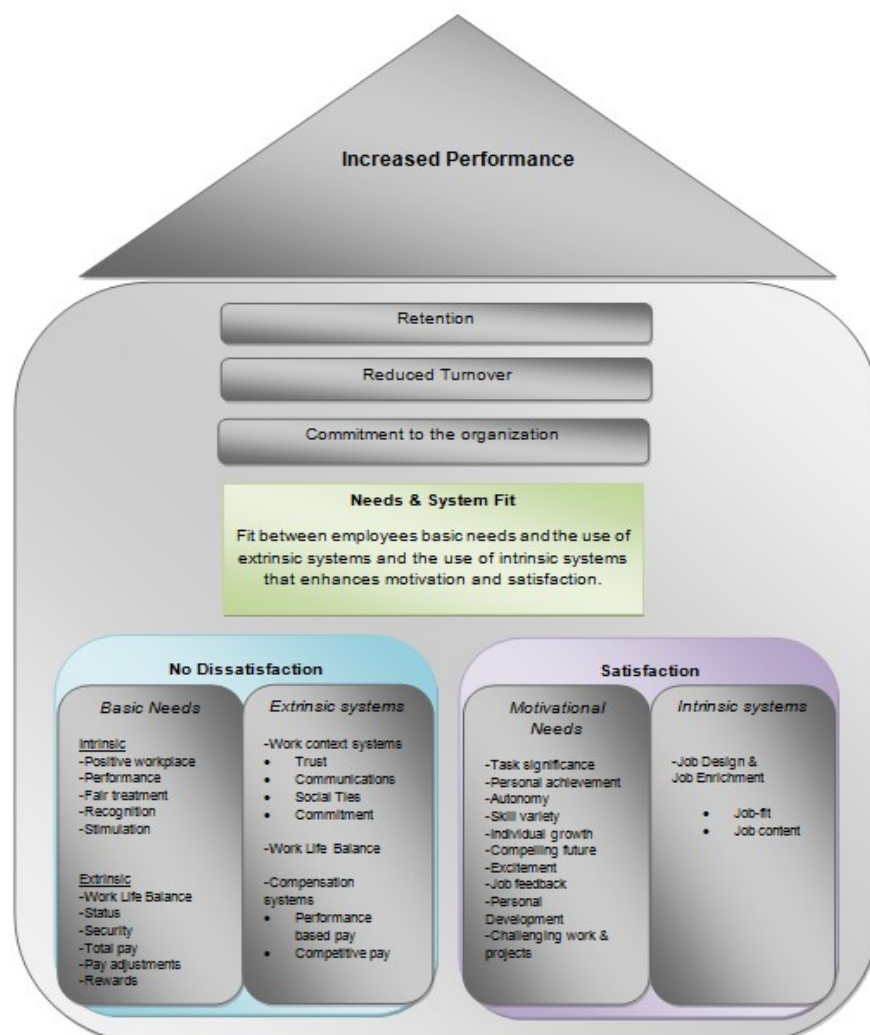
5. Results

This chapter discusses the results of the field study, executed within the University of Twente.

5.1. Response

The research was conducted at UT among talented scientific employees. In total UT has 2700 employees of which 60% is scientific staff. Out of this group, 29 employees have been identified as talents by UT because these employees have (Tenure Track) potential or have proved to be excellent researchers in the sense that they acquired grants or prizes.

A diverse group of 18 talents was selected and invited for the interviews. Out of this group 13 talents have been interviewed. The five remaining talents did not work for UT anymore, could not cooperate due to personal circumstances or were too busy to be interviewed. All talents have been personally interviewed face to face, except for one respondent which has been interviewed by phone due to practical circumstances.

The personal non work related attributes of the respondents can be found in the table below. Of the 13 respondents, seven were part of the age group 30-40 while six of them were part of the age group 40-50. Three of the respondents were female, while 10 were male. All, except one respondent were married or had a partner and six of them had children.

Personal Non Work related attributes			
	30-40	40-50	Total
Age	7	6	13

	Male	Female	Total
Gender	10	3	13

	Single	Partner	Total
Family situation	1	12	13

	Yes	No	Total
Children	6	7	13

Figure 7: Personal Non Work related attributes

The personal work related attributes are depicted in figure 8. As can be seen five Assistant Professors (UD), two Associate Professors (UHD) and six full Professors were among the respondents.

Two of the respondents were part of a social faculty: one within the GW faculty, the other within the MB faculty. The remaining 11 respondents were part of technical faculties, six within TNW, 2 EWI and 3 CTW. Six respondents worked between 1-5 years for UT, 1 between 5-10 years and finally 6 persons more than 10 years. Also, eight respondents were practicing their current job between 1-5 years, two between 5-10 years and three of them more than 10 years.

Personal Work related attributes					
	UD	UHD	Prof		Total
Function	5	2	6		13

	GW	MB	TNW	EWI	CTW	Total
Faculty	1	1	6	2	3	13

	1-5 yrs	5-10 yrs	10+ years		Total
Yrs working UT	6	1	6		13

	1-5 yrs	5-10 yrs	10+ years		Total
Yrs current job	8	2	3		13

Figure 8: Personal Work related attributes

5.2. Current and Future needs

5.2.1. Current needs

An overview of the respondents' current needs (top ten) can be found in figure 9 and will be elaborated on. The complete overview can be found in appendix F.

Current Needs
• Ambitious colleagues
• Need to be able to focus on research not secondary issues.
• Freedom to determine research focus
• Financial resources for research
• More support for management tasks/ Less management tasks
• Good research facilities
• Dynamic environment
• Supportive and positive management
• Room for new ideas
• Surrounded by a critical mass

Figure 9: Current needs overview

As can be seen in this overview the need for ambitious colleagues was mentioned by the majority of the respondents. One talent said: *"Within the faculty we are very comradely and ambitious. I am proud of colleagues winning prizes or having a good publication. This motivates me to perform at a high level as well." (int1)* Another said*: "As a researcher I need an ambitious and critical mass: colleagues. Whenever I get input from colleague researchers my research improves and it leads to new ideas."(int2)*

Another need that came forth from the interviews was that most of the respondents wanted to be able to focus on their research. They felt that management tasks, lectures, financial and personnel issues distracted them from focusing on their research. *"I do not want to think about anything apart from research. I don't want to spent time on finances or orders for the lab." (int2)* Another: *"My current needs are that I want to spend as much of my time on my research and that I can devote a small part, as small as possible, to management tasks."(int4)*

In connection to this there was the need for more support on management tasks. As one respondent formulated: *"I have a need for professional people around me. Both scientists and supporting staff. For example a professional personnel department." (int5)* Another stated: *"I have a need for a surrounding where the organization you work for is offering services and support in the same speed as the research develops. Often this is not the case because an organization is depending on procedures and regulations that slow down the process." (int8)*

Some respondents feel that there should be more support from the organization for their management tasks because they feel they should spend most of their time with their peers, students and research. As one talent said: *"I spend too much of my time managing. This moment I spent 50% of my time managing, I would like to reduce this to 25%." (int4)* Another said*: "As team leader I do not have expertise in the field of finances and personnel management. I do get some support for that but not enough, I have a need for more support in that matter." (int5)*

The need for freedom, both in a financial sense as in the sense of deciding which focus the research has and to experiment was also mentioned. *"I want to be able to influence the way my job is designed." (int12)* And: *"I find it important that there is a certain freedom to decide which way to go. What type of research you want to do and what you need in order to do so: shaping your own research projects." (int1)*

Supervisors also seem of importance for talents. One talent described it as: *"A supervisor or manager divides opportunities and resources. I feel that the faculty should check whether this is done properly. A bad supervisor can have a bad influence on the career of talents. I have had the luck to be at the right time at the right place and that I worked very hard to get there". (int4)*

5.2.2. Future needs

Next to questions concerning current needs, questions were asked whether talents' current needs would change in the future. An overview of the answers can be seen in figure 10.

Some respondents felt their needs would change because their career and family situation would change over time and therefore their needs would change as well. *"Slowly you become responsible for more and more people: your responsibility grows. Time management becomes more important then. You have to manage your time efficiently. I know now that earlier on I could be more individualistic. The only thing I was responsible for was me and my research. Nowadays I am responsible for many more people."* *(int2)*

Others argued that their needs would not change because they were already at the top of their career. *"No, I don't think my needs will change, because I am at the top of my scientific career. I find practicing research the most important need that I have and this will not change."* *(int3)*

Again others argued that a change of needs could be the case but that this change would be so gradually that they would easily adapt to them. One respondent argued: *"For me it is a challenge to maintain my current needs and also the content of my job. To be able to have a research group with as little management tasks and politics as possible".* *(int11)*

Many respondents did foresee that their needs would change because of new career aspirations. For example moving on to a more administrative position with new problems, needs and opportunities. As one respondent said*: "changing needs are influenced by the phase you are in as a researcher. As a starting researcher you have very different needs than professors do."* *(int8)*

Another respondent stated the following: *"In the future I have the need to build a group myself, have students. Collaborate with students and colleagues and getting funds and grants."* *(int9)*

Other respondents would like to see themselves more in a coaching role and again others felt that their most important need: research, would be and stay their most important need. *"I would like to keep working as an expert, however in the future I might be interested as well in a management position. This could be within the faculty, UT wide or even internationally." "I could also see myself in a coaching position: young people help to develop, developing their careers as I did*". *(int1)*

Future Needs
• More management skills
• Practicing relevant research
• The need for renewal
• The need for efficiency
• Getting funds and grants
• Collaborate with students and colleagues
• More independence
• Keep time spent on management tasks as low as possible
• Excellent AIO's
• Build a group
• Coaching
• Have students
• Management positions

Figure 10: Future needs overview

5.2.3. Importance of needs

Next to asking which needs respondents currently had and would foresee to have in the future the respondents had to order a set of needs. All respondents indicated which needs, which were taken from a pre set list, they found most (1) and least important (12). The results can be found below.

Overall	Points
• Type of work that you do	2,8
• Compatibility colleagues	3,0
• Career Perspective	4,5
• Opportunities to develop new skills	4,8
• Salary	5,2
• Status/ Prestige	6,3
• Influence in the organization	7,4
• Quality of supervision	7,8
• Benefits and perks	8,1
• Physical conditions	8,3
• Stress	9,3
• Hours required to do the job	9,3

Figure 11: Importance of needs overview

The outcomes varied per respondent, but overall the type of work was awarded 2,8 points and thus found most important. However, the type of work was closely followed by the compatibility of colleagues (3,0 points). The respondents found thus the content of the work and their tasks very important next to having ambitious and friendly colleagues with whom they could collaborate.

At a small distance career perspective followed, rewarded with 4,5 points. Closely followed by the opportunities to develop new skills (4,8) and salary (5,3).

