ISCTE ⊘ Business School
Instituto Universitário de Lisboa

Dual Master@3DS: Proposal and Design of a New Career Paths at Dassault Systêmes

**Katherina Darellas**

**ISCTE Business School**
**Instituto Universitário de Lisboa**

Dual Master@3DS: Proposal and Design of a New Career Path

at Dassault Systèmes.

**Katherina Darellas**

*Abstract*

Investing in talent management is getting crucial for modern organizations due to the need for businesses to become more strategic and competitive. Moreover, talent management is motivated by the fact that it has been found to lead to higher corporate profits when connected to the corporate strategy. The purpose of this project is to conceptualize a talent program at the company Dassault Systèmes which connects the need to secure talents long-term. A survey was concluded in support of the project. Data from 50 graduates revealed an insight of the perception of the company Dassault Systèmes and the graduates' expectations on the proposed project. Moreover, the findings of the survey are compared to the project's framework as well as to a comprehensive literature review. The analysis leads to the project's suggestions that Dassault Systèmes understands the need to redefine its corporate strategy and that talent management needs to integrate HR practices. Furthermore, long-term career paths and rewarding packages emerged as important issues to the respondents of the survey. To guide the organization in accelerating talent management and to support the transformation of the talent sourcing and development policy, the project proposes a concept. Based on a developed strategy for the company's needs, the following is presented: Dual Master@3DS: proposal and design of a new career path at Dassault Systèmes.

**Keywords:** In-company project, talent management, graduates, human resource practices

## Resumo

O investimento tem vindo a tornar-se crucial para as organizações modernas devido à necessidade que os negócios têm de se tornarem mais estratégicos e competitivos. Adicionalmente, há uma motivação para gerir talento por este estar ligado a melhores resultados quando alinhado com a estratégia organizacional. O objetivo deste projeto é o de conceber um programa de talento na empresa Dassault Systèmes que responda à necessidade de reter talentos no longo prazo. Foi realizado um inquérito por questionário para apoiar o projeto. Os dados provenientes de 50 licenciados evidenciaram as suas perceções relativamente à empresa bem como as suas expectativas relativamente ao assunto do projeto. Adicionalmente, são comparados os resultados do inquérito com o quadro de referência do projeto bem como com a literatura revista. A análise levou a recomendações de que a Dassault Systèmes compreenda a necessidade de redefinir a sua estratégia organizacional e que a gestão de talento precisa de ser integrada nas práticas de RH. Mais ainda, emergiu a importância dos percursos de carreira de longo prazo e pacotes de recompensa para os participantes. Para guiar a organização na aceleração da gestão de talento e para apoiar a transformação da política de atração e desenvolvimento de talento, o projeto propõe um conceito. Com base numa estratégia desenvolvida para as necessidades da empresa, é apresentado o seguinte: Dual Master@3DS: proposta e desenho de um novo percurso de carreira na Dassault Systèmes.

**Palavras-chave**: Projeto, gestão de talentos, graduados, práticas de recursos humanos

# Table of Contents

# Table of Figures

# List of Abbreviations

3DS…………………………………………………………….3DEXPERIENCE company

AC……………………………………………………………….…...Assessment Center

CLG……………………………………………………….……….….Career Level Guide

DS……………………………………………………….…………....Dassault Systèmes

EB……………………………………………………………….....Employer Brand

ECAL………………………………………….………………………….EuroCentral

EVP……………………………………………………….…..Employer Value Proposition

FTE……………………………………………………………..Full - Time - Equivalent

HR……………………………………………………….……….…...Human Resources

HRBP……………………………………………….........Human Resources Business Partner

HRD…………………………………………………………….Human Resource Development

HF …………………………………………………………….……...Hiring Form

JA ………………………………………………………….…......Job Advertisement

TD…………………………………………………………...........Talent Development

## *1. Introduction*

Attracting and retaining highly talented employees and to strengthen competitive advantage is an important issue for companies in all scales around the world (Alnıaçık, Alnıaçık, Erat, & Akçin, 2014). The term "war of talent" was already exposed by McKinsey & Company in 1997 and still resonates with companies. Despite the absence of a consensus about what a talent is, we can state talents are a special segment of individuals that possess unique knowledge and competencies and that outperform most individuals in a field of human endeavour (Tansley, 2011). The challenge for corporations then is to understand how to foster talent development? How to attract talent? How to shape talent to the needs of corporations? How to retain talent? The war for talents is not fought only outside the organizations with competitors, but inside the organization as well (Thunnissen, Boselie, & Fruytier, 2013).

Human resources qualification, via formal education or professional training or a mixed of both, can optimize corporate performance when learning is aligned with the needs of business, meaning that the focus on skills and learning ability is a primer to the wellness of developed economies (Dima, Begu, Vasilescu, & Maassen, 2018) and emerging economies (Muyia, Wekullo, & Nafukho, 2018).

Job market, as any market, operates on the basis of consumer choice, i.e. on the basis of decisions made by individuals that are motivated to work. These decisions pertain where they want to work, what level of output they are capable of achieving, and how motivated they are to actually achieve it. The first issue (where they want to work) is critical for business competitiveness as companies should strive to attract the best, the talented ones. This can be answered by means of a marketing base concept: brand.

Brand is, by definition, a differentiating factor of a product or a company that produces an identity system that is more valued by a given target than the alternative organizations (Anholt, 2007). So, as an employer, companies must see their employer brand as an asset that impacts their human capital. This applies to both large, medium and small companies (Immerschmitt & Stumpf, 2018). Employer brand is therefore the "package of functional, economic and psychological benefits provided by employment and identified with the employer company" (Mosley, 2007, p.130).

Employer branding is the designation of all activities deployed to favour the idea that the organization is attractive to the most talented potential recruits by guaranteeing firstly that they are aware of it, they can contact it, they desire to work in it, that they apply for a job in it, while existing employees should be nurtured to be willing to continue working, to be committed and put effort to excel themselves in line with organizational objectives and purpose (Edwards, 2017).

Aligning these facts with the importance of human capital as strategic resource for competitive advantage as differentiation, it can be emphasized that the unique selection of talents in an organization wins great importance (Aguinis, Gottfredson, & Joo, 2012). Organizations place attention to achieve success by gaining competitive advantage, and one of the most valuable resources that can benefit them is the human resource they employ (Narayanan, Rajithakumar, & Menon, 2018).

*"Hiring right to invest right"*

(L. Barthes, Head of People and Environment, 2018)

The software company Dassault Systèmes (DS), provides a digital experience platform that allows customers to create innovative new products and services. Internal policies in the year 2018, highlighted the future need of junior-profiles at DS, therefore the company's focus is increasingly more on sourcing stream of universities by offering competitive programs on the employee market. As a consequence, building and developing own DS workforce has become a crucial objective in the future. Considering the importance of employer branding and its bridge with talent management in high-technology industries, this project is designed to explore and maximize the process and outcomes of Dual Master at 3DS via a strategy of employer branding. In order to accelerate the transformation of the talent sourcing and development policy at DS, the thesis aims to examine the importance of the creation of a new career paths and giving strategies, to support the implementation and proposal for a long-term practice for young graduates: Dual Master@3DS: Proposal and Design of a New Career Path at Dassault Systèmes. The remaining of this project is structured so to explain the organizational context, keeping in mind the main concepts at play, the methods employed in gathering information, processing it and building the empirical basis that motivate recommendations and conclusions.

# 2. Exposition of the Context

## *2.1. Motivation of the Project*

As corporations strive to cope with the increasing competitiveness and bet on Human Resources as the distinguishing factor, they are keen on investing in strategies which influence their reputation as an employers, i.e. their employer brand, and determine long-term strategies to secure future talents (Narayanan et al., 2018). In the fast-growing industries, namely technological ones, attracting and developing talents is critical especially when one considering that the competing companies are investing to achieve that same objective as well. Talents have a job market struggling to gain their trust and match their high expectations. The specific moment in a lifetime of a talent in which companies should place focus is not entirely known, although experience indicates that the most competitive corporations target young graduates. If this happens at Bachelor's level, the talents might be addressed too soon. However, if they are targeted after complementing their Master's degree, the organization risks having to compete with other companies.

A solution which has been put forward in Germany is the dual study degree. This program describes a course of study at a university with either integrated vocational training or longer practical phases in a company. The dual studies differ from the classical studies in Germany as they include a higher practical relevance and the students are paid during their studies (Hofmann et al., 2018). These specific studies allow two structuring goals:

1) bridging education with real-organizational settings so to offer a strong scientific, technical and practical background, and

2) being able to modulate young graduates while in a study phase by plunging them in the corporate culture and focusing their attention on topics of industrial or economic relevance.

Although the dual system in Germany was developed 40 years ago, there is a third objective which might pass unnoticed and results from the experience itself as well as the word-to-mouth building of a reputation amongst future graduates (Berg, 2014). Therefore, building a reputation amongst future graduates, can be approached by an efficient employer branding strategy. As employee attractiveness gains momentum, Dassault Systèmes leverages its policy towards young talents through a specific program, which is taken as a strategic asset: the Dual Master at 3DS.

## 2.2. Introduction Dassault Systèmes

Dassault Systèmes is a French software company with it's headquarter situated in Vélizy - Villacoublay in France. The company provides a digital experience platform that allows customers to create innovative new products and services to achieve a more sustainable future. Therefore, the focus lies on extending and improving the virtual world as well as improving the real world. DS employs about 17 000 employees worldwide and has grown to be the second largest software company in Europe DS reaches its market through 250 000 enterprise customers in 11 different industries in more than 140 countries. The revenue is about 3,5 billion euros (2018) and the CEO is Bernard Charlès.

DS was established in 1981 as a subsidiary of the Dassault Group and originated from the French plane manufacturer Dassault Aviation, who created his own computer-aided design program called CATIA. Marcel Dassault, the founder of DS, had the idea to use and further develop CATIA for other industries as well. The next step was the Digital Mock-Up (see figure 1). The software helped to replace expensive product testing by realistic computer-generated models. Through Digital Mock-Up the way for three-dimensional design was paved. The next milestone was the depiction and simulation of the entire product lifecycle with the help of the software. The end-to-end product management describes the lifecycle from design through to recycling by including production and distribution. By 2012, the company unveiled the 3DEXPERIENCE platform which goes beyond the product itself and added other areas within the company (Annual Report 3DS, 2018).
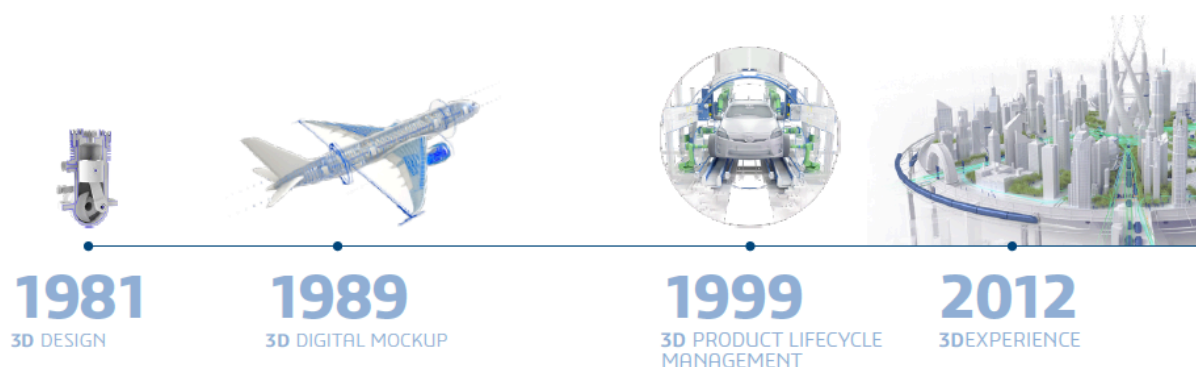


**Figure 1 The major industrial transformations**

(Source: 3DS Booklet)

Nowadays, DS does not only want to sell their products, their goal is to provide their customers with experiences, bringing the product to life with 3D simulation and modelling before it is even produced. Thus, they call themselves the 3DEXPERIENCE company (3DS). The company's purpose is to build a world that harmonizes product, nature and life. A world in which everything hinges on the ability to acquire and share knowledge and know-how. The 3DEXPERIENCE platform positions DS as a catalyst and enabler of this transformation while allowing businesses to connect the dots within and outside a company.

The 3DEXPERIENCE platform encompasses the twelve brands, which are structured in four quadrants and are defined as follows:
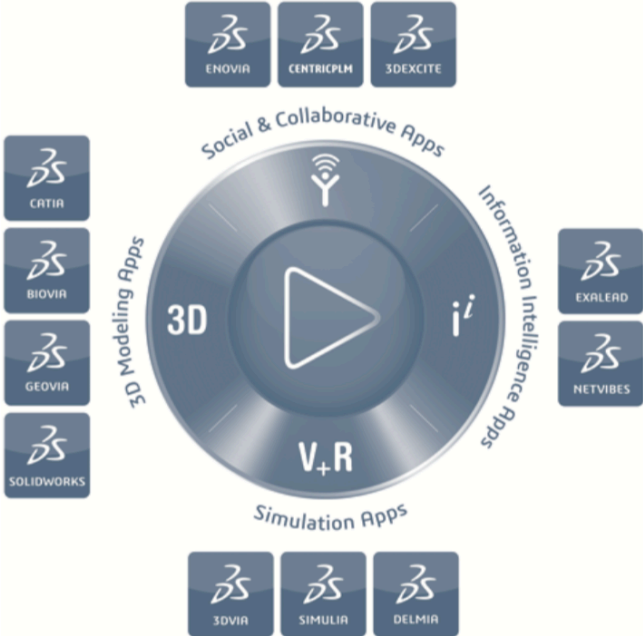


**Figure 2 3DEXPERIENCE platform**

(Source: Annual Report 2018)

The north quadrant represents the social applications that help create an internal community of networking, sharing and learning from and with each other. The west quadrant focuses on 3D modelling applications, which are used for construction. CATIA generates the biggest part of the revenue and is the most known brand of DS. SOLIDWORKS is the only brand that sells licenses to private customers.

The south quadrant comprises the simulation applications. They focus on simulating processes to find the fastest, cheapest and most sustainable way to carry them out. Potential errors can thus be detected before the products are produced, allowing for them to be adjusted before production. The applications eliminate the need for prototypes and lead to an optimal allocation of resources and labor. The east quadrant contains information intelligence applications, which provide analysed information from different sources for specific target groups (Website 3DS, 2019).