The salary that UT offers was found to be fine or ok by most of the respondents, one answered: "*the salary is fine, I did not came here to become rich.*" *(int12)*. However some argued: "*the salary could always be better*" and "*Compared to salaries paid in business the level salary here is low, there is few space for individual situations and there is no performance based pay at UT, that's a shame.*" *(int5)* or "*At a university you have to work harder and get less paid than when working for an international company.*" *(int6)*

Somewhat in the middle, benefits and perks, status and prestige, influence in the organization and quality of supervision can be found. Rewarded with 6,3/ 7,4/ 7,8 and 8,1 points.

Status was found foremost of importance internationally, not within UT and connected to a particular job position. "*I am not worrying about my status. For full professorship positions this is much more the case.*" *(int5)* "*There is no status here, but I do not find it of importance. Only international status is important to me. This status is not enough but that is mostly due to the position I am in. I cannot offer a PhD position or make decisions. It would be nice to have some more decision making abilities.*" *(int13)*

Influence in the organization was not found very important. The quality of supervision was mostly found important by younger respondents. Benefits and perks were indicated as not present at UT and not very important although it could be used as a form of recognition. "*Bonuses should be used more often to give employees an extra sign of appreciation. Extra recognition could increase the motivation.*" *(int6)*

Overall the physical conditions were found not very important (8,3) and experienced as 'fine' at the moment. Various respondents argued that their research group would move to new facilities soon which would improve the conditions.

Stress and hours required to do the job comes last, rewarded both with 9,3 points. The respondents further indicated that high stress levels and working many hours were part of the research job and was least important. "*I work more hours than I get paid for but working more hours is a personal choice. If I would want to work just the 40 hours that would be fine with the organization as well.*" *(int11)* "*You generate stress mostly by yourself and making long hours is part of a scientific job.*" *(int12)*

The answers given by the respondents of the two age groups (30-40 & 40-50) have been placed next to each other. The results and differences are presented in figure 12.

As can be seen most results are comparable within both age groups. The type of work that you do and the compatibility with colleagues is found most important. In the middle there are the opportunities to develop, salary, influence in the organization etc. Below we find the benefits and perks, stress and hours required to do the job.

Two major differences are printed in bold: in the age group 30-40 years old, respondents feel that career perspective is most important and reward this with 2,6 points. This, while 40-50 year old respondents score career perspective low in importance: 7,6 points.

Another difference is the position of the physical work conditions, which scores higher with the 40-50 age groups (6,1 points) and lower with the 30-40 age group (9,4).

30-40		40-50	
• **Career Perspective**	*2.6*	• Type of work that you do	*2.6*
• Type of work that you do	*3.0*	• Compatibility colleagues	*2.7*
• Compatibility colleagues	*3.1*	• Opportunities to develop new skills	*5.0*
• Opportunities to develop new skills	*4.6*	• Salary	*6.1*
• Salary	*4.7*	• **Physical (work) conditions**	*6.1*
• Status/ Prestige	*5.6*	• Influence in the organization	*6.1*
• Influence in the organization	*8.1*	• Quality of supervision	*7.0*
• Quality of supervision	*8.1*	• Status/ Prestige	*7.3*
• Benefits and perks	*8.3*	• **Career Perspective**	*7.6*
• Hours required to do the job	*8.7*	• Benefits and perks	*8.1*
• **Physical (work) conditions**	*9.4*	• Stress	*9.2*
• Stress	*9.9*	• Hours required to do the job	*10.2*

Figure 12: Importance of needs age groups

Next to differences in age groups, answers of both male and female respondents have been compared. An overview can be found in appendix G. Male respondents found type of work most important (2,7), female respondents found this less important and gave 5,6 points.

Female respondents found the opportunities to develop new skills most important (2,3). Young female respondents argued that they found the mentorship program a good initiative to support career advancement and to develop new skills. "*What I did find useful is the mentorship program. This is organized by the Female Network Twente and should be pushed more. You can pick a mentor from a list of people (outside your own research group) that signed up and meet with this person. I discuss process related issues as for example to accept a job offer or not with my mentor.*"(int9) Male respondents awarded opportunities to develop new skills with 4,3 points.

Another difference is the importance of status and prestige. Male respondents awarded this 5,3 points, while female respondents awarded 8,3 points. One female respondent argued: "*Status you get mostly from outside UT and is part of your position. When I just became full professor people were amazed, I was the first female full professor within my research field*". (int5) A male respondent said: "*Externally the status of a full professor is very high, internationally as well. In the faculty this is often not as much the case.*" (int4)

Career perspective was found somewhat more important by male respondents (4,0) and somewhat less important by female respondents (5,6). A female respondent at the top of her scientific career argued that the career perspective is not good. "*Content wise it is not possible to grow from a full professorship. Only management jobs are an option then.*" (int5)

Salary is somewhat more important by the female respondents (4,6) than is the case for male respondents (5,0). Two out of the three female respondents were not satisfied with the amount of salary they earn. These respondents argued that the salary is low compared to international salaries and salaries paid in the industry. "*The salary is low compared to salaries paid in the industry. I can earn 2,5 times as much abroad.*" (int9)

5.2.4. Motivating needs

Next to the question what the respondents current and future needs were also a question was posed which needs the respondents would describe as motivating needs. Overall the answers given could be categorized in: research or content related motivating needs, needs related to recognition for the work done, development of others or oneself and finally working with colleagues and students, especially ambitious ones was found motivating. This is depicted in figure 13.

Most of the answers given could be categorized under 'research or content related'. Doing research was mentioned mostly: 8 of the 13 respondents found this to be motivation. Various respondents were motivated by doing research, by discovering something new, by trying and trying as long as a model or idea finally worked and came to life. *"I am motivated by doing research. Spreading new knowledge and insights among a broad public."(int4)* Another*: "I am motivated by doing research: combining two technologies. Combining the best of two worlds." (int8)*

The category 'development' was also mentioned often. For example, five of the respondents mentioned the need to help young talents develop. As one talent described: "*It motivates me when I see young people develop. See things in them which they did not see themselves and also see these things happening in the end".(int8)* Another: "*I like to help young talents, to offer them individual support. Every person has in his life, when making important decisions, the need for someone that can help. I can have a very big impact on someone's life with very little effort. I enjoy that." (int1)* Another argued: "*The challenge motivates me and also the faith that I can make things work". (Int12)*

Recognition as a category was also mentioned, mostly in relation with research outcomes. Two respondents mentioned that they would like to have an impact within the world of science with their research. Three respondents also mentioned being motivated by presenting the world new ideas. As one talent described it: *"I want to achieve things, I want to have an impact within the scientific community but also in society: relevance! This can be within my research but also within projects, a product that works well or a spin-off company."* (int1)

Also working with colleagues was motivating for some respondents. As one said: "*I am motivated by working together, not only with near colleagues, but also with PhD students or colleagues outside my group." (int6)*

Motivating Needs

• Research/ content related
  - Doing research (8)
  - Continuing solving research problems(4)
  - Teaching (2)
  - Inventing new things
  - Doing exciting experiments
  - Explaining research to society
  - Making a break trough
  - Making things that are useful for society

• Development
  - Help young talents develop (5)
  - Challenges (2)
  - Learning by discussing
  - Improve yourself, develop

• Recognition
  - To present the world new ideas (3)
  - Having impact within the world of science (2)
  - Recognition for research results (2)

• Colleagues
  - Working with colleagues and students (2)
  - Ambitious colleagues

Figure 13: Motivating needs overview

5.3. Satisfaction with job design and work context

This section presents the results of questions identifying whether the needs that the scientific talents have match the actual work situation of both the job design and the work context. In the figure below the results of satisfaction with the job design and the work context is presented.

Satisfaction				
	Yes	**No**	**Partly**	**Total nr. respondents**
Satisfaction with job design	*9*	*0*	*4*	*13*
Satisfaction with work context	*10*	*0*	*3*	*13*

Figure 14: Satisfaction with job design and work context

5.3.1. Job design

As can be seen in figure fourteen, 9 respondents were satisfied with their current job design. The majority of the respondents stated that this was due to the fact that they could influence their job design themselves. One respondent for example answered: "*Yes I am happy with the design of my job because I can influence it myself.*" *(int12)* Another*: "I can design my job the way I want to. I get a lot of freedom and am able to explore new ideas.*" *(int6)* Also a respondent argued to be satisfied with the job design because of*: "the combination of freedom and independence".(int11)*

Four respondents were partly happy with the job design. One respondent argued: "*Overall I am pretty happy with the design of my job because I can decide on it and improve it by myself. However, I would prefer to teach more.*" *(int12)* Another: *" I am happy with my job, I just think that there are too many tasks that need to be done apart from doing research.*" *(int4)* The third*: "I like my job, I just would like to teach less in order to be able to focus more on my research".* *(int10)*

The respondents were also asked how their job design could be improved. The answers were diverse. Some argued that less management task could be an improvement. Others mentioned more teaching, against respondents that preferred less teaching. One respondent stated: "*The design of my job could be improved by minimizing my education task.*"*(int10)* Another: "*I am mostly satisfied with the job design because I can decide on it myself and can improve it by myself. However I would prefer to teach more.*" *(int12)* Also was stated by one of the respondents: " *I would improve my job by including more teaching tasks. This gives you the opportunity to spot talents for your group. This also makes you visible for the students. I furthermore would like to enhance the visibility within the faculty to enhance the collaboration between groups".* *(int9)*

5.3.2. Work context

The results in the table indicate that 10 of the 13 respondents are satisfied with their work context. "*I am satisfied because I have gotten the chance to set up research myself. Next to that I work along with experts and am stimulated with knowledge and resources. What I also find important is that at UT there is room for credits. At some universities you don't always get the credits you deserve. At UT luckily this is not the case".(int2)*

Another stated: "*I am satisfied because I have the opportunity to do research on a high level. Also, because I have colleagues of high quality which makes that the research within our group is of high quality as well. I do hope that the research climate will stay this way and that the research quality can be retained".* *(int3)*

Also was argued by one respondent that: "*I feel like this job fits me well. Both content wise as task and responsibility wise. Also I find freedom very important. The freedom to make decisions, this freedom is present within this organization".(int5)*

Three out of the 13 respondents were only partially satisfied with the work context. One respondent said: "*I am satisfied mostly because of the group I am part of, the people I work with, the space I get which makes that I can function optimally. However I do not think the central support within the organization is optimally".* *(int6)* Another argued*: "This job is a good experience and I learn a lot here. I just know that there is more out there that I want to explore.(int9)*

Comments concerning the physical work context were seldom made. The only comments were related to a malfunctioning climate system, the fact that the physical conditions would improve as soon as the group was moving to a new building within months and that moving would possibly also improve collaboration between more groups.

5.3.3. Expectations

In figure 15 the used list with work context items are displayed and is showed whether or not these items fulfill the expectations of the respondents at this moment within UT.