By the year 2018 the company included Dassault Systèmes SE and 111 operational subsidiaries due to the effort of the company to simplify the organization of its legal entities throughout the world (see figure 3).
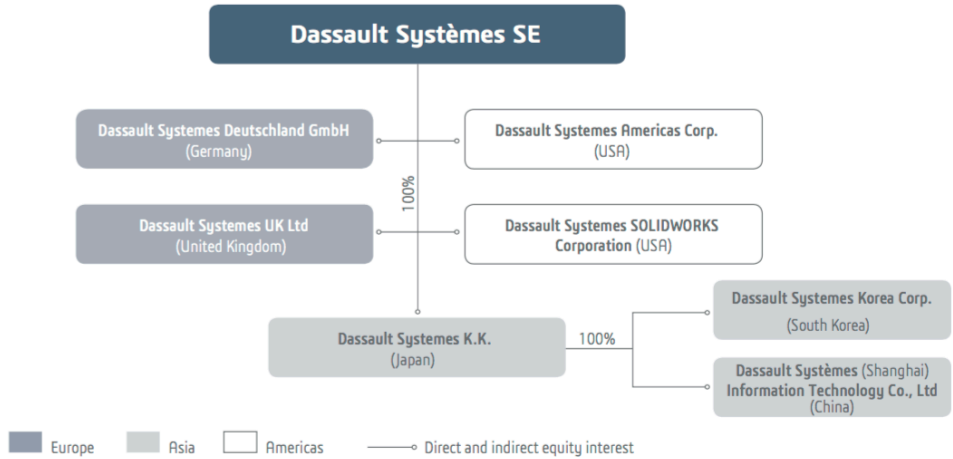


**Figure 3 Company´s main subsidiaries**

(Source: Annual Report 2018)

Regarding the HR department, DS handles many of the main tasks of HR in it's headquarter in France. In Germany, the HR team is divided between Stuttgart and Munich and has the following responsibilities: it is responsible for the region called EuroCentral, which includes Germany, Switzerland, Poland, Czech Republic, Slovenia, Hungary, Slovakia and Austria. The department is divided into different fields: HR Business Partner (HRBP), Learning and Development, Recruiting, Administration and Reward and Recognition. Each department has its own manager and there is one HR director, who is in charge of all departments across EuroCentral.

The adaptation of the labor market to a more digital and global environment has caused the requirements of the HR department to change immensely. This shift has made it necessary to establish more specialized smaller teams within a department, such as the Talent Acquisition team. The team is mainly responsible for the acquisition of new employees. Nowadays, the recruiting process is not restricted to the posting of job advertisements and the passive waiting for suitable candidates. Instead, it is a rather active search via social media or other networking methods for good matches, such as being present to the target group through career fairs or workshops at universities.

In 2018 the company's chief of people and environment of France announced new principles to be followed by the company. The key message describes that the knowledge and know-how remain the core 3DS capital asset. Consequently, building and developing a DS workforce will be crucial in the future. Therefore, new objectives are set to not only accelerate the transformation of the talent sourcing and development policy at DS, but also design the workforce of the future by investing correctly. To achieve this, three main objectives are followed. The first objective describes the prioritization of junior-level profiles as well as emerging roles and profiles. Secondly, internal talents are supposed to obtain the best development opportunities in lean, knowledgeable, certified and cost-effective ways. Lastly, by mobilizing senior expertise, mentorship and knowledge are being promoted (Source Laurence Barthes, internal).

Up to this year the career paths for young graduates at DS in Germany included internship and working student positions, as well as thesis writing positions. In this context, the proposed program of a new career path at DS, will be described in the following chapters.

## *3. Objectives of the Program*

This thesis is based on internal materials and sources of DS, as the author was given the opportunity to take on a project and conceptualize a new prospect at the company: positioning themselves on the German labor market. The company was chosen because of a previous internship at DS and further interest in implementing and conceptualizing a program which connects the current needs of the company combined with its new set of policies.

The thesis project proposes a structure and functioning linking all the resources required to deploy the project. Therefore, specific objectives are defined, which are supported by either internal information of the company, a comprehensive literature review or by the use of a survey. First, the importance of the creation of new career paths is discussed. Then, it is elaborated how the conversion is being executed from the experience of an intern to the conversion of a hired employee. This is followed by the objectives on which kind of tools can be used in order to follow the aim of long-term retention in the sense of young graduates. Finally, it is contemplated what outcome arises for the organization if it starts including the program. Therefore, the focus of the thesis is on their internal changes, cost effectiveness and possible return of investment within the organization. In order to consider these objectives, a data collection by internal sources is executed as well as a short survey in the target group. They survey is conducted to acquire an understanding of the position of Dassault Systèmes in Germany and comprehend its corporate reputation on the market of the profiles they are intending to attract.

This in-company project aims at contributing to the company's success and body, through an investigation of the perception of students of DS and concepts in literature within the fields of human resource management. The purpose of the project is shedding light on how the organization can work within the concept of talent management and their employer brand, by using the strategic tool of implementing a dual master program. Thus, the project means to demonstrate how to attract and retain young talents. Therefore, the project is named as "Dual Master@3DS: proposal and design of a new career path at Dassault Systèmes".

## 4. Literature Review

The literature review begins with a description of Human resource development (HRD) and continues with the contextual areas of talent management. Within the section of talent management talent and new generations are presented. Talent development, attraction and employer retention are discussed as well. The review further discusses HR strategies, addressing employer branding and a theoretical model. Moreover, tools of long-term retention are evaluated as well as which strategic asset can be intended. The literature review aims to support the project with a framework on how the objectives of the project can be achieved.

The areas of training, career development and organization development root in HRD. Historically HRD focuses on people in organizations, has been evolving for decades and can be viewed as a subset of the human resource discipline. Thus, it can be described as the process of increasing the capacity of the human recourse through development. Through training and development, key competencies can be identified and assessed, that enable employees to perform in current or future jobs. Career development assures the alignment of individual career plans and organizational processes to achieve the best possible match between both parties (McLagan, 1989).

In the context of HRD, another aspect can be highlighted to support the project with theory. Employment relationships are described as the psychological contract of individual beliefs towards an organization. Rousseau (1995) was one of the first to assume that psychological contracts mediate the relation between Human resource management practices and employee performance. Therefore, the relationship is shaped by the organization, regarding terms of an exchange agreement between each party. Organizations might sponsor career development and mentoring programs to invest in unique firm-specific skills which are more valuable to the firm than to competitors (Becker, 1967; Delaney & Huselid, 1996). Within HRM practices the expectations by employers are that these practices will improve employee's way of working, while employees will consider the HRM practices as relevant and valuable for their work context. Leading to trust in management by employer incentives and employees´ contributions, the psychological contract becomes more relational between the two parties (Rousseau, 1989).

To achieve a competitive advantage as an organization, talent management is used as a strategic initiative to attract, develop, and retain its talented employees (Narayanan et al., 2018). Considering the exploration of HR matters and the key trends in people management by BCG in 2014, the future importance of HR topics already highlighted the topic of talent management and leadership (see Figure 4). Their survey was conducted as business leaders face an environment characterized by technology and scarcity of talent. The report shows the ten HR topics ranked by respondents` assessment of future importance. Clearly, talent management is of the highest importance and was already in 2014 a growing concern for companies (BCG.com 2014).



**Figure 4 10 HR Topics**

(Source: The Boston Consulting Group's Creating People Advantage series, 2014. Online: https://www.bcg.com/publications/2014/organization-human-resources-creating-people-advantage.aspx)

To understand the concept of talent management, several reviews of literature were consulted. When defining the concept of talent management, many researchers consider it as a difficult attempt as the term is not very clear (Collings & Mellahi, 2009), as certain authors simply acknowledge that there is no existing unique and concise definition (Ashton & Morton, 2005).

Before moving ahead with the concept of talent management, a definition of what *talent* as used in this project is given. A definition introduced by Nijs, Gallardo-Gallardo, Dries and Sels (2014) describes talent as the following:

> *Talent refers to systematically developed innate abilities of individual that are deployed in activities they like, find important, and in which they want to invest energy. It enables individuals to perform excellently in one or more domains of human functioning, operationalized as performing better than other individuals of the same age or experience, or as performing consistently at their personal best.* (p. 3).

According to Tansley (2011) three perspectives can be consulted to define talent within the theory of Human Resources Management. The first perspective is perceived at the organizational level, whereas talent is influenced by its area and the nature of its operation. Secondly, the group level perspective focuses on talent pools. Hereby, organizations group their talents into a talent pool which detects and identifies them by a series of categories. These categories describe for example, *managerial talent,* as people who are indispensable to the organization. Next, *key-talents*, which describe targets in recruiting processes or from headhunting firms. The *nucleus-talent*, refers to the employees who deal with basic operational processes, concentrated on short-term operations. Lastly, the category of *the peripheral talent* refers to the subcontractors and suppliers, which are not specific to an organization. The third perspective describes talent as the defining trait of talented people with certain abilities and exceptional competences.

Continuing with the review on the concept of talent management, Lewis and Heckman (2006, p.139) strongly assert, as many authors do, an existing *'lack of clarity regarding the definition, scope overall goals of talent management`*, referring to the papers published before them. Similarly, the author McDonnell (2011, p.169) writes that little is known about how talent can actually be identified and evaluated, even though many papers discuss the importance of it. Regardless, McDonnell views talent management to be one of the most important factors in ensuring sustainable organizational success.

Due to the lack of clarity, Lewis and Heckman (2006) identify three streams regarding what talent management is. The first stream focuses on studies which replace the term "human resource management" with "talent management" and are often limited on particular HR practices, such as recruitment or leadership development. The second stream emphasizes talent pool development based on organizational objectives, such as employee/staffing needs. Lastly, the third stream focuses on the management of talented people.

A further stream has been identified which emphasizes the identification of key positions. The authors Collings and Mellahi (2009) state that talent management includes

> *activities and processes that involve the systematic identification of key positions which differentially contribute to the organisation's sustainable competitive advantage, the development of a talent pool of high potential and high performing incumbents to fill these roles, and the development of a differentiated human resource architecture to facilitate filling these positions with competent incumbents and to ensure their continued commitment to the organization* (p. 305).

According to Peter Cappelli, talent management exists in companies, as a tool for achieving their overall objectives, namely earning money. The author argues that companies need the understanding of costs as well as benefits of talent management choices. Cappelli describes a mismatch between supply and demand of employees and their skills as a main risk, as could simply be seen from lessons from operations and supply chain research (Cappelli, 2008). Another conclusion of TM is the identification, management and development of an organization employee´s. Talent management is concerned with developing strategies for an organization to meet its future needs and demands, moreover establishing processes to measure competences, also by creating tools of development which focuses on individual needs. Another concern of TM is to obtain and retain those critical for success while establishing approaches with those who do not meet the organizations requirements. Lastly, it is crucial to measure the impact of the strategies mentioned to be able to improve and continually update the strategies (Cannon & McGee, 2011).

The starting point of any talent management system is identified by key positions which further contribute to the sustainable competitive advantage of an organization (Collings & Mellahi, 2009). This statement is based on the fact that not all positions contribute to the strategic intent of an organization to the same extent, thus greater focus should be on the significant positions that support reaching its organizational goals (Narayanan, Rakithakumar, & Menon, 2018). Providing talents in an organization has become one of the most important concerns of Human Resource Management. Reasons grounding this observation highlight the intensification of competition all over the world. The transition of talent management changes from process to strategy, a transformation initiated by globalization. Given that, employers need to invest more in their talents in a globalized labor market to maintain competitive and further develop their organizations (Muntean, 2014).

Looking back to early proponents of talent management the authors Lewis and Heckman state that to them, the best analogy for TM is that of an architecture. With this construction systems-levels and strategic perspectives can be offered and could open up new research possibilities. However, they note that other authors have failed in describing how this should occur and state that the term of TM is used in too many different ways (Lewis & Heckman, 2006).

In addition to the lack of clarity of identifying TM, challenges within talent management appear in respective literature as well. Besides the intensification of the competition, further challenges are highlighted: talent identification, attraction, development, retention and heterogeneity, poor quality of talents, sustaining salaries, provision of clear career paths as well as dealing with shifting employee expectations (Vaiman, Sparrow, Schuler, & Collings, 2019).

A topic which gains popularity in practice of organizations among HRD is the scope of talent development (TD) (Hedayati Mehdiabadi & Li, 2016). TD, talent attraction and talent retention are described as the three strategies or practices within talent management (Thunnissen et al., 2013). TD is renowned to be critical for the effectiveness of every organization. The practices should be driven by an organizations business strategy as well as the skills executing it (Lawler, 2017). Talent development is described by Mehdiabad & Li (2016) as follows:

*a comprehensive system that consists of a set of values, activities, and processes with the aim of improving all willing and capable individuals for the mutual benefit of individuals, host organizations, and society as a whole. (p.287).*

Organizational branding is a crucial step within TM for attracting and retaining talents. Therefore, by attracting talents a strategy-driven approach can be followed focusing on segmented competencies and skills which are particularly significant to the targeted talent. Another key issue is making it clear that performance is rewarded, recognized and valued by the organization. Furthermore, agility needs to be built into the attraction process facing a clear contract with respect to future employment. Next, the recruiting processes must be segmented in order to attract individuals with different skills. As the last approach, it is stated that the processes need to be evidence-based to analyze not only who is attracted but also why they are attracted (Mehdiabad &, Li, 2016).

To avoid turnover in form of expensive administrative and developing costs, talent retention gains importance. A targeted retention system determined to detect indicators of potential turnover can be very helpful for organizations and their future development (Lawler, 2017). In general, for implementing talent management processes successfully, an organization needs to consider how vulnerable the organization is and whether the key roles can be filled or retained. Another aspect to take into account is how scarce the needed talents are to find on the marketplace, as this can lead to a greater justification for investing into retention strategies (Cannon & McGee, 2011).

The article by Hegarty (2018) focuses on the pressure to attract and retain employees especially in the technology centers. Therefore, the author highlights winning strategies on what it takes to be an employer of choice, the main relevant aspects are being described. One aspect state that an attractive pay, as it is a good process to reward employees, is the attention-grabber and motivator for many candidates. Another aspect is the employer contribution of retirement and employee health benefits. Equity participation of the company's success are mentioned next, this can include stock options or restricted stock awards and can be why people head to technology firms. Increasingly, well-defined career paths become more valued which includes training, mentorship and development. Lastly, as a highlighted aspect, the article emphasizes the preference by employers to be part of the solution and expect a positive and inclusive company. Complementary to the given aspects, the role of reputation is discussed further. It is argued that three different aspects of reputation are important, namely corporate reputation, workplace reputation and reputation for social responsibility. Augerer, Devinney, Dowling, Eckert and Lin (2013) conducted a study which found that other aspects such as remuneration, time demands and salary certainty has better chances to be favored by potential employees than only relying on corporate reputation. Rather than overinvesting in reputation, organizations should provide functional value to employees that follows more naturally. The importance of reputation should not be overstated but still be included as part of the company's characteristics. Other scholars focus on providing employees with a compelling vision of their future in the company, thus capturing the attention of new employees. This means investing time and resources to conduct orientation programs, with emphasis on people as well as procedures (Mahaffey, 1999). In 2018 Deloitte conducted a millennial survey, in which respondents were either in their studies or full-time employees, and were either so-called Millennials, i.e. born between 1983 and 1994, or members of Generation Z, those born between 1995 and 1999.

The focus of the study was on attracting and retaining these generations and found that companies need to focus on financial rewards, workplace culture and a high degree of flexibility of the workplace. Furthermore, it was exposed that these generations are interested increasingly in building interpersonal skills and confidence. Long-term success can be guaranteed if organizations are able to deliver the prospects for potential new talents (Deloitte Millenial Survey, 2018).

The vital target for leaders' investments for their organizational success, is the attention on *"pivotal talent pools"* such as jobs, roles or competencies. By identifying these talent pools, the quality and/or availability of human capital can make the biggest difference to their strategic success (Boudreau & Ramstad, 2005). The authors Narayanan, Rakithakumar and Menon (2018) support this claim by stating that not all positions in an organization contribute to the same extent. Hence, their focus should lie on signigificant positions.

Besides the identification of specific roles and jobs in an organization, the targeted talent pool is to be discussed. As the relevancy in this thesis emphasizes on graduates, the researched literature will focus on them. According to Garavan and Morley (1997), many top-performing organizations view graduates as the most common talent pools and key source of high-potential employees. The proposed project will focus on two sourcing methods: internal sourcing, which describes the conversion of interns to full-time employees and external sourcing, which takes place outside of the company and uses a pool of bachelor graduates. The first sourcing method gives students the opportunity to experience personally what working for a specific company means, while the company is given the chance to evaluate the students' capabilities before a full-time employment is proposed (Hurst, Good, & Gardner, 2012). Through cooperative education programs it is noted that the employer's benefit is its cost - effectiveness (Nielson & Porter, 1983). Many organizations have adopted development programs specifically designed to attract high-potential graduates. According to Garavan and Morley (1997) little research has been undertaken which examines the expectations of development programs of graduates and the momentum when they join a company. Therefore, a survey was conducted to rate their personal expectations of the proposed program in this project.

Besides the competitive market, long-term strategies become the main focus for companies. Therefore, it is stated that acquiring talents from external sources is no successful long-term strategy to focus on. Instead, companies should focus on developing talents from within to ensure that skills and competencies are obtained (Garavan, Carbery, & Rock, 2012).

Human capital theorists suggest that the value of any employee´s human capital in another firm is less likely to result in a capital loss through internal development as the firm-specific skills are nontransferable (Becker, 1967). In addition to that aspect, an investigation by Bethke-Langenegger, Mahler and Staffelbach (2011) has shown that a strong focus on strategy within talent management practices has a statistically significant higher impact on the attractiveness of a company, the achievement of business goals and lastly, their corporate profit.

The quest to win the talent war, the concept of Employer Brand (EB) is obvious. The goals of employer branding is to increase the attractiveness of the employer for potential future employees, improving the quality of recruiting, increasing motivation and willingness to perform of existing employees as well as strengthening the commitment of current employee in the company (Lukasczyk, 2012). Another definition of the Employer Brand is '*the package of functional, economic and psychological benefits provided by employment, and identified with the employing company*' (p.187). Furthermore, a series of exchanges of mutual benefits between the company and employee relationship provides an integral part of the company's business network. Ambler and Barrow´s study examined that companies which follow an EB model reach higher retention rates, especially among high skilled employees. Additionally, they state that attracting best candidates is not only easier in the first place, but also is further reflected in the attitudes and career choices of potential future and existing employees (Ambler & Barrow, 1996).

In order to make suggestions how to nurture talents and fill the emerging roles in a company, a solution within the literature is brought forward which consolidates the objectives for the project. In recent years, the AMO model has been used as a framework, guiding companies in their choice of HR practices (Bos-Nehles, Van Riemsdijk, & Kees Looise, 2013). Organizational interest is best served by the AMO-framework by attending the following characteristics and proposes that employee performance is a function of the employee´s ability (A), motivation (M) and opportunity (O). HR practices designed to maximize employee performance can be viewed as a combination of three dimensions envisioned to enhance employee skills, motivation and opportunity, respectively (Appelbaum, Bailey, & Berg, 2000). Lepak, Liao, Chung and Harden (2006) suggest specifying the HR practices. Skill-enhancing HR practices are designed to ensure suitably skilled employees by including recruitment, rigorous selection and extensive training.

Motivation-enhancing practices are implemented to enhance employee's motivation which typically include performance management, competitive compensation, incentives, rewards and benefits as well as career development and job security. Moreover, HR practices is an opportunity-enhancing practice designed to empower employees to use their skills and motivation to achieve organizational objectives. Practices offering opportunities vary from flexible jobs designs and work teams to employee involvement. A study by Jiang, Lepak, Hu and Baer (2012) indicated, that in order to retain talented employees and realize organizational and financial objectives, the need of investing in HR practices arises as it enhances both employee skills and motivation at work. A possible framework on how the AMO-model could be connected by the respective literature is shown in figure 5. The figure shows the connectedness of the model and interactivity of each factor of the theory.
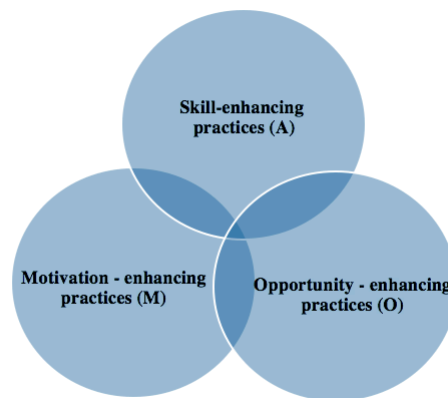


**Figure 5 AMO – Model**

(Source: Own Representation)

One concept which has been put forward as an HR practice in Germany with the aim to consolidate the objectives to attract, retain and develop employees, is a dual study program for bachelor or master's degrees. This way of studying combines science-related (university) and practical vocational (company) education. The attractiveness of the dual study program results in the combination of academic training, remuneration during time of study and the remarkable high take-over rates in the course of career entry. Within the framework of dual studies, practical and academic elements should form equal parts and require a coordination during the program (Berg, 2014).

Nearly three-quarters of the dual studies are based in the field of engineering (38 %) and economics (34%), followed by computer science (12%) and finally by studies in the area of social sciences, education and health (10%) (Krone, Nieding, & Ratermann-Busse, 2019). The benefits for companies not only the possibility of conversing interns to dual master students and long-term retention, but also the fact that students directly apply the acquired knowledge and can enrich their studies through their practical experience. Furthermore, the students are usually characterized by high performance, a high degree of resilience and motivation as the dual program generally requires students to commit more to their education. The participating companies mostly select the dual students themselves, which enables them to guise for skills and capabilities matching their imagination. Another benefit is that companies and the responsible universities hold partnerships. As participating companies partly contribute to the content or specific courses, it also facilitates further cooperation in researches areas (Arbeitgeber.de, n.d.).

# 5. *Conceptual Reference Framework*

In order to outline a strategic approach of the proposed project, several hypotheses are postulated to help concluding the findings within the project at DS and to support achieving the program´s objectives. Moreover, the conceptual reference framework will position this work within the larger field of the stated literature.

As mentioned in chapter three, the author is aiming to investigate how DS can improve its organizational success within the concept of talent management and their employer brand, by the use of strategic HR practices. Therefore, several hypotheses will be answered through the tool of a survey and internal developed resources. The assumptions which need to be assessed range from the question how DS can cope with an increasing competitive market to which strategies help gain attractiveness as employer regarding their reputation and employer brand. Furthermore, examining a strategy on how to secure the talents of the future, to fill the emerging key roles in the company and develop long-term strategies, is necessary. With the findings of the project it is aimed to indicate how the planned program (dual master program) of the company can uphold these assumptions and state a solution to their needs. By the use of a survey, an insight to how DS is perceived by the target group of graduates, what attributes are reflected in the company and what the respondents regard as most relevant, was acquired.

The survey results will also give answers which can be used for the concept and implementation of the program.

Reviewing the literature postulates that DS should use talent management as a strategic initiative focused to attract, develop and retain talented employees, as TM can be a significant factor for improving organizational success. Another aspect supporting the program´s objectives is to understand the costs and benefits by focusing on talent management as a strategic initiative and balance the demand and supply of employees. Furthermore, the relevant literature proposes to make use of organizational branding in order to attract and retain talents, focusing on segmented competencies and skills that are particularly important in the organization.

Concluding an EB-strategy will support the company to reach higher retention rates and can lead to a greater perception among the target group, for example through word-to-mouth placement. EB is not the core topic in this thesis project, however is related to the concept of implementing a dual master program and should be considered by the company as an important tool to increase its organizational attractiveness.

Moreover, the examined literature proposes focusing on long-term strategies by developing their talents from within the organization, to ensure employees acquire the necessary skills and capabilities rather than attaining employees from external sources. The scholars suggest identifying talent pools to focus on the companies emerging roles and the right talent peer, hereby focusing on graduates. Within the review of literature, the benefits of concentrating on graduates are highlighted and can be used by DS in order to design the planned program. Moreover, the AMO-model in the literature proposes a way which can guide DS to the choices in HR practices. The three dimensions highlighted in the theoretical part must be focused equally to be successful.

The following chapters will highlight how the program can realize the hypotheses stated in this chapter, as the previous findings act as the framework for the project. Followed by an analysis of strategies for the company through a TOWS-matrix, the following chapters outline various aspects of the program, which was developed in collaboration with DS.

# 6. Competitive Analysis

The following chapter develops a strategy for Dassault Systèmes, applying a TOWS - analysis. Within the analysis strengths, weaknesses, opportunities and threats of the company, are juxtaposed by internal and external factors. The aim of the analysis is to precede a long-term implementation strategy for the proposed project: the dual master program at 3DS. The internal and external factors shown in figure 6 can be linked to each other and lead to strategies used for the deployment of a dual master program at DS.

| Internal factors / External factors | Strengths (S)<br><br>(1) Experienced with students<br>(2) Onboarding process<br>(3) Activities at Universities<br>(4) Site location | Weaknesses (W)<br><br>(1) Size HR Team<br>(2) Capabilities to be a mentor<br>(3) Reward management |
|---|---|---|
| Opportunities (O)<br><br>(1) Partnerships to Universities<br>(2) Dual master programs<br>(3) Building Network | S-O Strategies<br>- Develop new talent journey´s use niche of dual master program (O1, S1)<br>- Extend EB activities at career fairs/workshops (O3, S3)<br>- Improve partnerships with target uni's at DS site locations (O1, S1,S4)<br>- Conclude specific onboarding for dual students (O2, S3) | W-O Strategies<br>- Find candidates for HR team through partnerships and establish dual master programs in HR department (O1,O2, W1)<br>- Select employees with technical / soft skill capabilities, who have good networks with universities, as mentors(O1, W2) |
| Threats (T)<br><br>(1) Competitive market<br>(2) High demand of skilled talents<br>(3) Demographic factor (workforce) | S-T Strategies<br>- Approach students in their bachelor degree by University activities (T2, S3)<br>- Attract younger employees, take advantage of proximity to students (universities and site locations), longstanding experience with students (T3, S1, S4)<br>- Use Word-to-mouth to attract other skilled talents (T1, S2) | W-T Strategies<br>- Improve reward management for skilled talents (T1, T2, W3)<br>- Invest in HR capabilities as strategic HR practices lead to organizational success (T1, W1)<br>- Use of experienced workers with capabilities to become mentor (T3, W2) |

**Figure 6 TOWS – Matrix**

(Source: Own Representation)

**S-O** - The first strategy crosses the opportunity of partnerships with universities and DS' strength of having experience with students. The outcome of the strategy is that in addition the existing career paths of internship or working student positions, new talent journeys need to be developed at DS. The approach is to implement a dual master program, which prevails a niche offer as only 2% by the companies offer dual master programs. In contrast, 98% of companies offer dual bachelor programs (see Appendix I). Crossing O3 and S3 leads to another strategy: extending EB activities at career fairs or workshops. This can help increasing the company's reputation through word-to-mouth as well as a higher recognizable value. The following strategy is supposed to improve partnerships with target universities close to the DS site locations (O1, S1, S4).

DS can use the geographical proximity of target universities, by licensing them to the universities at affordable rates or using the closeness for research cooperation's or exchange of ideas. This will help make software products at technical universities known. Lastly, crossing O2 and S3 leads to the conclusion of arranging a specific onboarding program for dual students to stir up the feeling that dual students are complementing a unique program in the company. This could include a hiring bootcamp, mentor/ mentee workshops and participations in various national events.

**S-T** - A smart approach connecting T2 and S3 is focusing on the conversion of bachelor graduates to possible dual master students at DS. This either means to intercept bachelor students before leaving the company for a master's degree by pointing out possibilities to stay in the company or to increase the activities at universities especially for bachelor courses. Linking the factors of T3, S1 and S4, leads to the result that DS should take advantage of their site locations, since many of them are located in the same cities as the target universities. Therefore, they can use the proximity of students to attract young talents. As word-to-mouth already is a strategy of EB activities, it also can be connected through crossing T1 and S2 and be used to attract highly-skilled talents.