As can be seen, issues where the majority of the expectations do not match the reality are: benefits and perks, hours required and stress. Respondents argue that UT does not use bonuses or perks at all but do think that in some cases this could be of value. One talent argued: *"Yes I do think bonuses could be used as a sort of stimuli, this does not need to be a financial bonus though."* (int4) Another respondent found that the fact that bonuses were not often used met the expectation. *"I don't fancy a bonus, I'd prefer an incentive in the form of career advancement."*(int2) And: *"I prefer a sabbatical as a form of bonus, this inspires new research".*(int8)

Furthermore, several respondents argued that their jobs exceed the 38 hrs by great amounts. As one talent argued: *"The work takes much more time than the 38 hour that officially stands for the work, thus it does not meet my expectation."* (int4) And another: *"I work a lot, but that's part of the deal. I often work 16 hours a day. So I would say it is meeting my own expectation. Being a scientist is not a job it is a way of life."* (int10) A third: *"Working long hours is part of the job, on the other hand there is so much work to do. I work around 50-60 hours a week. And the thing is that you cannot work part-time. This would influence the quality of your research. Only by offering more support to researchers working part-time could be an option."*(int11)

Stress is also not meeting the expectations of the respondents, overall the respondents feel that the stress level is higher than expected. *"I have more stress than I expected, however it is part of being a researcher."*(int4) And: *"The stress is more than was the case in former jobs, but I knew that when I came here so it is meeting my expectations."*(int13) So, most of them argue that it is part of the job and some respondents even liked high stress levels. *"Yes, the pressure is high, but I like that, I think it makes the work dynamic."*(int11)

The majority of expectations do match the reality (10 out of 12) in the case of: compatibility of colleagues and type of work required. A majority found the compatibility of colleagues very good. One respondent that partly agreed argued: *" There is a good atmosphere between colleagues, however people are working not as a team. People like to operate solo."*(int4) A respondent that replied negative argued: *"This does not meets my expectations. We use different research methods. I use mainly quantitative methods while my colleagues use mostly qualitative research. This makes collaboration very difficult."*(int13)

Salary and career advancement score not conform or against expectation. Some respondents do feel that the salary is too low or that UT could make better use of individual salary levels. The majority of the respondents argue however that salary is meeting the expectations.

Also some respondents feel that the career advancement is not meeting or only partly meeting expectations. *"I feel UT could do more about career advancement. Researchers could be send for a sabbatical to gain new research insights."* (int8) or *"The opportunities are there, the hardest thing is to find time to go to courses and trainings. Extra service from the P&O department would be recommendable because most of the time you are too busy yourself to think about it."* (int6)

Looking at the overall picture of answers given by an individual, interesting to see is that one respondent is very negative: 7 out of 12 work context items are not meeting expectations. Two respondents are very positive: all work context items are meeting expectations. And five respondents feel that several (four or more) items do not meet expectations or only partly. There was no indication that only respondents of the age group 30-40 respectively 40-50 or only male or female respondents were very positive or negative. Overall no specific profiles of types of talents and their needs could be distinguished. The answers as depicted in figure 15 are too diverse to do so and the sample is just too small.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Compatibility of colleagues	y	y	y	y	y/n	y	y	y	y	y	y	y	n
Type of work required	y	y	y	y	y	n	y	y	y	y	y	y/n	y
Salary	y	y	y	y/n	y	n	y	y	n	y	y/n	y	y/n
Opportunities to develop new skills	y	y	y	y	y	n	y	n	y/n	y	y	y	n
Quality of supervision	y	y/n	y	y	y/n	y	y	y	y	y	y	y	y/n
Influence in the organization	y/n	y	y	y	y	y	y	y	y/n	y/n	y	y	y
Status/ Prestige	y	y	y	y	y	y	Y	y	y/n	y	y	y/n	y/n
Career Advancement/ Perspective	y	y	y	y	y	n	y	y/n	n	y	y	y/n	y/n
Physical conditions	y	y	y	y/n	y	n	y	y/n	y	y	y	y/n	y
Benefits and perks	y	y/n	y	y	n	n	y	y	y	y/n	n	y	y/n
Hours required	n	y	y	n	n	n	y	y/n	y	y	y/n	y	y
Stress	n	y	y	y	n	y	y	y/n	y	y	y	y	y

Figure 15: Expectation overview

5.4. Intention to stay and commitment

This section will describe whether UT's talents are willing to stay working for UT and why. Both their intention to stay and their commitment to the organization have been questioned.

5.4.1. Intention to stay

During the interview the respondent's intention to stay at UT was of interest. Respondents were asked whether they would quit the moment they would receive a job offer. Also was asked whether they would quit their job in the near future and whether they wanted to quit their job in the past and if they actually quitted. An overview of the results can be found below.

Intention to stay				
	Yes	**No**	**Depends on offer**	**Total nr. resp.**
Quit now?	0	6	7	13
Quit near future?	1	10	2	13
Wanted to quit in the past?	7	6	-	13

Figure 16: Intention to stay

As can be seen six of the respondents would not quit now, when offered a new job elsewhere, the remaining 7 would at least consider the offer. One response for staying was: "*I feel comfortable in the Netherlands and in my research field the Netherlands are the experts.*"*(int5)* Another was: *"No, I would not leave because UT still offers me career perspective.*"*(int6)* Again another: "*I get offers for different jobs daily, but I am still here. UT is for me, this moment, the perfect place to work: I am offered enough opportunities and it is an ideal place to live with my family.*"*(int1)* Also arguments as: "*I feel responsible towards my colleagues*" *(int3)* and "*I build this place myself, it would take years to build it elsewhere*"*(int2)* were noted.

The respondents that answered 'depends on the offer' argued that the quality of the offer was leading. "*Whenever I would encounter a bigger challenge under good conditions I would certainly consider stop working for UT.*"*(int13)* For this respondent a good offer would be: "*To be offered a full professorship, 30% salary increase, offered by an EU top 3 university".* Another: "*Whenever I get an offer from another university where I can continue my research. And that university offers me better facilities, a bigger budget, international cooperation, I would certainly consider the offer."(int13)*

To the question whether respondents would quit their job within six months the answer was mostly negative: ten out of thirteen. Reasons for doing so were: "*due to my practical (family) situation*"*(int8)* and "*I am building a new research group here."(int11)* A respondent that answered positively to the questions, explained being offered two positions outside UT that were in serious consideration. The two respondents, that argued that this would depend on the offer, again argued that when in the near future *"an offer they could not resist would come by"* they would leave UT.

Seven out of the thirteen respondents answered positively to the question whether, in the past, they have considered to leave UT. Reasons for thinking about quitting their job: "*I was offered a position elsewhere with better career perspectives.*"*(int1)*, another reason mentioned is *"I had too little freedom because of failing leadership of direct supervisor*s." *(int4)*

However in the end all respondents decided to stay with UT. Reasons for doing so were: "*I choose for my family.*"*(int8)* "*I choose for my partner and got better career opportunities within UT.*" *(int4)* Another: "*I got career opportunities within UT.*"*(int6)* And: "*No, did not leave in the end because I got good career opportunities within UT and my partner had a good job in the Netherlands as well.*"*(int4)* Or: "*No because I liked building my own group.*"*(int2)* And: *"No, I found a solution to combine both the challenges here and at the other university."(int1)* A last comment*: "The family situation also played a role, we needed stability at that time."(int8)*

One of the six respondents that did not think about leaving UT in the past argued: "*I have never had thoughts, while working for UT, to quit. After my post Doc I wanted to stay longer. I am happy with the facilities here, the group and the work environment. Leaving UT in the future would be more related to personal motives than work motives.*"*(int10)* Another simply replied: *"No, I did not consider leaving. Because I work for UT just now." (int12)* A third*: "I never actively thought about leaving, although I always have had this dream to being offered a full professorship."(int13)*

5.4.2. Commitment

During the interview the respondents were asked whether they felt at home at UT. Whether they would want to stay forever at UT. Whether they felt they owed UT because UT offered them opportunities. Whether they felt they owed people within UT to stay and whether their family situation influenced their decision to stay at UT. An overview of the results can be found below.

Commitment				
	Yes	No	Partly/ Depends	Total nr. resp.
Feel at home at UT	11	0	2	13
Want to stay forever at UT	3	1	9	13
Owe UT	5	2	6	13
Owe People	3	4	6	13
Family influence	7	4	2	13

Figure 17: Commitment

Eleven out of thirteen respondents answered positively to the question whether they felt at home at UT. When asking what exactly made them feel at home several arguments came forth of which an overview is given in figure 18. One respondent argued: "*What also makes me feel at home is that UT created many chances which positively influenced my career.*"*(int1)* Another: "*It is everything a university should be.*"*(int12)* And: "*I have a fixed contract this makes me feel at home and motivates me to perform at my best.*" *(int12)*

Two respondents only felt partially at home. Reasons for not feeling at home were: "*the matrix organization consumes time and leads to friction.*"*(int9)* and "*there is polarization between the technical and non-technical faculties instead of collaboration.*"*(int4)* Another comment was: *I feel actually more at home within my research group than within the UT organization.*"*(int6)*

Feel at home because..	Feel not at home because..
Studied at UT	Polarization between technical and non-technical faculties.
Personal career opportunities	UT has a small profile
Room to explore new ideas	Too many formal meetings
Room for research	Too much attention for science, instead of technology.
Easy going sphere	Few women in higher positions
UT is relatively small and personal	Many elder employees in higher positions
Striving for international excellence	The matrix organization consumes time and leads to friction.
Cooperation between technical faculties	I work for UT part-time.
The research group and the people working in it.	
UT is an open organization	
I receive rewarding for my work	
Colleagues	

Figure 18: Feeling @ home overview

To the question whether the respondents would like to stay forever working for UT, three respondents were positive. Reasons for doing so were: "*whenever there is enough challenge within my research field, when I get enough opportunities and as long as the atmosphere among colleagues continues to be good.*"*(int6)* And: " *Here I have all freedom and opportunities to do something that really matters: having impact on my direct environment, young people etcetera.*"*(int1)*

One respondent answered negative to this question. Reason for doing so was the respondent would leave UT within a few months.

The majority of the respondents felt that staying forever would depend on several things. One argued: " *I would like to stay coming 5-10 years. After that I just don't know. As long as there are opportunities for me within UT I do not see a reason to leave though."(int12)* Another*: "I might stay, as long as my research continues to be connected to UT. However, whenever I would have the feeling that I stop developing myself I would leave. I find it important to find dynamics in my job."(int11)*

Five out of the twelve respondents felt they owed UT because the organization had offered the respondents career perspective and for example a fixed position. Five respondents only partially found this to be true, they also felt UT owed them or that other organizations would probably have done the same as UT did.