**W-O** - Combining the opportunity of partnerships with universities and dual master programs together with the weaknesses of the HR team size in Germany, the strategy can be concluded to not only find candidates for the emerging key roles, but also for HR roles, in order to increase the team size and the capacities to develop talent programs. Another strategy is to select employees at DS with technical and soft skill capabilities, who also have good networks at universities, since as mentors they could provide candidates for the dual master program as well (O1, W2).

**W-T** - As the last crossing, the weaknesses are juxtaposed with the external factor of threats. Combining T1, T2 and W3 results in improving the companies reward management for skilled talents by attracting new candidates. This implies that the company should conclude competitive salary packages. Another strategy to implement HR practices for the company is investing in HR capabilities for the company's organizational success (T1, W1). As DS holds an average workforce age of 43,72 years in 2018, mobilizing senior expertise, mentorship and knowledge can be promoted and used as a strategy for the dual master program (T1, S2).

# 7. Framework of the Project

To overcome the objectives of creating new career paths, the project of a dual master @ 3DS was born. In order to obtain a full understanding of the project and including all necessary alignments, a deeper insight of the project will be described in the following. The obligatory base to comprehend the need of the new career path in the company is described as well. The proposed factors for the design of this project were decided and deducted on the basis of internal sources and analysis in the company.

To conclude the project, principles have been defined to whom the program is addressed, what it should achieve and ultimately how it should be implemented.

**WHO** The program mainly focuses on graduates directly after their bachelor's degree, or Ex-3DS-interns aiming to start a master's degree within maximum one year of experience. This target group is either applying for entry level vacancies via direct university hiring or through the career website. Another option is having a successful conversion of an intern or apprentice, who worked in the company previously and is interested to stay as a dual master student.

**WHAT** Regarding the question what the principle of the program is, it can be stated that the aim is to leverage the internal pool of junior talents to fill key roles and emerging positions in the company. Benefiting of pre-educated graduates through their bachelor degree and potential previous work experience in the company facilitates the cultural adoption at DS.

**HOW** To answer the question how the program can be realized, it has to partly be combined with the newly set policies in the company. First, it is stated to promote internal mobility for 3DS interns, furthermore by creating attractive packages and career perspectives for graduates. In general, it can be affirmed that to successfully source, attract, integrate and retain the workforce of the future at 3DS, a positive candidate experience must be given from day one.

As mentioned before, new policies were set in the company in 2018. The main ones support the proposal of this project and are described as follows: The *Global Policy* describes the purpose to build an environment which harmonizes product, nature and life. A sphere in which everything hinges on the ability to acquire and share knowledge and know-how. As the people and their know-how are the core 3DS capital asset, it is crucial to build and develop the 3DS workforce. This leads to the transformation of accelerating the talent sourcing and development policy in order to design the workforce of the future and make savings by investing right.

To make this happen, the following steps need to be considered in future actions and decisions of DS:

- Prioritizing sourcing junior-level profiles and emerging roles and profile,
- Offering internal talents the best development opportunities in lean, knowledgeable, certified and cost-effective teams,
- Mobilizing senior expertise by promoting mentorship and knowledge transfer.

The second focus regards Employer *Branding*. The internal awareness actions and employer value proposition (EVP) are yet to be defined to attract junior profiles. Another point to be considered is the social media content strategy and communication plan which includes targeted content on the career site. This step will only be created and planned after internal approval. The third focus lies on *key roles* in the company. One objective is to source proactively and engage top talent. Therefore, a form of pipelining is used which refers to the process of nurturing relationships and interests of candidates through regular communication and provides talents ready to be hired (Wilson, Verma, & Nanda, 2019). Pipelining allows nurturing mainly passive candidates and creating a world class candidate experience. Another objective aims to identify key, emerging and critical roles per global locations. Lastly, *site consolidation* is considered by DS. It aims at identifying and targeting the universities in the right geographical areas, in order to synergy with the workforce of the future and initiate academic partnerships.

The background leading to the development of the idea was urged through several factors, which especially focus on an internal analysis of factors. One factor focuses on the analysis of the current workforce at Dassault Systèmes. Through internal sources the average employee age has been identified and states 43,72 years in Germany. Moreover, the CLG (Career Level Guide) is used to compare the career levels of employees, since it indicates from where the highest group of employees is hired. Figure 7 shows there are little hiring's in the CLG level 100 and 200, which describe mostly graduates with no work experience or with little of 3 - 4 years' work experience. The highest percentage of hirings are indicated in the CLG level 300 and 400, which summarizes the group of employees with more than four years of work experience.
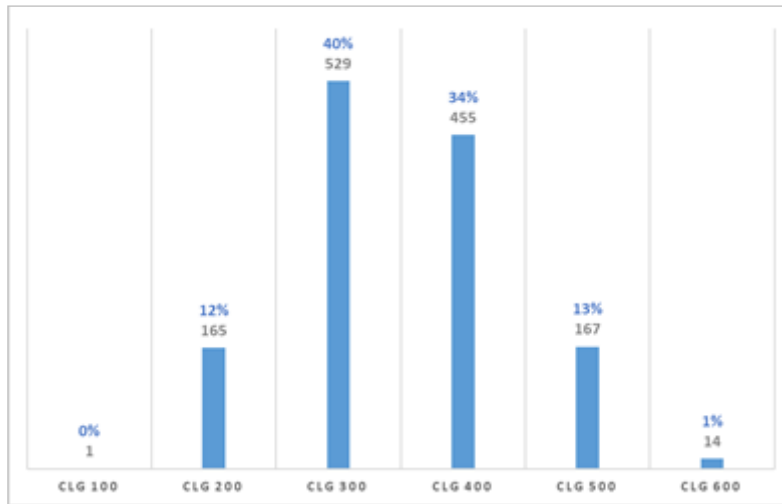
**Figure 7 3DS population per CLG – ECAL**

(Source: Internal 3DS, 2018)

The proposal to the projects includes following principles within the company, supporting a successful implementation and positive candidate experience. Figure 8 states several milestones which ought to be considered.
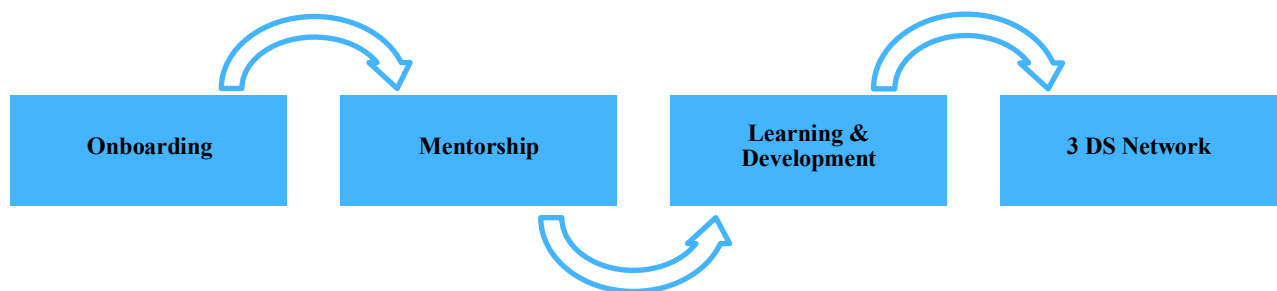


**Figure 8 Program´s Principles**

(Source: Own Representation)

The Onboarding is dedicated to a specific role and leading towards the aspirational target role in this program and provide a great candidate experience. Aiming to develop the competencies candidates need to thrive at the job at DS. Another important factor is providing mentorship. This refers to a mentor that helps the student develop his professional skills and speed up his professional journey. A real guidance by conducting Mentor/ Mentee includes workshops or follow-up meetings. The Learning & Development principle is dedicated to a permanent feedback program and developing technical as well as soft skills.

Soft skills can include skills such as digital competence, leadership, emotional intelligence, collaboration, communication/presentation skills. Lastly, a strong network must be built by joining events with the management actors, initiating alumni network and connecting them with a pool of experts and passionate people of various departments. Participation in workshops and communities as well as certification celebration for all gradates must be considered.

**EMEAR Site Consolidation in Germany** - In order to decide where to strategically install a dual master program in Germany, several factors were compared and analyzed internally. The outcome was based on the factors where most of the office locations in Germany are based and where most of the important clients operate. The green dots in figure 9 display the clients within the Business Transformation sales unit, which is the most significant sales income for the company.
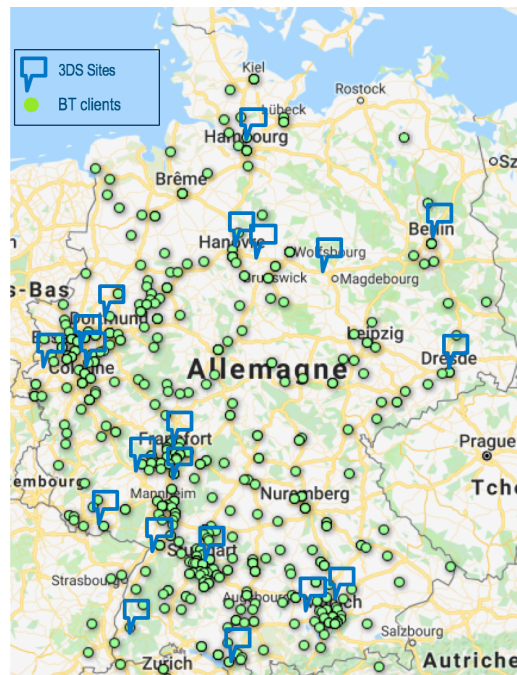


**Figure 9 Alignment Site Consolidation Germany**

(Source: Internal 3DS, 2018)

The map differs according to the number of employees placed at the locations. Through internal company data the biggest site is counted with 608 employees in the area of Munich and the location in Gilching. The second biggest site is Stuttgart, with roughly 330 employees. In the mid-west part of Germany, the cities Düsseldorf and Darmstadt have a joint number of 242 employees on-site. The smallest number of employees are in Hamburg and Berlin, each with 48 and 41 employees.

As external factors, such as attractive cities to work in or best places to live in Germany attract potential future employees, a figure was created which includes external attractors, the data was acquired from internal sources in the company.
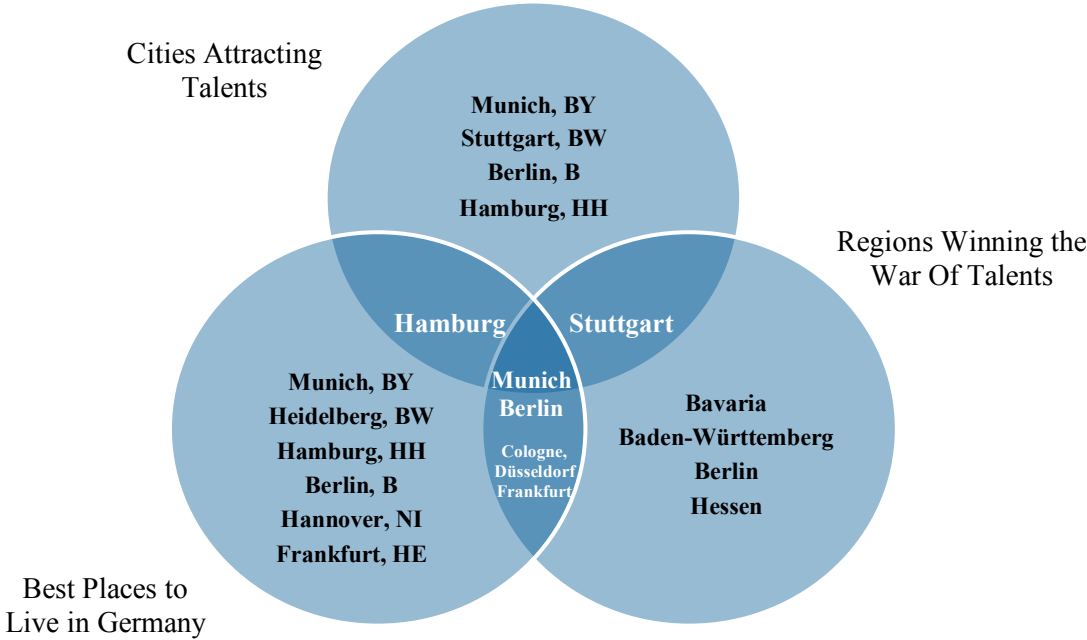


**Figure 10 Site consolidation and strategy**

(Source: Own Representation)

Reflecting each factor, it shows that Bavaria and Baden-Württemberg with the main cities Munich and Stuttgart, aligns with the highest number of employees working there. These sites also win the category of best places to live in Germany. Since cities attract talents, the sites in Stuttgart and Munich also win the "war of talents". The second choices were Düsseldorf and Darmstadt, which speaks for itself in its size in office location and high number of clients in the area. Furthermore, Düsseldorf is also included in the best places to live in Germany. The smaller locations as Berlin or Hamburg are not considered as suitable locations to implement this program as the size of employees does not provide the capacity to mentor dual students.

**Alignment target universities** - Uniting the selection of suitable office locations to implement the dual master program together with the target universities offering the right studies and technical skills, the upcoming figure aligns the new picture.
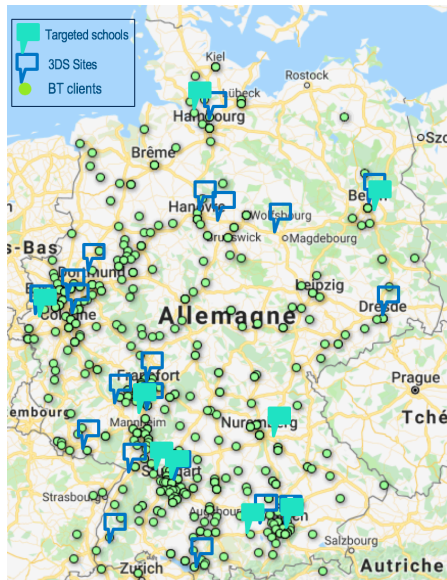


**Figure 11 Target universities in Germany**

(Source: Internal 3DS, 2018)

The central aspects regarding the target universities are the specific courses offered by them, as they need to be suitably chosen for each emerging key role in the company. The selected universities have been chosen due to their location, course offer and lecture model, since it should continue to be possible for candidates to work alongside their studies.