Six of the respondents only partially felt responsible to the people within the organization. Reason for feeling responsible was because they often hired those people themselves and because they were engaged in their research."*In the end other people play a minor role in such a decision. Everyone is replaceable."(int4)*

On the other hand four respondents felt that other people could in the end not be a reason for not accepting a new challenge and thus answered negatively to the question. "*I am committed to the faith of others. I would feel bad when others could not continue their research because I would leave. However, this would not make me stay. In the end you have to strive for your own opportunities and see and value your own perspective."(int12)*

Three did feel responsible. "*Yes, specifically for AIO's this is the case. The moment I would leave their research would disappear as well and they would be unable to finish their Doctorate. That is why I make sure that I don't accept any AIO's in between, I work with periods of four year." (int11)*

Another said*: " Yes, people could be a reason to stay. I would deliberate and choose between my own wishes, those of my family and my research group. If I would not have any career perspective with UT however, I would leave, although this would be a very difficult decision to make."(int6)*

A final question related to commitment that was posed to the respondents was whether their family situation would influence their decision to work for UT. Seven out of the thirteen respondents did feel that their family influenced their decision to stay. Especially respondents with kids argued that they could not leave at this instance because of the education of the children."*Yes, my family does influences my decision not to accept a job elsewhere, especially the age of the children play a role."(int3)* Another*: "Yes, I and my family are in a phase where we have a need for stability. This is something UT offers me."(int1)*

Four respondents felt that this was not the case, as one respondent argued: "*She will pack her bags right away".* And another said*: "No, the opposite is true, my partner would like to move outside Europe as soon as possible."(int2)*

Two felt that there was an influence but only to a slight degree. " *I do not need to leave UT as long as my career perspective is good. Whenever this is not the case and I would be able to find it elsewhere I would go. Although I do find security for the kids of importance.(int6)* Another said: " *To a slight degree it does influences my decision. The dual-career issue should succeed otherwise I will not stay here in the end. But I do think that these opportunities are here, UT is young and ambitious and English is accepted and used on the work floor which makes it easier."(int13)*

6. Analysis

This chapter analyses the results that were presented in the previous chapter. Differences and similarities will be explained, connections between answers and theory sought.

6.1. What are the current and future needs of UT's talents?

6.1.1. Current needs

Analyzing the answers that the respondents gave some similarities and differences could be seen. Similarities in answers were especially found in what the respondents indicated as their most important needs. As was found in chapter 5, their most important needs being: the work itself, autonomy & working with colleagues. "I want to do research." (int10) "I have a need for freedom to do what I want." (int13) "*I have a need for complementary groups and expertise to make each other better.*"(int12) This result matches most of Herzberg findings of motivators, the top three being: achievement, recognition and the work itself (Herzberg, 1987).

Interesting to see is that the respondents indicated that helping young talents develop, ambitious colleagues and an ambitious environment were found very motivating. Herzberg's (1987) study found that the relationship with peers and with subordinates is balanced: both motivating and hygiene factors matter. As possible explanation for the respondent's intrinsic need for ambitious colleagues it could be argued that within the academic environment knowledge sharing and collaboration between colleagues is important. Probably even more important compared to other organization types because it improves the quality of the work itself and the achievements and output of the scientists.

Overall, benefits and perks, stress and hours required to do the job score low on importance. However, discussing benefits and perks, a majority of the respondents do feel that the organization should reward excellent researchers with a bonus (not necessarily money) from time to time. Not to gain extra money but to gain extra recognition and stimulation from the organization. This need for recognition is also indicated as important motivation need by Herzberg (1987). Interesting to see is that especially rewards in the form of sabbatical leave and international conferences were recommended by the respondents.

Work-life balance has not been indicated as a need by the respondents. This, contrary to findings of for example Lewis, Gambles & Rapoport (2007) that the work-life balance of employees gains importance in the last years. However, it is in line with Herzberg's' (1987) findings that work life balance and its instruments are extrinsic basic needs and not motivating at all. Most probably the quality of work and research output is more important to talented researchers than is a balanced work and life. Another reason could be that research talents do not want to compromise their research and thus focus on this solely. "*I work 50-6- hours a week. Working part-time is not really an option in this type of position. Just because then the quality of the research would be guaranteed no more.*" (int12)

Also interesting to see was that when ranking needs by importance; needs as 'career perspective', 'opportunities to develop new skills' and 'salary' was found important. The first two were mentioned more often. However, the last: salary was not mentioned as 'current need' once during the open interview questions. This could indicate several things. First, that although salary does not motivate the talents it is an important work context factor or hygiene factor as described by Herzberg. Second: talents do not value salary in itself but the message that it sends: we recognize your value and reward you for it and feel that this message is not send often within UT. Third, the fact that the respondents did not mentioned the importance of the salary during the open questions could indicate that scientist feel uncomfortable to state that salary is of importance or that their answer was socially desirable.

Although the answers concerning the needs of the respondents were rather similar, the necessary level of these needs and their drivers did vary.

For example, not every respondent needed the same amount of support or needed support for the same reason. One respondent wanted more management support because the expertise on the matter was not sufficient. "*As group leader I do not have expertise on personnel or financial issues. The faculty offers me some support, but not enough. Financial reports are often too complex to guide 10-15 projects. I have a need for more support for these issues.*" (int5) Yet, another respondent wanted management support in order to reduce the time spend on these tasks which ideally should be spend on research. "*I want to spend most of my time on my research and a small amount to management tasks.*"(int4) Another example is that one respondent wanted to teach more in order to develop young talents while another wanted less teaching hours because these hours could be better spend on research.

Also, answers varied within age groups and gender groups. Not all male respondents wanted to educate less nor wanted more support to focus on research tasks etcetera. Female respondents found developing new skills most important while man had a much stronger need, compared to the female respondents for status and recognition. Overall, most answers did seem to be rather similar.

Also some differences in the needs between age groups were found, for example the need for career perspective. Younger respondents have a higher need for this than older respondents do. This result is not strange because younger respondents have more career perspective than their older colleagues do. Just because younger talents have had fewer career advancement yet. However, this does not mean that all respondents of the age group 40-50 did not have any career development ambition anymore or that all respondents in the age group of 30-40 found career perspective their most important need. So, again no general conclusions on what female and male talents or talents of the age group30-40 and 40-50 current needs can be drawn.

6.1.2. Future needs

Questions about respondent's future needs were also posed and analyzed. Overall respondents found it difficult to predict their future needs. Some respondents were not even able to identify what their needs would be in the future. However, as was also indicated in chapter 5, the majority of the respondents felt that their future needs would probably change along with their career path. As for example: the higher in the academic career ladder the more management task would be part of their tasks and therefore the need for management support would increase.

Also, starting as a young researcher the need for independence, development and freedom was assumed to be higher than experienced by older researchers. Most probably, this is the case because these researchers already achieved these needs and strive for higher order needs. As is in line with Maslow's (1943) higher order need theory: the striving for self actualization.

6.1.3. Conclusion

To the question what current and future needs UT's talents have the following answer can be formulated. In general, UT talents have an intrinsic need for the work itself (research), autonomy, achievement, recognition, working with and developing colleagues and peers and finally collaboration or knowledge sharing.

Benefits and perks are indicated as not that important but could, according to the respondents, be of interest to motivate and recognize talents. And Work-Life balance seems not of importance to the respondents because this could compromise the output and quality of their work.

Interesting to see is that salary comes forth as an important instrument to reward and recognize talents more. Respondents feel this instrument could be used more in the organization and feel that sabbaticals and international conferences could serve as best practices.
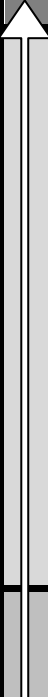
Differences in what talents want were found as well. Overall, there are many varieties in answers, different drivers and different levels of needs that have been indicated. The specific position, ambition and perspective of the talents matter, because this possibly influences the future needs of a talent. Therefore, no general conclusion about what an individual talents need is can be drawn.

An overview of the needs that stem from the field study, compared to the needs that stem from literature can be found in figure 19.

Finally, it was found that the needs of the respondents will change along with their career paths; however their most important need (doing research) will not lose on importance. The development of management and coaching skills are added as a possible future need to the initial needs of UT's talents. But overall the respondents found it very difficult to predict their future wishes.

Figure 19: Needs literature versus field study

	Maslow's Needs	Needs that stem from literature	Needs that stem from field study
Motivational Needs	*Self Actualization Intrinsic*	-Task significance -Personal achievement -Autonomy -Skill variety -Individual growth -Compelling future -Excitement -Job feedback -Personal Development -Challenging work/ projects	- Help young talents develop - Research itself - Winning a grant - To be the best in my research field - Having impact within the world of science - Freedom - Room for new ideas - Improve myself - Enjoying my work - Doing exciting experiments - Focus on research - Personal Development: courses for researchers - Critical mass - Ambitious surrounding & colleagues
Basic Needs	*Esteem Needs Intrinsic* ------------------------- *Esteem Needs Extrinsic*	-Positive Workplace -Performance -Fair treatment -Recognition -Stimulation --------------------------------- -Work-life balance -Status -Security -Total pay -Pay adjustments -Rewards	- Dynamic environment - Recognition (rewards) - Present the work new ideas - Support from management --------------------------------------- - Financial Resources for research - Financial continuity - Good research facilities - Support for management tasks - A better work context

6.2. Are UT's talents satisfied with the current job design and work context?

6.2.1. Job design

Following from the results in chapter 5, the current job design does seem to match the needs of talents. This is probably due to the particularities of the scientific position: researchers in general design their own job and are able to determine their research focus and build their own research group. Also, the match could be due to the relatively high position the interviewed talents have: they already have been indicated as talents and are trusted with responsibility and autonomy. One respondent for example answered: "*Yes I am happy with the design of my job because I can influence it myself.*" *(int12)* Another*: "I can design my job the way I want to. I get a lot of freedom and am able to explore new ideas."(int6)*

Interesting is that in spite of the fact that the respondents do design their own jobs they were able to indicate issues that could be improved. These improvements were very personal and depended on the actual position of the respondent and preferences. For example, more support for management tasks and reducing the workload by using student assistants was mentioned. There were complaints about the large management component of talents' jobs. Also, some of the respondents would prefer more time for their own research and for the development of young talents and colleagues. A final issue to improve was the time spent on lecturing. The answer to the question how to improve the job design was for one respondent: "*by minimizing my education task.*" *(int10)* Another wished to educate more, be more visible within the faculty and spot young talent.

These examples indicate a possible misfit on an individual level between tasks and needs. Most talents did indicate that their highest priority is practicing research. Management and sometimes educational task therefore do not fit their ideal job description.

The current job design also matched most of the time the expectations the respondents had. Especially in the case of the type of work required and the compatibility of colleagues the expectations of the respondents matched most of the time the reality. Career advancement did not always match the expectations of the respondents: they felt their perspective was not made clear by the organization. This is of importance because career perspective was indicated as a very important need for the respondents.

6.2.2. Work context

Overall UT's talents are satisfied with the work context the organization offers. Especially experiencing trust and getting freedom from their direct managers is found important and very positive. Most of the talents do find this trust and freedom to be present at this moment. However, some talents did state that this was not always the case and is strongly depending on the leader.

Another point of attention is the fact that several talents mentioned that personal interest from the executive board was highly appreciated. The individual and personal approach has been indicated as a sort of trust. Also was mentioned that this type of trust and recognition was not always found on faculty level.