**Alignment key roles** - The targeted key roles to tackle future scarcity in job roles were defined internally at DS. Three main areas were highlighted in that respect: Research and Development, Engineering and Sales area. Furthermore, the company already defined specific key roles. The five key roles chosen for possible dual master positions are displayed in several areas such as role family, the role itself, in which brands by the company they are active and in which industry its settled (see figure 12).

| Role Family | Role | Brands | Industry |
|---|---|---|---|
| Services | **Solution Consultant** | All | All |
| Sales & Distribution | **Sales Representative** | All | All |
| Services | **Services Project Manager** | All | All |
| Services | **Solution Architect** | All | All |
| Sales & Distribution | **Partner Success Manager** | All | All |

**Figure 12 Key roles ECAL**

(Source: Internal 3DS, 2018)

In order to provide alignments between the choice of university and key roles at DS, a good selection illuminating the contents of each individual study courses must be concluded. The agreement between a job and the commute to university must also be well considered. The targeted universities are chosen upon closeness to company sites and suitable studies. In consultation with managers at DS the KIT Hector School in Karlsruhe, which is located close to Stuttgart, was chosen as one of the main universities, since their programs are tailor-made for professionals and companies fostering the development of their high potentials. They offer fully English master programs with six different study courses (Brotzer, 2019). The second choice located close to the company site of Stuttgart is the ESB Business School in Reutlingen. Their courses emphasize more in the roles of sales representative and solution consultant. Lastly, two more universities are being considered: the Munich University of Applied Sciences, as it aligns to the site volume of DS in Munich and the technical course options, as well as an option close to Darmstadt as in previous years there already existed a network with the university, since some employees at DS attended their doctorate from there.

A further consideration within the framework of the proposal is to offer the opportunity of obtaining a doctorate followed by a successful dual Master's degree. This step can only be planned after a successful implementation of the dual master program.

**Alignment internal processes** - In addition to the previously described alignments which are focusing on the sites, key roles and target universities, the internal processes are reflected. With the selection and beginning of cooperation with universities, the internal process can be discussed. There are two possible ways to acquire Bachelor students (See Figure 13). Version A describes the path of acquiring bachelor students who already worked for DS as interns or working students. Due to their time in the company, the adaptation and the know-how is already existent. Therefore, it is easier to adapt to the company, in case of beginning a dual master in the company. Before these candidates leave the company for a master's degree, the TA team can intervene and propose staying in the company by attending a dual program. Version B for finding candidates for the program is using Campus Recruitment. This way, the external appearance through employer branding and career and university fairs will lead to a broader recognition and acknowledgment among bachelor students. DS, especially its TA team, is already active within this area but can still extend their actions in Version B. The plan is that TA will take the lead of the pre-selection and conduct the interviews together with the responsible manager. If required, an assessment center (AC) will be used optionally, if there are too many candidates with similar requirements. As a final step, onboarding is successfully implemented in a sophisticated plan.
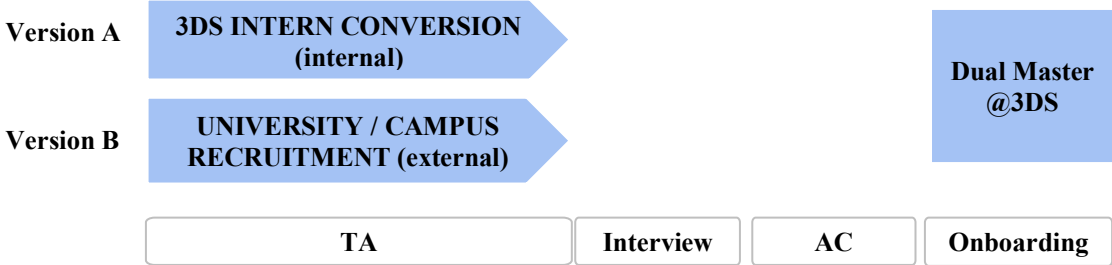


**Figure 13 Selection Process TA**

(Source: Internal 3DS, 2018)

A more detailed picture of the internal process has been drawn in figure 14. It offers an overview of each party included; from the sourcing and selection part, up-to the steps of hiring and onboarding candidates for the program. Different departments within the company are affected in the proposed project of a dual master at DS.

Apart from the TA team which holds the main responsibility within the program, departments such as Financial Planning and Analysis or Compensation and Benefits are necessary to plan the capacities and give students a perspective within their salary development. Besides the stated departments, Learning & Development plays a central role and retain the in-house trained talents in the future and show-off the internal possibilities for their personal development and career paths.
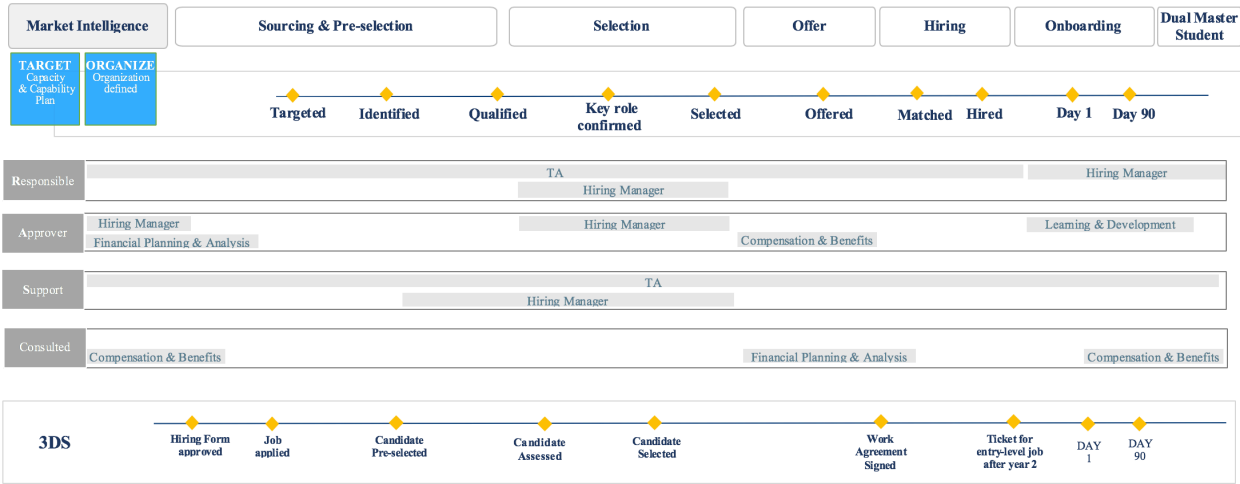


**Figure 14 Selection Process Overview**

(Source: Internal 3DS, 2018)

**Overview on costs & investment's -** After considering the alignments and selection process of the proposed project, the company discussed the financial part as well. Thus, the following financial overview has been constructed. Figure 15 is divided in two parts, as the first part describes the two years of the dual studies, whereas DS must pay the respective tuition fees and remunerate the students for two years as they will work in part-time up to 80%. The occurring tuition fee´s in this example are used as an example by the target university in Karlsruhe, which, from the universities selected, has the highest tuition fees. Besides the salary, additional costs for the company are the corresponding add-on costs (Personalnebenkosten), which apply in Germany. These can be either 21% or 15%. The second part of the figure emphasizes the full-time employees when the studies are completed.

Within the years three and four a rise on the salary applies and is added to the respective add-on costs. The investment for a candidate over the course of four years estimates 234k or 224k on average. This results in annual costs of 58k or 56k.

| | | | Salary (k €) | Salary inc. add-on costs (k €) | |
|---|---|---|---|---|---|
| | | | | 21% ** | 15%** |
| Studies | Student works part-time up to 80% | 1st year | 20,0 | 24,2 | 23,0 |
| | | 2nd year | 26,0 | 31,5 | 29,9 |
| | | Master fees* | | 30,0 | 30,0 |
| Work | Full - time employee | 3rd year | 60,0 | 72,6 | 69,0 |
| | | 4th year | 62,4 | 75,5 | 71,8 |
| | | Total costs in 4 years: (k €) | | 233,8 | 223,7 |
| | | Annual average employee costs within 4 years | | 58 | 56 |

*KIT Hector Business school
** assumed add-on costs (Personalnebenkosten)

**Figure 15 Overview Total Costs**

(Source: Own Representation)

To ensure that the investment pays-off and is not misused by the students, a repayment agreement may apply. Therefore, a repayment clause is intended to be included within the contract by the company. Hence, if candidates quit during or after their studies, they will have to reimburse the tuition fees which accrued to this moment partially.

## 7.1 Planned Execution of the Project

The implementation focuses on a sound implementation strategy, which acquires all instances. Above all, it needs to be indicated which criteria must be fulfilled by possible dual students, as well as displaying the responsibility of the company. The criteria to be fulfilled by the students are applying for advertise vacancies at the company's career website, which will be uploaded around one year prior to the official start date. Furthermore, the students hold the responsibility to apply directly to the universities. The application deadlines in Germany are mostly around mid of July, while the winter-semester usually starts in September or October. In some cases, the application deadlines vary and can be earlier than the mentioned dates. As the students hold a bachelor's degree, it needs to be assured that this degree was concluded with at least 180 credits, to fulfill the requirements at the universities they are applying to.

Lastly, the potential candidates for a dual master program should not exceed relevant work experience of more than a year, since many universities do not allow work experienced employees to apply to their programs. There are certain responsibilities DS needs to consider for the dual master's program to ensure a successful process. For one, the company is responsible to advertise positions internally and externally to receive applications.

Contracts and partnerships need to be concluded by DS and they need to give potential candidates a pleasant candidate experience. The candidate experience should include a fast and transparent process of all administrational aspects, complying with requirements such as paying at least the minimum wage and holding clear and fair contracts for the future employees. Moreover, supervision by a suitable manager with the required background needs to be ensured to assist the candidates not only in their professional but also theoretical development.

Within the concept of HR and project planning, HR Valorization comes ahead. In order to determine what to take care of by the end of a successful program, following has been concluded.
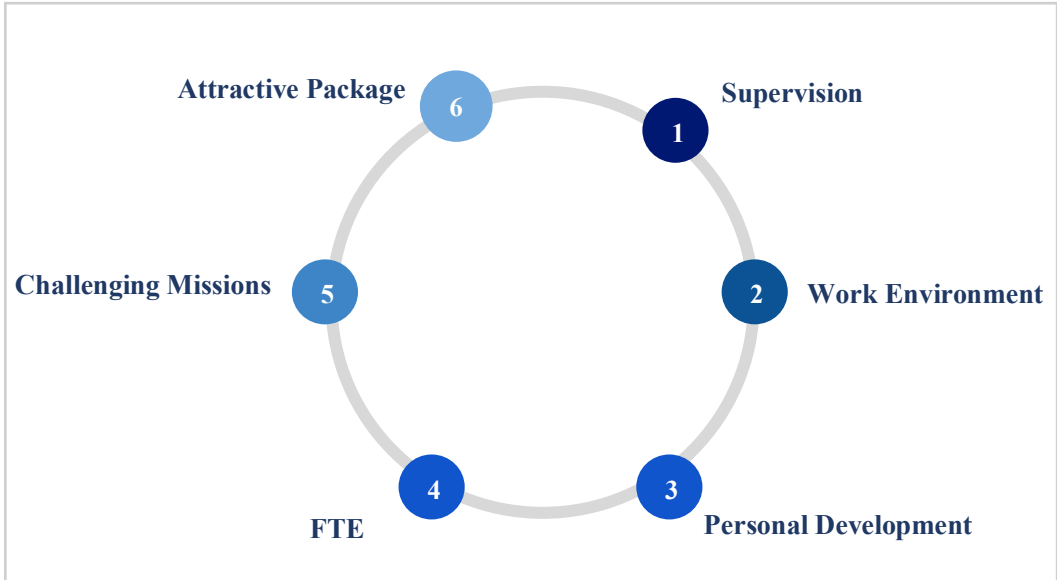


**Figure 16 HR Valorization**

(Source: Own Representation)

As shown in figure 16, several aspects are highlighted for a successful program. The first aspect is guaranteeing supervision and management of the candidates by supporting their professional path not only during but also after their studies. The second factor concerns the work environment. An appealing and competitive work environment must be assured. This can include flex time working, suitable office equipment and individual space to design the candidates' preferred environment. The next factor focuses on the personal development in the company. As highlighted before, Learning and Development plays an important role, as it is responsible to show career paths within the company and give support on the student's talent journey within 3DS.

The fourth aspect is about full-time-equivalent (FTE) which describes a unit to measure employed people in a way that makes them comparable (Glossary Eurostat online, n.d.). It is intended to have the FTE defined in the beginning to ensure getting a job at the end of the program. The fifth aspect considers the goal of giving the students challenging missions throughout the program to retain them and keep the evolution in the company growing. Lastly, attention needs to be drawn on the salary and the benefit packages, while keeping the aim to nurture junior talents loyalty and to develop within the company in mind.

## 8. Methodology

**Procedure -** The quantitative research method used to conduct the survey is a complementary part in this project. This methodology provides an insight into the perception of students regarding DS and specific attributes which they value most regarding organizations they would like to work for. Simultaneously, it offers a systematic understanding of the real environment and key objectives of the proposed program. With the help of a survey, 50 responses were gathered, analyzed and selected by specific characters. The survey was available for two weeks and took place in May 2019. The draft survey can be found in Appendix II.

**Sample -** The scope of the survey was limited to graduates in their bachelor or master's degree. The sample was chosen from the internal network and universities nearby. To obtain the information required to meet the objectives of the study, a sample of 50 students were asked to conclude the survey. The students were drawn from business and technical study backgrounds. Furthermore, the students were either internal employees (interns) currently working at DS or students from target universities in the Stuttgart area. Of the 50 respondents, 10 had not heard about the company, thus they were able to skip question items (Q3, Q4). The majority of students questioned were already working as interns or working students in Germany. This gave them some exposure understanding the characteristics of the survey and types of employment being asked. This offers an ideal sample for acquiring an understanding of the position of Dassault Systèmes in Germany and comprehend its corporate reputation on the market of the profiles they are intending to attract.

The data was gathered from the students through a self-completion survey which was divided into several question groups. The survey consisted of 19 question items representing open, closed and ranking questions as well as Likert scale questions items. Instructions regarding the completion were included in an introductory message at the beginning of the survey, but no limitations were imposed. The participants were approached personally on career fairs or through internal networks at DS. In this survey method, a web-based electronic questionnaire was chosen as it is convenient, economical and a temporally and spatially independent procedure (Wagner & Hering, 2014). The questionnaire can be distributed via the web link and the scores of items are collected and recorded into a database automatically.