The cooperation between groups is experienced to be not optimal and is for some talents even a reason for not feeling at home at UT. As a consequence, researchers within the UT and sometimes even within the faculty do not know from each other what type of research is practiced. No collaboration outside research groups is stimulated.

In relation to collaboration the physical work context was mentioned. Several talents indicated that they would move in the near future towards new facilities and that moving would possibly also improve collaboration between more groups. Also several respondents mentioned that their excellent research facilities enabled them to practice research on a high level and that they were grateful for that. However, these facilities are strongly focused around one (technical) institute.

Several work context items were not indicated as important: benefits and perks, hours required and stress. However, these items did score low on meeting the expectations of the respondents. It was found that there was more stress than expected, that the respondents needed to work more hours than expected and that there was no proper bonus system within the UT organization. Especially the last could be used better by UT to recognize talents more.

6.2.3. Conclusion

Overall UT talents seem satisfied with their job content. They love doing research and are able to place their own research focus, build their own research groups and work with whom they want. However, on individual level they do complain about the amount of management and educational tasks that are placed on their desks which leaves them with less research time.

A possible misfit on the individual level between the content of the job, more specific the various tasks within the research job and the ideal content researchers would like to see has been identified.

Furthermore, the current job design matches most of the time with the expectations of the respondents. Especially in the case of the type of work required and the compatibility of colleagues the expectations of the respondents matched most of the time with the reality. Career advancement did not always match with the expectations of the respondents. This is of importance because career perspective was indicated as a very important need for the respondents. Especially the fact that no clear promotion moments and actions are formulated within UT is found to be a problem.

Also the satisfaction with the work context was analyzed. Overall again UT's talents did seem satisfied with most of the work context, although there were some issues that could be improved. As for example the need for (more) management support: support in finances, personnel issues and administration tasks have been indicated. Also, a more proactive role in career support has been mentioned often as well as the possibilities for more individual based policies and opportunities. Finally, the importance of more collaboration between research groups was named. Several work context items were not indicated as important: benefits and perks, hours required and stress. However, these items did score low on meeting the expectations of the respondents. It was found that there was more stress than expected, that the respondents needed to work more hours than expected and that there was not a proper bonus system within the UT organization. Especially the last could be used by UT to enhance the recognition of UT's talent.

6.3. Are UT's current talents committed to stay?

6.3.1. Intention to stay

As can be seen in the chapter 5 half of the respondents did not intent to leave UT in the near future. They either worked only shortly for UT or felt that their current career perspective was good. However the other half of the respondents did argue that leaving would depend on the offer they would receive. In case an (inter)national university would offer great career perspective the intention to leave would increase. A good offer was being defined by one of the respondents as: "*a full professorship, 30% salary increase and working for an EU top 3 university*" (int13). Career perspective thus seems to play an important role in talents commitment as well as the reputation a university has.

To the question what could make the respondents stay despite such an external offer three answers were given. First, make a better or equal offer than the other universities. Second, offer flexible solutions as working for both universities. Third, offer career perspective to talents. As one respondent said: "*No in the end I did not quit my job because UT offered me the same career perspective as the competitor. What I regret is that it almost seems you need to threat to leave first before new doors will open*".*(int6)*

Remarkably is that whenever was asked whether the respondents would stay with UT when the external offer would be copied by UT, the answer was yes. Thus, in principal the respondents like to stay with the UT organization when having a good career perspective and are actively supported in their career development.

Also results on how many respondents wanted to quit in the past were presented in chapter 5. Half of the respondents did indicate that they considered several offers from other universities but most of the time answered negatively. They felt that UT offered them still the right perspective, did not wanted to stop their current research or felt that UT was the best place to be. Also the home situation played a role in cancelling the offer. For example, no job for a partner was provided or children were not at an age to be moved. Thus, these type of needs have to be provided for talents as well or at least do play a role in their decisions to stay with the organization or leave.

6.3.2. Commitment

The results showed that UT's talents are committed to the UT. Almost all of them felt at home within the university.

Taking a closer look, it can be concluded that the talents feel more attached and at home with their faculty or even their research group than they feel at home at UT. "*Actually I feel more at home with the research group than with UT.*"(int6) This is in line with Kinnie's' theory of professionals and their commitment. Kinnie et al. argue that professionals tend to identify with other like-minded professionals rather than the organization for which they work (Kinnie, Hutchinson, Purcell, Rayton, & Swart, 2005). Research talents work closely with their next colleagues and have only from time to time contact with researchers and employees outside their research group. It is therefore not strange that they don't feel attached or at home to the UT organization as a whole.

Reasons for feeling at home were diverse and very personal. For example a respondent felt at home because he had studied at UT (felt emotionally attached). "*From the beginning of my studies I have been proud of UT. Being proud of the organization and what we do here still makes me feel at home. Also, because I can create this emotion and magic myself: we can become an international well known university.*" (int1) Another liked working for UT because of the autonomy that was a given. Again another because colleagues were very appreciated (job conditions). These types of arguments are in line with affective commitment of Meyer, Allen & Smith (1993) which is based on emotional attachment: someone is working for a company because they 'want to'. This indicates that the job conditions are meeting the expectations of the respondents, as can also be seen in the results.

No comments were found that can lead to the conclusion that continuance commitment is present within the respondent group. Continuance commitment is based on the need for salary or because no other job was available: because they 'have to'. All respondents could easily work for other universities and got offers from other universities on a regular basis. As was indicated in chapter 5, the salary at UT is not meeting expectations and offers outside UT are often better. It could be concluded that UT talents are working for UT and committed to the organization because they are driven by intrinsic needs, not extrinsic needs.

There is some indication that normative commitment is present among the respondents. Normative commitment is based on the values of the employees; they work for the organization because 'it is the right thing to do'. Personal values and felt obligations will lead to normative commitment (Meyer, Allen & Smith (1993). To the question whether they felt they owed UT or the people working within the organization and whether this would influence their intention to stay with the organization often the answer was positive. "*Yes, I would not like to leave my research group because I build the group myself.*"(int3) "*Yes, I feel responsible. Although I would find a solution when I would decide to leave. I could finish projects, bring students with me. The problem is that starting the research elsewhere means starting from scratch. You need to get to know people and structures and build your research again.*"(int5)

However, there were also respondents that answered that they felt no obligations to the people or the organization. And there were respondents that felt slightly responsible to the people in the organization be found that in the end they would leave whenever the offer for a new challenge was good enough. "*I could feel obliged to stay, but in the end this would not be my main concern. Everyone is replaceable.*"(int4)

In general can be said that UT's talents are committed to their work, their ambitions and their colleagues and as long as the university provides them with means and with perspective they will be committed to the organization.

6.3.3. Conclusion

Overall UT's talents do intent to stay with the organization, some for a short while and some even forever. Reasons for not wanting to stay are connected to better career perspective, more challenges elsewhere. The better the offer they will get the more eager they will be to leave the organization. UT can counteract this movement by: making an equal or better offer, make a special deal that the talent will partly work for the other university, offer the talents early in their career perspective.

Several talents have thought of leaving UT in the past. However most of them did not leave in the end. Important needs that make them stay in the end are the position and job situation of their partner and the education of their children.

Next to wanting to stay at UT they are committed to their research group and faculty. Sometimes they even feel committed to the organization as a whole but often this is not the case. This is due to the structure scientific talents are working in and the fact that collaboration over faculty borders is not always stimulated.

UT's talents are both affective and normative committed to the organization. This means that they want to work for UT because they like working for the organization. The organization offers them sufficient job conditions and meets their expectation. Also, they are influenced by obligations they feel having to the organization and the people working in it. The respondents are not committed for continuance reasons: they do have enough other opportunities working elsewhere.

7. Conclusion & Recommendations

This chapter will formulate an answer to the central research question: What should the University of Twente do in order to increase motivation and commitment of talented scientific staff? However, before that the limitations of this research will be elaborated on. This chapter ends with recommendations for the University of Twente.

7.1. Limitations

Before elaborating on the conclusions of this research, the limitations of the research and their implications for the conclusion will be discussed.

A first limitation considers the selection and compositions of the research group. The research has been executed among a very small group: 13 respondents. Furthermore, the research was executed among a very selective group: only researchers that won grants or awards or had tenure track potential were selected. Also, foremost technical male respondents took part in this research. This is possibly due to the used selection criteria: mostly technical males won prizes and awards.

The above mentioned limitations have some consequences for the conclusion: generalized conclusions could not and have not been made. Only some indications and more insight in the motives and needs of individual UT talents have been the result. Also, strong conclusion concerning differences between male and female respondents or between age groups could not been made. Again only some indications were found and stated.

In order to be able to generalize the conclusions found further research should be done among a bigger group of talents. Also, it could be recommended to expand the definition of who will be indicated as a talent by the organization. For example, also researchers that bring in big assignments and thus money could be indicated as talents. And what to think about very talented teachers? Next to broadening the definition of talent the scale of the research could be expanded. This type of research should be conducted in various universities in order to be able to draw some conclusions for university organizations as a whole. Also, it could be interesting to do research among only male and only female respondents to be able to compare the results and to generalize these results.

The second limitation is the type of research used. Because of the limited time available, this research used qualitative data gathering to get as many as insight information in the needs and motives of talents.

In order to make a more solid statement and draw solid conclusions a quantative research could be added. Among a large population, this research could take a closer look at what talents want and what their motives are. What they feel UT should improve to make them more committed to the organization. After this research a qualitative research could be executed to verify the results from the first study and to get more in-depth information.

Third, only researchers that work for UT at this moment have been interviewed. Interesting to see is what researchers that left UT think of UT as employer. What were their needs and did they leave UT because these needs were not met? Exit interviews could be held in order to find the driving force behind their new career move. With the help of this information UT could improve its retainment policy and further reduce the turnover rate. Next to that UT could learn from other university strategies: how can UT attract talents from other universities.

Fourth, only scientific research talents have been interviewed, but what about the rest of the employees: supporting staff, teachers etcetera. Do their needs, motives and commitment change significantly from talents? And what is the effect on this group when all the attention goes to talents in the organization? Will this influence their commitment and satisfaction with UT as employer? UT should keep in mind that focusing on one particular group could lead to dissatisfaction of the group that was not focused on. UT can choose to accept these differences that could lead to possible dissatisfied employees and even employees leaving the organization. However UT could also choose to set up a special program to prevent this from happening. Or could argue that the talent focus group is the first of many focus groups.

7.2. Conclusion

In order to answer the central research question first a literature study was conducted. From this followed that talents have individual needs and motivators that influence their intention to stay with an organization. Basic needs and motivational needs have been distinguished, the first leading to no dissatisfaction and the last leading to satisfaction.

Also systems that can fulfill the needs of talents have been identified. Intrinsic systems can be used to enhance the motivation while extrinsic systems can be used to fulfill the basic needs.