**Questions and Measures** - The items of the survey elicit specific responses from individual subjects, while subjects can provide clear statements (stems). The stems focus on one variable only, since by asking several variables the accuracy of the survey data can be reduced. The survey included various response formats: One format chosen here is the open response format, which allows respondents to answer the question via free text. In this survey, this was applied in Q13. Another format used is the closed-response format. This format requires the subjects to choose from a list of options and, in this case, sometimes also included the option of "other" to add answers which have not been available for selection. This format applied in Q2, Q3, Q5, Q6, Q8, Q9, Q10, Q11, Q12 Q14, Q15, Q18 and Q19. The next format used is the Likert-type scale, which can be used to measure constructs such as attitudes. The number of scale points in this case counts five, which is usually satisfactory, permits the respondent to adopt a neutral position and avoids to losing variance. This format applies in Q4, as attributes were asked to be ranked (not at all - they are all reflected). Lastly, the format of rank lists is used in the survey. The rank list items are Q1, Q4 and Q7 and requests respondents to rate the items after their importance to them (Passmore, Dobbie, Parchman, & Tysinger, 2002). Some questions offered the possibility of multiple answers, in case when more than one of the options could apply to participants.

In surveys, non-response problems can appear, meaning participants can either refuse the participation (unit response), terminate participation (partial response) or answer questions selectively (item response) (Fielding, Lee, & Blank, 2017). With regard to the non-response problem (partial response), the survey excluded the participants which did not completed or did not submit the survey correctly. Here, of the 63 participants which received the survey, 13 did not complete or submit the survey.

For the proposed project, 50 respondents concluded all questions and were evaluated, thus they are the base of the results. With regard to measurement of scales, four types of scales accepted: nominal (can be counted), ordinal (can be counted and ordered), interval (can be counted, ordered and know the distance between each value) and ration (can be counted, ordered, know the value and contains a zero point). In the executed survey nominal scale measurement was applied as the survey it includes open and closed response formats. Another scale used in the survey is the ordinal scale measurement, since question items required the respondents to rank items after their importance to them. As a Likert scale is used in the survey as well, the interval scale measurement also applies (SAGE, 2018).

**Construction and evaluation of survey** - During the construction of the questionnaire for the student survey several topics were considered. A clear instruction in the major subject and on the completion of the items were given. The survey commences by envisioning organization participants would like to work for and rank given attributes after their personal importance to perceive an elicitation of company characteristics. The attributes were selected according to literature and internal aspects of DS. The second part concludes if the participants have heard about DS. All questions are mandatory to answer, except the subsequently questions (Q3, Q4) as they can only be answered if Q2 was responded to with "yes". When the answer "yes" applies, the following question is how participants heard of DS and, more particularly, about the attributes (same as Q1) they align with the company. The further questions address career paths in organizations in Germany and highlight different options. The next option is stating the participants likelihood of considering a dual master program in Germany and the additional potential or value they see in it. The survey then continues to address items which can help the company in concluding the program, such as relevant dimensions in the program, possible salary range and through which ways one would gain knowledge about a company. The last part consists of items to describe the sample and includes their studies, which degree they hold, age and gender. The evaluation of the survey was carried out by the online platform and converted the data into an excel table.

# 9. Analysis of Information and Conclusion of Processed Data

## 9.1 Results

In this section the results of the survey are presented, and the main findings will be indicated. First, some information about the respondents of the survey are given. Further details about the sample can be found at the end of this section.

The first question asked in the survey is to rank the presented attributes by their importance to the respondents, picturing an organization they would like to work for. The ten attributes to choose from are the following:

- Allows a lot of freedom to work on your own initiative (A1)
- Has a dynamic, forward - looking approach to their business (A2)
- Invests heavily in training and development of its employees (A3)
- Offers a lot of scope for creativity in your work (A4)
- Offers a high starting salary (A5)
- Offers clear opportunities for long-term career progression (A6)
- Cares about their employees as individual (A7)
- Provides a pleasant work-atmosphere (A8)
- Is settled at good locations (A9)
- Has a positive image in the labor market (A10)

As the most important attribute 11 people (22%) prioritised `Allows a lot of freedom to work on your own initiative´ and ranked it amongst the others as number one (see Appendix III, Q1, Ranking 1). With over one quarter of the respondents (28%), the second most important attribute in this first question is `Invests heavily in training and development of its employees` (see Appendix III, Q1, Ranking 2). The result of ranking 3 indicates that several attributes are equally important to the respondents, such as A3 (16%) and A7 (16%). However, with a slightly lead A4 (18%) stands out by one more vote (see Appendix III, Q1, Ranking 3). The attribute `Offers a high starting salary` is with 13 votes (26%), clearly ranked as top in Ranking 4 (see Appendix III, Q1, Ranking 4). The other options are almost equally ranked with seven (14%) or less votes. In ranking 5 the attribute A6 (20%) slightly exceeds attribute A5 (18%), by one vote. Correspondingly, A1(14%) is the third choice in that ranking (see Appendix III, Q1, Ranking 5).

Within ranking 6, A7 reaches with 20% the highest scored followed by A2 with 16% (see Appendix III, Q1, Ranking 6). The attribute A8 (18%) is the highest attribute chosen in rank 7. A2 (16%) and A7 (14%) are the next most frequently selected attributes (see Appendix III, Q1, Ranking 7). `Is settled at good locations`, is the highest score in ranking 8 with 22% (see Appendix III, Q1, Ranking 8). The attribute `Has a positive image in the labor market` is the most chosen answer in ranking 9 with 30% as well as in ranking 10 with 36% (see Appendix III, Q1, Ranking 9,10).

In the next section of the survey respondents are asked whether they heard of Dassault Systèmes or not. The outcome of Q2 is that 40 (80%) out of 50 (20%) respondents have already heard of the company. The subsequent question three asks the respondents to state how they have heard of DS with multiple choices possible. The following figure indicates that most of the respondents knew the company from university fairs and workshops, as well as from their software or products they already used. The third possibility is having heard of it from colleagues or friends.
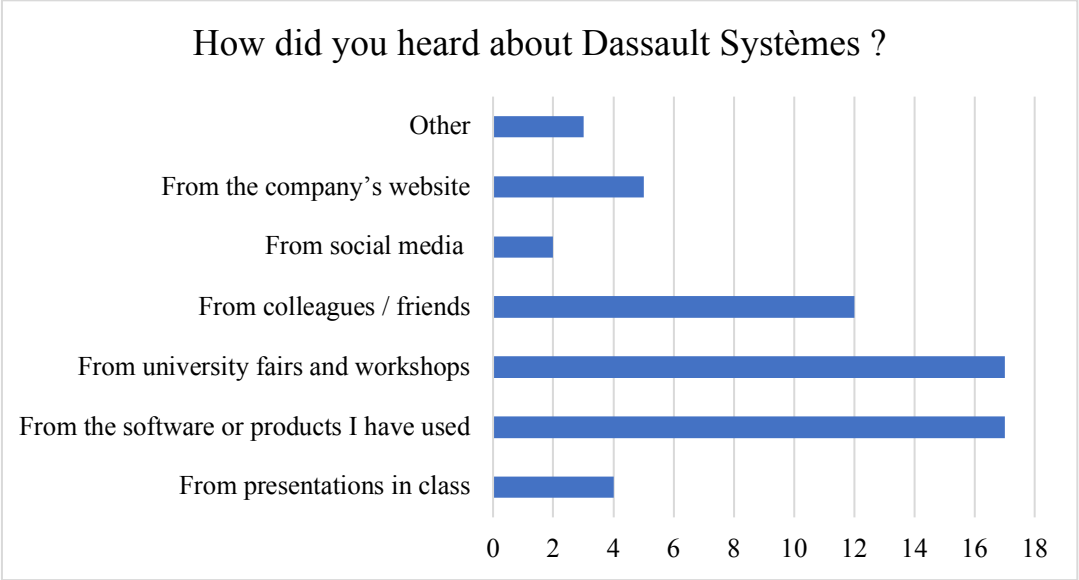


**Figure 17 Survey Results Question 3**

(Source: Own Representation)

Question four asks the 40 respondents who stated already knowing DS, to rate the attributes stated in question one after the extent to which they are reflected at DS. The extent of the reflection is specified in a Likert-scale varying from 1, meaning not at all and 5, meaning they are reflected. Due to a better overview, the results are split into two figures, mapping attributes A1 - A5 and attributes A6 - A10. Considering attribute ´allows a lot freedom` (A1) in figure 18, most of the respondents voted this attribute on scale 3 (22,5%) and 4 (25%), yet 25% provided no answer. The attribute `dynamic, forward looking approach` (A2) applies to 42,5%, fully reflected within DS or according to 27,5% on scale 4. `Invest in training and development` (A3), is mostly reflected on scale 2 by 27,5% and on scale 3 by 25%. Furthermore, the attribute `scope of creativity` (A4) is responded by 40% with no answer and describes the highest result within this attribute. Lastly, attribute `high starting salary` (A5) counts its highest score on scale 3 with 40%.
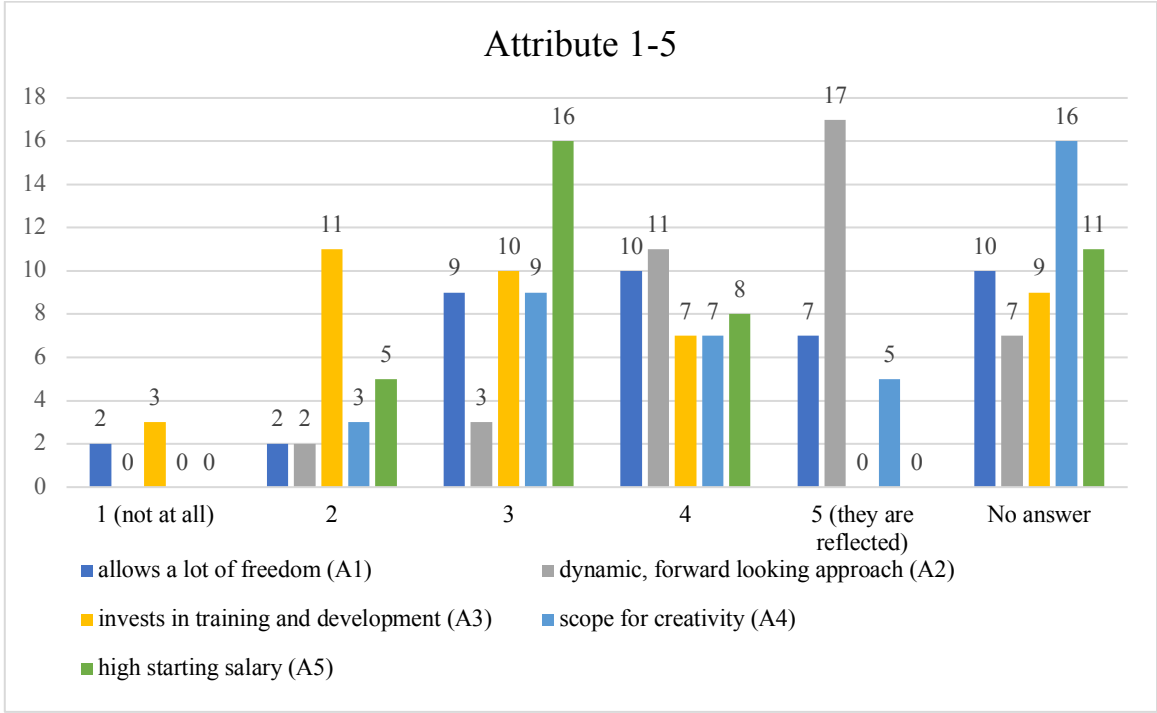


**Figure 18 Survey Results Question 4, I.**

(Source: Own Representation)

Continuing by the next figure, the attribute `clear opportunities long-term career` (A6) displays the highest responses on scale 2 with 37,5%. Followed by the attribute `cares about their employees` (A7), most responses with 35% state no answer and 30% are ranked on scale 3. Next to describe is the attribute `settled at good locations` (A8) and shows that 40% ranked it on scale 4 and 30% on scale 5. Considering `provides a pleasant work-atmosphere` (A9) is most reflected on scale 4 with 32,5%. Lastly, the attribute of `positive image in the labor market` (A10) counts its highest score with 30% on scale 4.
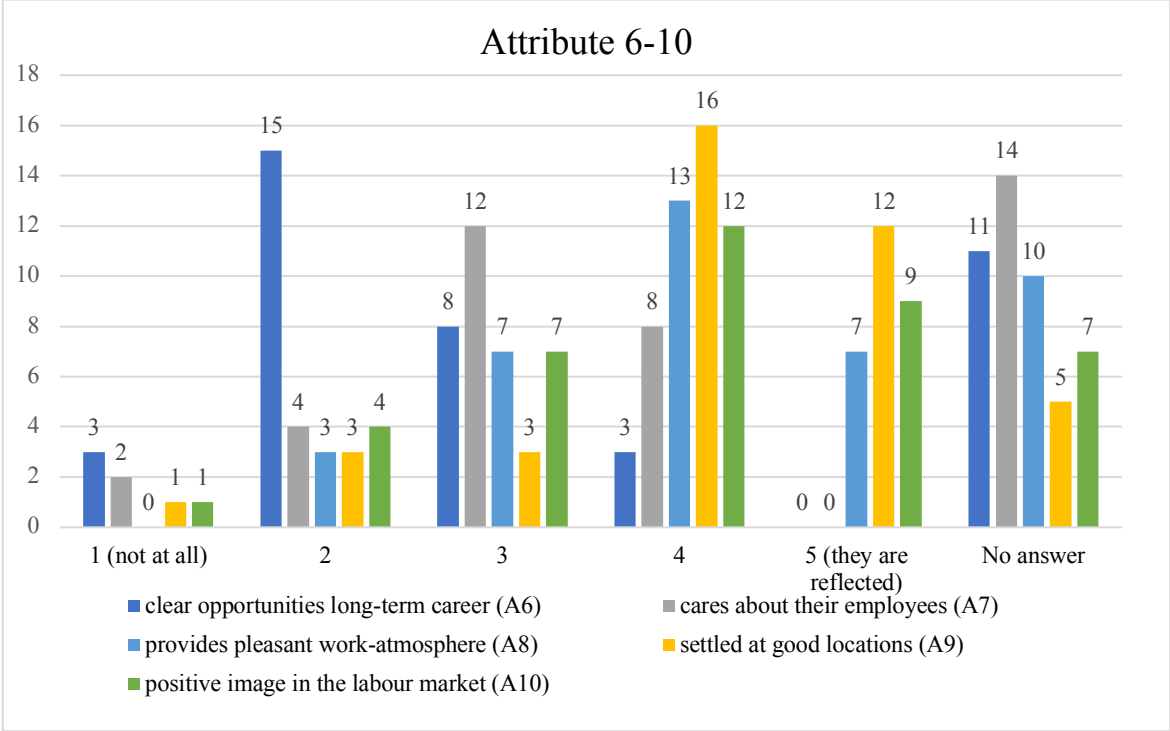


**Figure 19 Survey Results Question 4, II.**

(Source: Own Representation)

The next section within this survey focuses on possible career paths. The respondents were asked to rate if they would expect a variety of career paths for students or graduates in question five. The result on that question stated that 96% would a variety of career paths (see Appendix III, Q5).