In the end a model has been drawn that proposes the following: in order to increase job retention a fit between employee needs and motivators and intrinsic and extrinsic systems should be achieved. By doing this the employee will be more committed to the company and turnover will be reduced. This will enhance the retention rate of the employees and lead to increased performance.

The literature study was followed by a field study. The field study indicated that UT talents have an intrinsic need for the work itself (research), autonomy, achievement, recognition, working with and developing colleagues and peers and finally collaboration or knowledge sharing. The last three also motivates them mostly.

Furthermore, interesting to see is that benefits and perks are indicated as not that important but could, according to the respondents be of interest to motivate and recognize talents. Work-Life balance seems furthermore not of importance to the respondents because this could compromise the output and quality of their work. Interesting to see is that salary comes forth as an important instrument to reward and recognize talents more. Respondents feel this instrument could be used more in the organization and feel that sabbaticals and international conferences could serve as best practices. Differences in what talents want were found as well. Overall, there are many varieties in answers, different drivers and different levels of needs that have been indicated. The specific position, ambition and perspective of the talents matter, because this possibly influences the future needs of a talent.

Finally, it was found that the needs of the respondents will change along with their career paths; however their most important need (doing research) will not lose on importance. The development of management and coaching skills are added as a possible future need to the initial needs of UT's talents.

Overall UT talents seem satisfied with their job content. They love doing research and are able to place their own research focus, build their own research groups and work with whom they want. However, on individual level they do complain about the amount of management and educational tasks that are placed on their desks which leaves them with less research time.

A possible misfit on the individual level between the content of the job, more specific the various tasks within the research job and the ideal content researchers would like to see has been identified.

Furthermore, the current job design matches most of the time with the expectations of the respondents. Especially in the case of the type of work required and the compatibility of colleagues the expectations of the respondents matched most of the time with the reality. Career advancement did not always match with the expectations of the respondents. This is of importance because career perspective was indicated as a very important need for the respondents. Especially the fact that no transparent promotion moments and actions are formulated within UT is found to be a problem.

Also the satisfaction with the work context was analyzed. Overall again UT's talents did seem satisfied with most of the work context, although there were some issues that could be improved. As for example the need for (more) management support: support in finances, personnel issues and administration tasks have been indicated. Also, a more proactive role in career support has been mentioned often as well as the possibilities for more individual based policies and opportunities. Finally, the importance of more collaboration between research groups was named. Several work context items were not indicated as important: benefits and perks, hours required and stress. However, these items did score low on meeting the expectations of the respondents. It was found that there was more stress than expected, that the respondents needed to work more hours than expected and that there was not a proper bonus system within the UT organization. Especially the last could be used by UT to enhance the recognition of UT's talent.

Finally, UT's talents do intent to stay with the organization, some for a short while and some even forever. Reasons for not wanting to stay are connected to better career perspective, more challenges elsewhere. The better the offer they will get the more eager they will be to leave the organization. UT can counteract this movement by: making an equal or better offer, make a special deal that the talent will partly work for the other university, offer the talents early in their career perspective.

Several talents have thought of leaving UT in the past. However most of them did not leave in the end. Important needs that make them stay in the end are the position and job situation of their partner and the education of their children.

Next to wanting to stay at UT they are committed to their research group and faculty. Sometimes they even feel committed to the organization as a whole but often this is not the case. This is due to the structure scientific talents are working in and the fact that collaboration over faculty borders is not always stimulated.

UT's talents are both affective and normative committed to the organization. This means that they want to work for UT because they like working for the organization. The organization offers them sufficient job conditions and meets their expectation. Also, they are influenced by obligations they feel having to the organization and the people working in it. The respondents are not committed for continuance reasons: they do have enough other opportunities working elsewhere.

Concluding: *What should the University of Twente do in order to retain their talented scientific staff?* UT's talents are motivated and committed to stay at UT. In order to make sure talents will be retained UT can take several actions. However, the most important conclusion lies with the need & system fit stage of the model that was proposed in chapter four.

In general, a fit between UT talents needs and the systems the UT uses in order to keep them satisfied seems present. However, zooming in on the individual demands, needs, level of needs and type of systems it seems that every need asks for a personal approach. Support from within the faculty is wished for, but not for the same reason and not on the same level. One talent likes to teach more, the other likes to teach less. Management tasks are loved and seen as career perspective, while others see is as distraction from what really motivates them: practicing research.
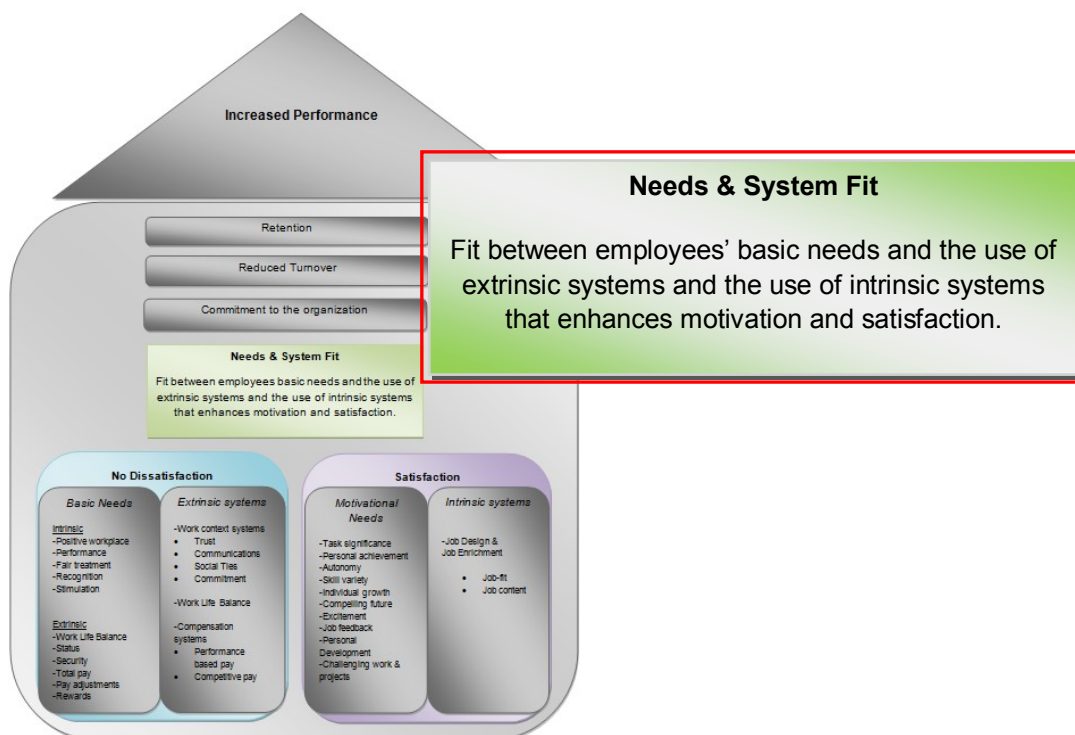

Figure 20: Needs & System fit

Some general conclusions that improve the fit between needs & systems can be drawn. These are: <u>increase the support</u> for talents, offer transparent and good <u>career perspective</u> and <u>recognize and reward</u> talents more.

First of all, UT should realize and recognize that research is the driver of their talents: this motivates them most. Therefore, talents should be *supported* with several tasks that are related to management: financial & personnel. Also, basic support (data cleaning) could be offered in the form of student assistants that will reduce talents work load.

Second, UT should offer a transparent and ambitious *career perspective*. The main reason why talents leave UT are because of better career perspectives with other universities or because they feel that their contribution is not valued enough within UT. Creating transparent career paths that are customized for talents. Also, a fixed job position should be offered by UT, this is highly valued by UT talents and is seen as a form of recognition for their work and performance.

Third, UT should *recognize and reward* its talents more. Talents feel that this is not the case in the current situation. Recognition and reward can be in the form of sabbaticals. Offering talents to go to international conferences and to include them more in faculty and organizational issues, when asked.

But most of all, UT should give *individual attention* to its talents. All these improvements should be applied on an individual basis. Making sure that every talent within UT will have an individual based need and system fit. This will increase the satisfaction and commitment of the talents and will in the end hopefully retain the scientific talents for UT.

7.3. Recommendations & implications for UT

From this research several recommendations and implications for the University of Twente can be deducted. This section will do so based on the conclusions that were drawn in section 7.2.

7.3.1. A tailor made Talent Retention Policy

UT should realize, based on the conclusions in this research, that talents have very individual needs. Although some similarities in needs have been found, the most important recommendation is to advice all talents on an individual level. How can their needs be matched with the retention systems UT offers? This advice could be given by the personnel advisors together with the Dean and professors within each faculty. These employees know which scientific staff members are and can be indicated as talents within the faculty. Next to that the personnel advisors are able to identify the ambitions of these talents or are able to retrieve this on an individual level. However, dedication and support for this approach should not only be placed with the personnel advisors and department. Also, the executive board and faculties should support a tailor made talent retention policy and the actions needed to customize the need & system fit.

7.3.2. Increase support for talents

A first more general recommendation that can be given based on the fact that the majority of the talents of this research indicated it of importance: more support. Two types are recommended:

1. Provide (management) support for UT talents.
    This research indicated that the interviewed talents would like to be able to focus more on their most important need: doing research. As their career develops the amount of management tasks increases. By supporting talents in their management tasks: helping with research group finances, personnel issues and reducing the administration task, more time will be left for their intrinsic needs. Doing research, educating and spotting new talents will increase their motivation.
    Support for reducing the administration task of talents could be for example supplied by student assistants. These students are smart enough to do the job and are relatively cheap. By offering students a supporting position at the start of their studies a continues support for talents can be created. A positive side effect of this solution is that students will gain a good idea what research is about and may be positively influenced to choose for a scientific career. Financial and personnel support could be offered by a special support officer per faculty. This way this officer can support several talents at the same time. It is cheaper and more effective to create such a supporting position than letting more expensive and less experienced talents do these tasks. At the same time, the free time can be spend on practicing research which enhances the motivation of the talents.

2. Provide UT talents with a mentorship and coaching program.
    The respondents indicated that they appreciated the existing mentorship program which was set up to bring young (female) talents in contact with experienced researchers outside their faculty. Recently the program was extended to male talents as well.
    It is recommended that this mentorship program is better promoted among talents. This way all talents can benefit from the service that the program offers: help with career decisions and other issues that drive talents. Next to that the program could be professionalized. The program could be focussed more on personal contact between talents and their mentors from the beginning. More meetings between talents and mentors could be held for example organized in themes that are specifically interesting for talents who want to advance in their scientific career.
    Also coaching of talents is of importance. Coaching on competences could be introduced for all UT talents. Goal of such a program is to develop special competences of UT talents. This will help them during their career and will ensure continues development.