Question six enables the respondents to choose one or more possibilities regarding selection of given career paths. Most of the respondents expects working student positions (92%) and internships (86%), followed by dual study programs with 80%. Thesis writing positions are chosen with 74% and lastly traineeships with 66%.
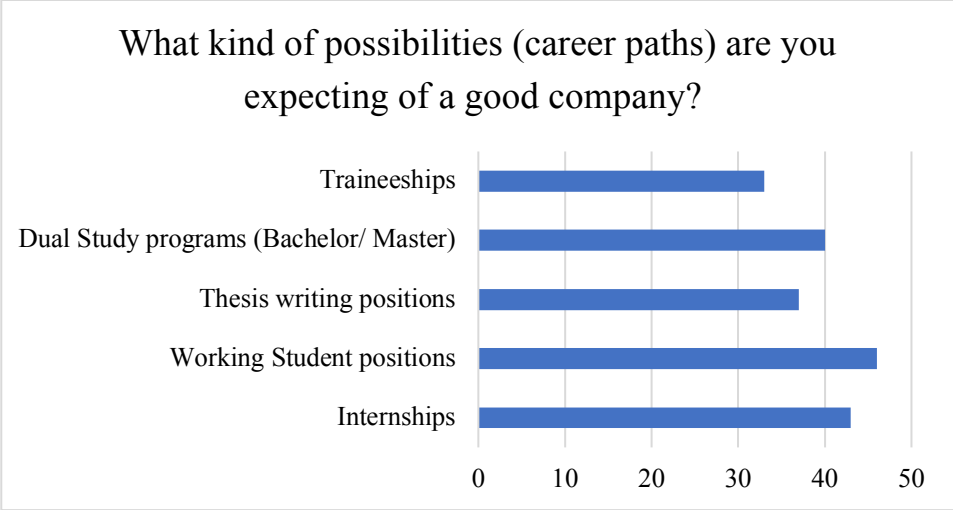


**Figure 20 Survey Results Question 6**

(Source: Own Representation)

In question seven the respondents are asked to rank the given career paths by their importance to them. Only the highest scores of answers are described in the result. As shown in figure 21, 64% rank internships as the most important career path for students or graduates. Ranking 2 indicates that working student positions are the second most important for 46% of respondents. Followed by dual study programs as ranked number three with 56%. On ranking 4 it is shown that traineeships count 44%. The least prioritized career paths for students or graduates are thesis writing positions with 36%.
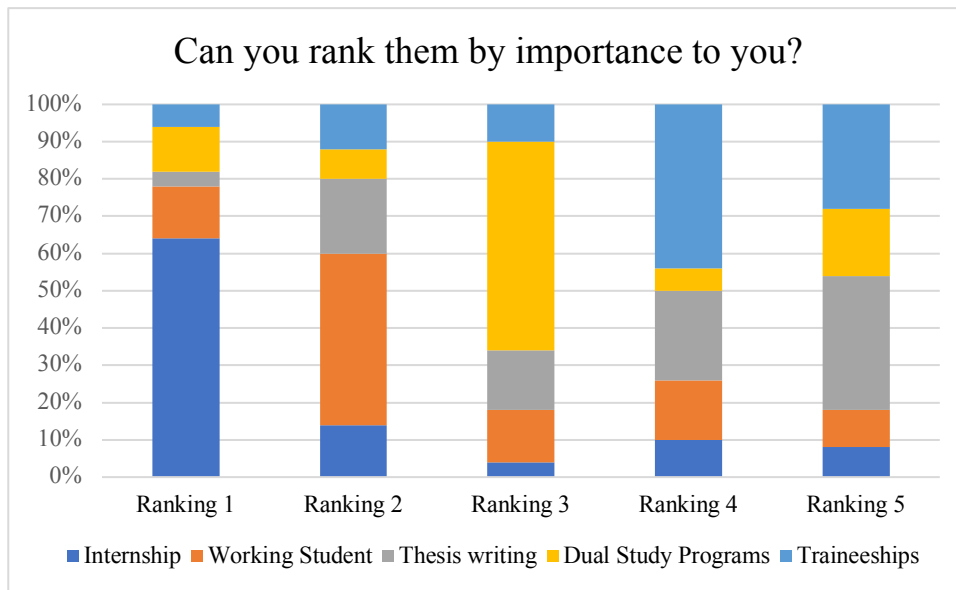
**Figure 21 Survey Results Question 7**

(Source: Own Representation)

The survey continues by asking the respondents how they collect information about possible employers and their career options by giving multiple choices. The most frequently selected answer is company career websites (82%), followed by job search engines (76%). Thirdly, information is being collected through personal network and referrals (68%) succeeded by recommendation of universities (36%). The least used option to collect information about possible employers are job boards (28%) (see Appendix III, Q8).

As the next section, the survey continues to detect the intention of the respondents to start a dual master program in an organization in Germany. Therefore, the respondents are able to choose between 1 to 5 on a Likert-scale, whereas 1 means there is no chance at all to consider a dual master program and 5 means there is definitely a chance. The results show that only 2% of the respondents would not consider a dual master program, 8% rate a consideration of a program on scale 2, whereas 34% of the asked persons would rank the possibility on scale 3. Equal percentage (34%) is counted on scale 4. Lastly, 22% will definitely consider a dual master program in Germany (see Appendix III, Q9).

Question 10 emphasizes the potential added value of a dual master program and gives the respondents one or more options to choose from. The main findings state that with 94% `combination of theory and practice` and with 84% `steady salary while studying`, followed by `internal career perspectives` with 76% and `developing a network` with 68% are seen as potential added value (see figure 22).
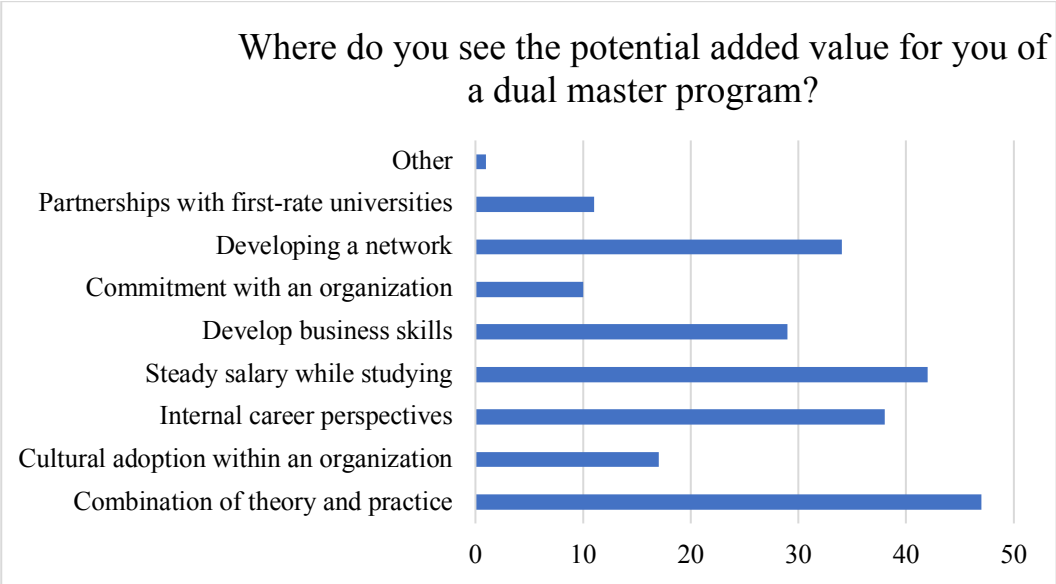


**Figure 22 Survey Results Question 10**

(Source: Own Representation)

In question 11, the respondents are asked to distinguish if several dimensions are relevant in case of an implementation of a dual master program in a company. The most prioritized dimension is mentorship with 76%, succeeded by career perspectives with 72%. Talent development is indicated with 66%, followed by the competitive salary package with 60%. The lowest relevance distinguished is work environment with 44% and challenging program/ tasks with 42% (see figure 23).

If that company you would love to work for would implement a dual master program, which dimensions would you distinguish as relevant?
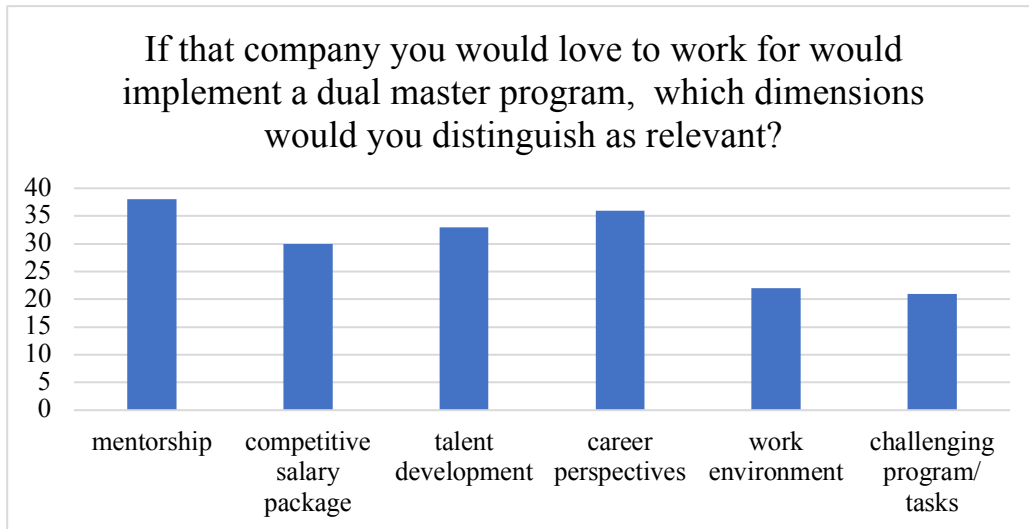
**Figure 23 Survey Results Question 11**

(Source: Own Representation)

To support the proposed project, conceptualize by the author, the survey also included a question which could be used in the proposal of the financial aspects. Therefore, the respondents are asked in question 12 to choose between several suggestions of a possible salary during a dual master program. The figure states that the majority (58%) would expect a salary range of 1501€ to 2000€ per month. The first proposed range of up to 1500€ (14%) and the last range over 2500€ (2%) are more or less not expected.



Please tick which salary range you would expect to receive in Germany during a dual master program in an organization?
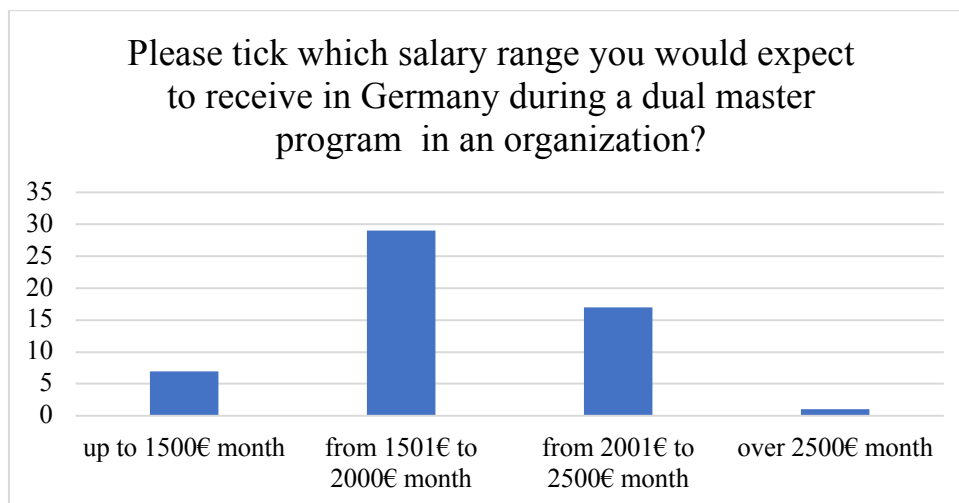
**Figure 24 Survey Results Question 12**

(Source: Own Representation)

The last section of the survey gathers information about the 50 respondents for sample description purposes. Therefore, question 15 asks how many respondents have been working as interns or working students in Germany before. The results states that 92% have been working in Germany already, whereas only 8% have not been working in Germany (see Appendix III, Q15). Question 16 asks the respondents in which area they are currently studying or studied in the past. The possibilities to choose from are technical and business studies. The survey reveals that 62% of the respondents studied in the technical area and 38% in the business area (see Appendix III, Q16). Furthermore, it is asked which degree they are in. 56% replied that they currently are in their bachelor degree, whereas 44% are in their master degree (see Appendix III, Q17). According to the results of question 18, which asks about the age of respondents, 10% are under 20 years old, 58% are between 21 - 24 years old, 28% are between 25-30 years old and 4% are older than 30 years (see Appendix III, Q18). Reflecting the gender of respondents in question 20, 40% are female and 60% are male (see Appendix III, Q19).

## *9.2 Discussion*

In this section the general findings of the survey are discussed and linked to the literature underlying this thesis. Subsequently, the findings will be connected with the objectives of the project and answer whether the objectives can be reached through the proposal of a dual master program at DS. The aim of this chapter is to highlight significant differences of the survey, needs and trends for the company and indicate whether the assumptions made in chapter V are supported or not.