7.3.3. Tailor made development programs

The second recommendation is based on the need of talents to develop: tailor made development programs should be offered by UT (both in English and Dutch). Development is seen as a personal need but is also indicated as a way of increasing career perspective. Two types can be distinguished:

1. Provide individual development support.
   In cooperation with the faculty personnel departments a development program, on individual basis, should be offered. This program should prepare talents for new career steps. As for example management skills, supervising & teaching skills.
   At this moment UT offers a specific set of trainings that is selected by the central P&O division. This current set of trainings could be used to develop the talents. However, also the possibility to follow courses that are not generally offered to UT employees should be supplied. Whenever it is in the best interest of the development of a specific talent courses should be arranged, perhaps using external bureaus. Also, following courses should be promoted and offered more actively by the personnel advisors. Following courses with fellow talents has not only the advantage of development, it has an extra advantage: bonding and increasing collaboration between researchers which increases their commitment as well.

2. Provide talents sabbatical opportunities
   Several (older) UT talents argued that (young) talents should expand their horizon from time to time. Building and enrich their knowledge with international experience. One way to do so, which is according to this research also seen as a reward by the respondents, is stimulating them to apply for a sabbatical.
   The sabbatical should be seen as an opportunity for new research insights, new developments and ideas for further research within UT. In the end the idea is that a talent will be stimulated and be motivated more, inspired by new ideas. Next to that, it benefits the organization because it can ultimately lead to new breakthroughs in research. Therefore, ideally, a sabbatical for talents is stimulated on individual basis by the direct supervisor of the talent on faculty level. UT should arrange budget (on central level) to stimulate this opportunity and should actively support applications by supporting talents: taking over their teaching and management tasks.

7.3.4. Career Perspective

A very important recommendation is to make sure talents within UT have a transparent and good career perspective. Without this perspective their temptation to leave the organization for an organization with better perspectives will increase. This recommendation is fourfold:

1. Provide individual career perspective.
   The personnel departments of each faculty should offer talents career support, on individual basis. The P-department in cooperation with direct supervisors of talents should identify which talents should be offered new career opportunities before external parties do. For example when winning (inter)national awards or big publications are expected.
   Also, talents should be advised in career moves and in career offers. This support should be offered by direct supervisors and the faculty P&O advisors. The career of the talent should be the main driver of interest here, second the retention of the talents comes to mind.

2. Offer talents a fixed job position
   This research indicated that talents would appreciate UT offering them a fixed contract. They experience this as recognition for their work and talent. When offering a Tenure Track on a temporary basis (six years) the interviewed talents feel that they are not valued enough: it sends the wrong message 'you are talented, but we don't want to keep you'. Therefore it is recommended that UT can make an exception on their Tenure Track policy by offering real talents that are carefully selected, a fixed job position during their track. In case some of these talents do not have the perspective that was expected a fixed job position within the faculty on individual level should be sought.

3. <u>Provide a clear career path from start with objective decision points.</u>
   From the beginning talents should be offered a clear career path. What is their potential within the organization and how will they achieve this. The tenure track system is one mechanism to do so. However, as was indicated earlier, a downside of this instrument is that is does not offer stability or job security to talents.
   Next to a transparent career path, there is a need for objective decision points on which talents are promoted. This gives talents more insights in their chance to be promoted as well and enable talents to have influence on this chance, for example by following trainings. A way to do so is to work out the various applicable UFO profiles per faculty in competencies. This way, every step on the academic career ladder will be widely known, as well as the road to get there.

4. <u>Make deals with talents that want to leave UT to return in the (near) future.</u>
   Some talents do want to leave UT because they are offered a once in a lifetime opportunity. The key to retain these talents in the future is to offer them the space and time needed for this phase and give them future career perspective. After years working elsewhere the talent could be of great value for the UT organization. The particular faculty should decide and estimate whether job options will occur in the future and offer them to current talents.

7.3.5. Recognition

Talents want to feel welcome within the UT organization, want to be appreciated and recognized for their abilities. Two recommendations are therefore focussed on the recognition aspect of talents within the UT organization.

1. <u>Give special attention to talents at all organizational levels.</u>
   The current respondents argued that they would like to be more involved in faculty or in organization trends. As an example was mentioned the personal invitation to meet the UT president, which was interpreted as very positive. More of these initiatives, both on faculty and organization level should be executed. Examples of such meetings could be the professor activities that are currently organized. Also Tenure Track activities or meetings could be organized. Doing so is a form of recognizing and appreciating talents.

2. <u>Bring talents together to increase collaboration between faculties and research groups.</u>
   Several respondents argued that there should be more collaboration between faculties and research groups in general. Bringing talents together more often and let them participate in faculty and organization wide structures could improve this. Also special inter-faculty drinks or events could enhance the collaboration. A stronger connexion with more than one faculty or research group makes talents feel more part of the UT organization as a whole. This is recommendable because UT talents seem to feel more committed on faculty or research group level than on university level.

7.3.6. Recommendations specifically for UT personnel department

Next to the above standing recommendations, some recommendations specifically for the UT personnel department can be given. These are described below and serve as food for thought for the P&O department.

1. <u>Gradually stretch an individual talent policy to the rest of the workforce.</u>
   The client friendly strategy of individual need and system matching for talents could gradually be used for other personnel types as well. In case the P&O assistants have positive experiences working on a tailor made basis for talents this could also be practiced on young personnel, or quick advancing personnel. In the end this could even be used for the whole workforce within UT. However, this trend could reduce the incentive for employees to work harder to become a beneficiary of the individual talent approach. Therefore gradually this practice should be used, expanded to more groups and evaluated.

2. Link talent management with leadership management.
    During the interviews the important role leaders have within the management of talents was highlighted. Leaders should spot talents, recognize them, inspire them, push them to the limits and guide them through their career. Also, several recommendations stress the importance of the role of supervisors. At the moment a manager is not always able to do so because these skills are not developed or even not present. This way the talent machine stands still. Therefore leadership management, especially how to manage their talent, is of importance. Training should be given to managers in order to help those spot and guide talents and offer them the opportunities and freedom they need to excel.

3. Hygiene factors = central, motivation factors = faculty level.
    The UT P&O department is organized on both central and faculty level. It is recommended to organize hygiene factors on the centralized P&O level. These are the basic needs and systems of talents that do not require tailor made service but should be offered on a high level. The central P&O department is able to supply this type of service.
    Motivation needs and systems should be organized and executed at faculty level. Although, this system could be developed on a central level. These needs and systems should be tailor made for each individual talent. The faculty P&O advisor does have the information and contact to do so. Combined with the knowledge and contacts of the direct supervisor and dean of the faculty.

4. Train P&O advisors for their new role as career advisor & supporter.
    At this moment P&O advisors mostly work on an on-demand basis. They do what the organization asks them to do. In order to switch to a tailor made approach where not the organization but the client (talents) are the centre of interest P&O advisors should be trained. They should be trained in a service approach, should be trained how to guide talents during their career, what type of options could be offered to talents and how to work with a custom made approach in a bureaucratic environment.

7.3.7. Recommendations specifically for UT management

Also, some recommendations specifically for the UT management can be given. These are described below and serve as food for thought for the management.

1. Accept differences in working conditions
    The management of UT should accept differences in primary and secondary work conditions for their employees. The only way tailor made service for talents will work is by accepting differences in conditions between employees. UFO profiles should be still applicable but should be able to be used flexible. Especially secondary work conditions should be able to vary per individual without being afraid for copying behaviour.

2. The UT definition of talent should be broadened.
    At this instant, as was written in the limitations section, UT is using a very small definition of a talented employee. Therefore it is recommended to expand this definition and include for example teaching talent and management talent. Next to that as condition should be added researchers that are able to attract big projects.

3. Stimulate the tailor made talent approach by setting a budget.
    All these recommendations costs money, although several can in the end lead to more efficiency and therefore gains. In case UT management still wants to place a focus on talent management in order to become an international top university with top scientist a budget should be set. UT management should budget for sabbatical leave, extra courses, custom made arrangements and extra support for talents.

4. Support scientific communication more.
    Talents' are motivated by exposing the outside world their ideas. At this moment several talents argued that the scientific communication support is unsatisfying. By actively supporting talents communicating research outcomes the motivation for their work will increase.

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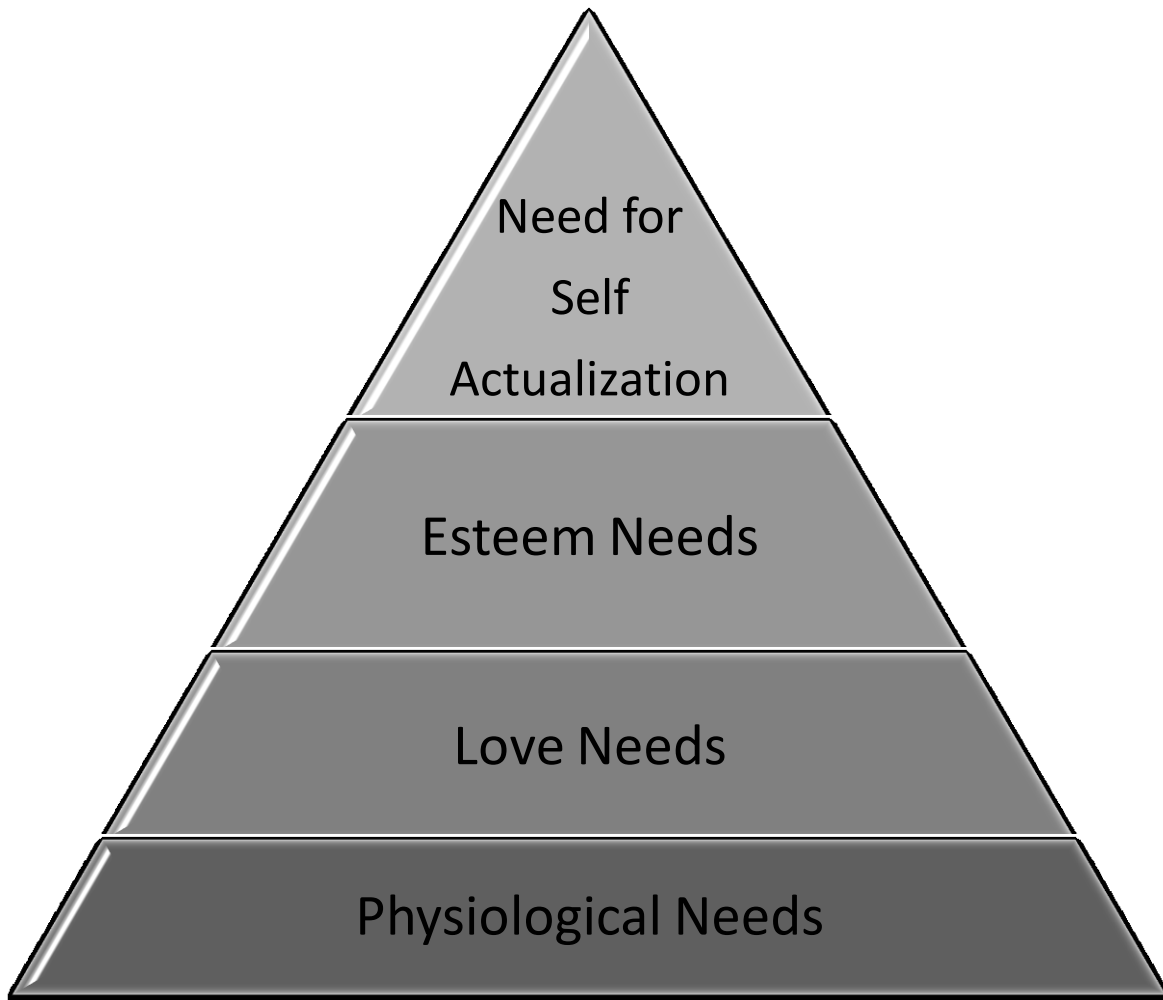
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Appendixes

A. Maslow Need Pyramid

Need for Self Actualization

Esteem Needs

Love Needs

Physiological Needs

B. Herzberg Hygiene Theory

Determinants job satisfaction:
- Task achievement
- Recognition
- Intrinsic interesting tasks
- Increased tasks responsibility
- Advancement
- Possible growth

Job Satisfaction

Determinants job dissatisfaction:
- Company policy
- Supervision
- Salary
- Personal life
- Status
- Interpersonal relationship with subordinates
- Interpersonal relationship with peers
- Interpersonal relationship with superiors
- Job Security

No Job Dissatisfaction

C. Checklist identifying talents

General points of attention for all talents
- Is able to learn quickly and takes the initiative - Is trying to collect specific know-how, also internationally - Is innovative and comes up with new ideas - Is entrepreneurial - Is open to feedback and learns from it - Is able to initiate and keep internal and external relations

Specific points of attention for each talent group		
Scientific Staff	**General staff (management)**	**General staff (advisor)**
- Acquired funds (minimum k€ 500) - Cum laude doctors' degree - Won prizes - International experience	- Finds opportunities to learn - Operates in an honourable manner - Is able to deal with culture differences. - Plans to influence in a positive manner - Tries to collect specific management know-how. - Brings up the best in people - Has insight, sees things from new points of view. - Has the courage to take risks. - Asks for feedback and learns from it. - Learns from mistakes - Is open to criticism	- Ability to listen - Be conscious of environment - Result oriented - Ability to analyse problems - Tactfully - Communications skills

D. Interview Protocol

Central Research Question:

What should the University of Twente do in order to retain their talented scientific staff?

	Sub question 1: What are the current and future needs of scientific talents within the University of Twente?		Sub question 2: Do the needs of scientific talents within the University of Twente match the current job design and work context?		Sub question 3: Are UT's current talents committed to stay with the organization?	
	IQ 1: Current Needs	IQ2: Future Needs	IQ3: Satisfaction with work context?	IQ4: Satisfaction with job design?	IQ5: Intention to stay	IQ6: Commitment
Questions						
1. What needs do you currently have in your job?	X					
2. Are those needs met when working for UT in your current position?	X					
3. Which of your current needs are met and which are not?	X					
4. Could you identify which of your current needs are most important to you?	X					
5. Which of your current needs that are being met by the organization motivate you?	X					
6. Are the other needs you mentioned less important to you?	X					
7. In the future, do you expect having different needs than currently?		X				
8. Can you describe those future needs? / Why not?		X				
9. What do you think is influencing your change in needs over time?		X				

Question						
10. Overall are these future needs related to your motivation to do your job as good as possible or would you qualify them as basic needs that have to do with for example your physical work environment?		X				
11. Are you satisfied with your current job?			X			
12. Why is that?			X			
13. Looking back over your career so far, indicate the extent to which your expectations in the following cases have been met: - salary - career advancement - opportunities to develop new skills - status/prestige - influence in the organization - stress - hours required - quality of supervision - compatibility of colleagues - type of work required - physical conditions - benefits and perks.[3]			X	X		
14. Could you order these cases starting with the most important one and ending with the least important one?			X	X		
15. Are you satisfied with the design of your job?				X		
16. Do you have any ideas how to improve the design of your job?				X		
17. At this point in your career, would you want to quit your current job, if it were possible?					X	
18. Why is that the case?					X	

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[3] Rosin and Korabik 1991

19. Are you actually planning to leave your job within the next six months?					X	
20. What are reasons for doing so?					X	
21. Have you ever had thoughts, while working for UT, of leaving your job?					X	
22. At that point, what were reasons for these thoughts?					X	
23. Did you actually quit the job?					X	
24. Do you feel at home within the UT organization?						X
25. Can you give some examples of things that make you feel at home? And some that make you feel not at home?						X
26. Would you want to spend the rest of your career within the UT organization?						X
27. Can you give some examples? / Why not?						X
28. Would you stay working for the UT because you feel you have an obligation to the people in it?						X
29. Does your home situation influences your decision working for the UT?						X

E. Interview format

Introduction

My name is Janine Rebel and I am a Business Administration (HRM track) student from the University of Twente. During my internship at UT I am studying the needs of talented scientific staff. The overall goal of this research is to advise the university what talented scientific staff needs are and what motivates them in order to retain as many talents as possible for the organization.

As was stated in the invitation e-mail you received, you were selected because (in the past) you have acquired a grant (VENI / VIDI / VICI / SPINOZA). Acquiring these types of grants is one of the characteristics of scientific talents that UT is using. I have tried to select a diverse group of respondents to receive as much information as possible.

With your consent this interview will be recorded and transcribed, is this ok? Your answers will be treated with confidentiality and the data will be used with your permission without referring your name or title. The interview will, at a maximum, take 1 hour of your time. Do you have any further questions before we start?

Personal Non Work related attributes

Q1: What is your name?

Q2: What is your age?

Q3: What is your family situation?

Personal Work related attributes

Q4: Can you give me a description of your job?

Q5: Which faculty & department are you part of?

MB / TNW / EWI / GW / CTW
Department:

Q6: For how long are you working for UT?

Q7: How long are you practicing your current job?

IQ 1: Current Needs

Q8: What needs do you currently have in your job?

Q9: Are those needs met when working for UT in your current position?

Y/ N/ M

Q10: Which of your current needs are met and which are not?

Q11: Could you identify which of your current needs are most important to you? Order them from important to less important.

Q12: Which of your current needs that are being met by the organization motivate you?

Q13: Are the other needs you mentioned less important to you? → Why not? / Why is that?

IQ2: Future Needs
Q14: In the future, do you expect having different needs than currently?

Y / N / M

Q15:   Y → Can you describe those future needs?
        N → Why not?

Q16: What do you think is influencing your change in needs over time?

Q17: Overall are these future needs related to your motivation to do your job as good as possible or would you qualify them as basic needs that have to do with for example your physical work environment?

IQ3: Satisfaction with work context
Q18: Are you satisfied with your current job?

Y / N / M

Q19: Why is that?

Q20: Looking back over your career so far, can you indicate the extent to which your expectations in the following cases have been met?

Salary	Y/ N
Career Advancement	Y/ N
Opportunities to develop new skills	Y/ N
Status/ Prestige	Y/ N
Influence in the organization	Y/ N
Stress	Y/ N
Hours required	Y/ N
Quality of supervision	Y/ N
Compatibility of colleagues	Y/ N
Type of work required	Y/ N
Physical conditions	Y/ N
Benefits and perks	Y/ N

Q21: Could you order these cases starting with the most important one and ending with the least important one?

Salary	
Career Advancement	
Opportunities to develop new skills	
Status/ Prestige	
Influence in the organization	
Stress	
Hours required	
Quality of supervision	
Compatibility of colleagues	
Type of work required	
Physical conditions	
Benefits and perks	

IQ4: Satisfaction with job design

Q22: Are you satisfied with the design of your job? → Why is that the case? / Why not?

Q23: Do you have any ideas how to improve the design of your job?

IQ5: Intention to stay

Q24: At this time in your career, would you want to quit your current job, if it were possible?

Y/ N/ M

Q25: Why is that the case?

Q26: Are you actually planning to leave your job within the next six months?

Y/ N/ M

Q27: What are reasons for doing so?

Q28: Have you ever had thoughts, while working for UT, of leaving your job?

Y/ N/ M

Y → Q29: At that point, what were the reasons for these thoughts?

Y → Q230: Did you actually quit the job? Why? / Why not?

IQ6: Commitment

Q31: Do you feel at home within the UT organization?

Y/ N/ M

Q32: Can you give some examples of things that make you feel at home? And that make you feel not at home?

@ home:
Not @ home:

Q33: Would you want to spend the rest of your career within the UT organization?

Y/N/M

Q34: Why is this the case?

Q35: Do you feel that you owe a great deal to the UT?

Y/N/M

Q36:   Y → Can you give some examples?
         N → Why not?

Q37: Would you stay working for the UT because you feel you have an obligation to the people in it?

Q38: Does your home situation influences your decision working for the UT?

=

Thank you for your cooperation. I ran out of questions! Do you have any further questions?

F. Current Needs

Current Needs

Ambitious surrounding and colleagues	10
Need to be able to focus on research not secondary issues.	6
Freedom to determine research focus	5
More support for management tasks / Less Management tasks	5
Financial resources for research	4
Supportive and positive management	4
Good research facilities	4
Dynamic environment	3
Room for new ideas	2
Spent as much time on research, not education.	2
Surrounded by a critical mass	2
Enjoying my work	2
Collaboration with other disciplines within UT	2
Room to buy new material/ machines when necessary	1
More active career & personal development support	1
To be the best in my research field	1
Winning a grant	1
Financial continuity	1
Room for personal development	1
Professional people both in supporting as scientific staff	1
Training for English publication	1
Courses for young researchers	1
A better work context (climate system)	1
Higher financial rewards for supporting staff	1
Better communication on research issues	1
Combination of education and research with focus on research	1
Freedom to design job	1
Environment working in same pace as the research is evolving.	1
Independence	1
Challenges	1
Appreciation	1
Rewarding output	1
Career perspective	1

G. Male- female needs

Male		Female	
• **Type of work that you do**	*2.7*	• **Opportunities to develop new skills**	*2.3*
• Compatibility colleagues	*4.0*	• Compatibility colleagues	*2.6*
• Career Perspective	*4.0*	• Salary	*4.6*
• **Opportunities to develop new skills**	*4.3*	• **Type of work that you do**	*5.6*
• Salary	*5.0*	• Career Perspective	*5.6*
• **Status/ Prestige**	*5.3*	• Influence in the organization	*6.4*
• Influence in the organization	*5.7*	• Quality of supervision	*8.1*
• Quality of supervision	*6.0*	• **Status/ Prestige**	*8.3*
• Physical (work) conditions	*7.3*	• Benefits and perks	*8.3*
• Benefits and perks	*8.3*	• Physical (work) conditions	*8.4*
• Hours required to do the job	*10.3*	• Stress	*8.9*
• Stress	*10.7*	• Hours required to do the job	*9.0*

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