The first part within the discussion aims to link findings in the literature with the survey results. The first question in the survey was to rank attributes according to the respondents' importance of what an organization would need to be a possible employer. The attributes were ranked as follows:

1. *`Allows a lot of freedom to work on your own initiative`*
2. *`Invests heavily in training and development of its employees`*
3. *`Offers a lot of scope for creativity in your work`*
4. *`Offers a high starting salary`*
5. *`Offers clear opportunities for long-term career progression`*
6. *`Cares about their employees as individual`*
7. *`Provides a pleasant work-atmosphere`*

*8. `Is settled at good locations`*

*9. & 10. `Has a positive image in the labor market`*

As found in the relevant literature the main attributes highlighted are the general remuneration aspects including attractive pay, reward management, benefits and, especially in technological centers, stock options can be reasons to attract and retain high-skilled talents. Other attributes mentioned include well-defined career paths in a company by including training, mentorship and development programs, offering a high degree of flexibility at work and emphasis on people. These attributes were also confirmed in the survey by the respondents. Nevertheless, there have been attributes highlighted as important in the literature, which did not meet the same importance by the respondents in the survey. One of them, namely reputation, was, in fact, ranked with lowest importance by the respondents which can be explained by the group of respondents. As the participants are all graduates it can be estimated that other attributes in this target group are regarded more importantly when thinking about a future organization to work for.

The attributes stated in literature and the ones mentioned in the survey vary depending on which target group is being assessed. Therefore, the Deloitte Millenial Survey (2018) matches the survey results more than other literature reviews. Within the Deloitte Survey, attributes such as financial rewards, workplace culture and a high degree of flexibility at the workplace were highlighted.

Further findings revealed that the company was known by 80% of the respondents. However, respondents were also previous DS interns, therefore this outcome is not representative.

The literature review highlighted various aspects of benefits in case of including dual programs in the portfolio of career paths. One of the benefits stated is the combination of theoretical and practical terms, as students make direct use of their newly acquired knowledge. More benefits included a steady remuneration and possibilities for career-entries. The statements within literature match the survey's outcome on the potential added value of a dual master program (Q10), regarding the highest selected items of the question which were: combination of theory and practice, steady salary while studying as well as internal career perspectives, which concurrently also includes developing a network.

Responding to the assumption how to nurture talent, the literature presented the AMO-model. Combining the AMO-model with the project´s objectives, a new figure can be displayed. Figure 25 unites the aimed objectives with the necessary dimensions which DS wants to conclude in the program. By focusing on the target group its employees performance and organizational success will be increased. The HR practices used in the program are aligned to the theory.
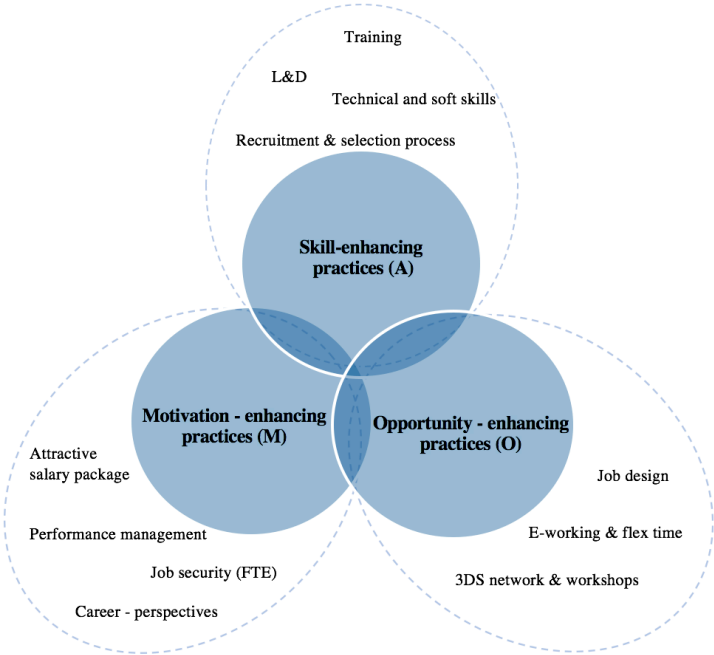


**Figure 25 Combined AMO-model**

(Source: Own Representation)

As stated in the literature review, identifying pivotal talent pools, which include job roles or competencies can make a difference to a company's strategic success (Boudreau & Ramstad, 2005). Therefore, DS identified its emerging key roles and targeted talent groups in order to meet the requirements as stated in the literature review. The key roles at DS were identified internally and are mainly found in the areas of Research and Development as well as Engineering and Sales. A further addition to other roles in the program is still to be discussed. The key roles are filled with graduates, since the company perceives the main benefit in the conversion of interns to dual master students.

The selection process in the program's framework has indicated two ways how to select suitable candidates for the program, therefore it aligns what the theory suggests. The theory supports the approach to focus on students for long-term retention and highlights that dual students are mostly characterized by high performance, resilience and motivation as the program, which can be very advantaged for the company.

Subsequently, the second part in the discussion focuses on crossing significant survey results and objectives of the presented programs framework.

Regarding the question how people heard of DS (Q3), the highest response rates were by the use of their software products or through university fairs. The result supports the strategy concluded in the TOWS-matrix. The company should extend activities at universities and workshops and arrange cooperation with target universities to brand software products at technical universities by licensing them to the universities at affordable rates or by using the proximity for research cooperation or exchange of ideas. This will also increase the word-to-mouth placement amongst students.

Question four in the survey aims to reflect specific attributes at Dassault Systèmes. The lowest ranked attribute by the respondents is `clear opportunities long-term career`. The project at DS intends to counteract the low ranking by planning a long-term strategy that invests in a graduate program and ensures career paths in the company. Another low ranked attribute is `invest in training and development`. Hence, by including principles in the program, such as mentoring, supervision, showing career paths and concentrating more on the role and importance of L&D, the program can provide a solution.

In Q6 of the survey participants were asked to rank career paths regarding their importance to them. The rank of dual studies was on rank three. As DS already provides the most important ranked paths, i.e. working students positions and internships, the results of the survey support the companies plan to invest in dual study programs. Dual studies have also been ranked before traineeships and thesis writing positions.

Question nine focuses on whether the participants would consider a dual master program in Germany or not. The compound number states that 90 % of respondents see a good chance or will definitely consider a dual master program in Germany as a possible career start. This obviously shows that it is necessary and useful to implement such a program within their portfolio of career paths at DS in order to attract talented employees.

Regarding the results of Q10, which reflects the potential added value of a dual master program, one of the highest ranked factors are the internal career perspectives. However, in Q4 when respondents were asked to rank the attributes at DS, the item of `clear opportunities long-term career` was ranked significantly low. Due to the fact that this program is seen as a helpful instrument to increase internal career perspectives, it is the ideal instrument to tackle the highlighted issue.

Regarding the results of Q11, which asked to indicate relevant dimensions when implementing a dual master program, it can be noted that all dimensions can be found in the programs framework as well. As outlined in the project, especially for employees with technical and soft skill capabilities, a high degree of mentorship and supervision, is an essential characteristic of this program. Furthermore, the importance of Learning & Development will have an immense impact on the program, as it leads students through possible career perspectives, supports the talent development and provides a challenging program and tasks for dual students in collaboration with TA. The proposed program will also include a competitive salary package, which was the fourth most important dimension within the survey. Owing to the increasing importance of flexibility of the work place (Deloitte Millenial Survey, 2018), a pleasant work environment with flexible work structures is another significant characteristic of the program.

The result of Q12 states that the majority of respondents (58%) attending a dual master program, would expect a salary range of 1501€ to 2000€ per month. This outcome matches the expected salary DS is planning to pay precisely.

Ultimately, it can be stated that the questionnaire focused on the correct target group, as the majority of respondents (62%) matched the targeted group DS wants to focus on. Reflecting the results of the survey in combination with the proposed project, there are aspects DS can improve. This emphasizes opportunities of long-term career perspectives and investment in training and development. These issues can be countered by the implementation of a dual master program. Additionally, TM can be used to obtain and retain the talents critical for success.

# *10. Conclusion*

The literature confirmed, that providing talents in an organization, has become one of the most important concerns of Human Resource Management (Muntean, 2014). As Dassault Systèmes faces the same challenges as stated in the literature, they are urged determine new HR practices in order to establish long-term talent programs and fill their emerging key roles of the future. Consequently, building and developing a special DS workforce was noted of becoming crucial in the future. As the study intended contributing to the company's success and body, the aim was to develop strategies for DS, by investigating the perceptions of students using a survey and investigating concepts in literature in the field of HRM.

The literature investigated talent management and how it should be applied in organizations to attract, retain and develop. It is highlighted that HR practices should not particularly be limited on specific tools, such as recruitment but rather focus on activities and processes which involve systematic identification of key positions, development, focusing on individual needs and adapting the corporate strategy to the strategy to implement HR practices. The proposed framework gives DS the opportunity to implement a dual master program based on the concept of talent management and employer branding and use it as their strategic asset to manage their human capital in the future.

The assumptions made at the beginning of the study were assessed in this work. The project displayed that DS can only cope with an increasing competitive market if strategies are carefully developed. Thus, the study was designed to use the approach of a TOWS-matrix to conclude strategies which support DS to gain attractiveness as employer, regarding their reputation and employer brand. As a critical factor, the research revealed that a lack of strategy inhibits a successful implementation. Talent management, however, is a strategic tool which needs to be constantly updated and improved (Cannon & McGee, 2011). Moreover, the program intended to provide a solution on how to secure and nurture the talents of the future in order to fill the emerging key roles in the company. Therefore, the proposed project offers a long-term solution.

**Practical implications** - The findings in the survey make a practical contribution to DS as the results have given an insight on which attributes are reflected in the company in contrast to an imaginative organization. Furthermore, DS was able to review and adapt the participants responses to implement them in the project's framework.

The indications of the participants results can be used as suggestions for DS, since it was noted that current attraction strategies are not yet sufficient. An implication for DS is making greater use of their own software products at universities in the sense of EB, while raising their level of awareness, especially at universities among students. Moreover, an issue concerning the internal movement of the HR Team is activities at universities: The HR Team must stretch their activities at universities, extend their HR capacities and take advantage of the word-to-mouth-placement.

**Limitations -** The survey used in the project is viewed as a supportive part in the thesis and does not provide representative results since surveys have limitations as research tools. They rely on the subjects' honesty, thus receiving socially and culturally acceptable responses to items that address internal topics which may bias survey results. In this project participants of the survey were current or previous interns at DS. Thus, they might be biased or influenced by their current position and perception of the company. Another limitation of the survey is the obtained quality of data by respondents, as it depends on the understanding of survey items. The in-company project was conducted and placed in Germany, but the survey itself was mailed in English to ensure results being the same language as this work is being presented. This limitation could have been addressed through a second version or translation in German, included at the time of the design of the survey.

Furthermore, it can be noted that increasing attractiveness in employer branding is not a universal concept and can be perceived differently by varies of countries or generations. Therefore, DS should examine their most valued aspects and corporate strategy for this program, especially for the German labor market and aimed target group, rather than the international company sites. In general, the success of the program can have different effects and success in other companies than DS. In this in-company project, all sources and results were particularly focused on the company Dassault Systèmes Germany and was only conceptualized and based on their characteristics.

*"Hiring right to invest right"*
(L. Barthes, Head of People and Environment, 2018)

Following the newly set policies in the company, DS will be able to secure talents in their organization by investing correctly. The presented project offers a solution on how the policies can be realized on the German market. This in-company project: Dual Master@3DS can be used as strategic asset to leverage its employer attractiveness and to attract, retain and develop junior-level profiles.

# *Bibliography*

Aguinis, Aguinis, H., Gottfredson, R. K., & Joo, H. (2012). Using performance management to win the talent war. *Business Horizons*, *55*(6), 609–616. https://doi.org/10.1016/j.bushor.2012.05.007

Alnıaçık, E., Alnıaçık, Ü., Erat, S., & Akçin, K. (2014). Attracting Talented Employees to the Company: Do We Need Different Employer Branding Strategies in Different Cultures? *Procedia - Social and Behavioral Sciences*, *150*, 336–344. https://doi.org/10.1016/j.sbspro.2014.09.074

Ambler, T., & Barrow, S. (1996). The employer brand. *Journal of Brand Management*, *4*(3), 185–206. https://doi.org/10.1057/bm.1996.42

Anholt, S. (2007). What is Competitive Identity? In S. Anholt, *Competitive Identity* (pp. 1–23). https://doi.org/10.1057/9780230627727_1

Appelbaum, E., Bailey, T., & Berg, P. (2000). *Manufacturing advantage: Why high-performance work systems pay off* (Economic Policy Institute, Ed.). Ithaca, NY: Cornell Univ. Press.

Arbeitgeber.de Retrieved from: https://www.arbeitgeber.de/www/arbeitgeber.nsf/res/Duales-Studium.pdf/$file/Duales-Studium.pdf (lastly retrieved on 10.05.2019).

Ashton, C., & Morton, L. (2005). Managing talent for competitive advantage: Taking a systemic approach to talent management. *Strategic HR Review*, *4*(5), 28–31. https://doi.org/10.1108/14754390580000819

Auger, P., Devinney, T., Dowling, G. R., Eckert, C., & Lin, N. (2013). How much does a company's reputation matter in recruiting? *MIT Sloan Management Review*, *54*(3), 79–88.

Becker, G. S. (1967). *The economic approach to human behavior*. Retrieved from http://site.ebrary.com/id/10991177

Berg, T. (2014). Duale Studienformen in Deutschland. Ein Angebot im produktiven Umgang mit studentischer Heterogenität? 22. *Journal für Wissenschaft und Bildung 23*. S. 88 - 103.

Bos-Nehles, A. C., Van Riemsdijk, M. J., & Kees Looise, J. (2013). Employee Perceptions of Line Management Performance: Applying the AMO Theory to Explain the Effectiveness of Line Managers' HRM Implementation: Employee Perceptions of Line Management Performance. *Human Resource Management*, *52*(6), 861–877. https://doi.org/10.1002/hrm.21578

BostonConsultingGroup Retrieved from https://www.bcg.com website: https://www.bcg.com/publications/2014/organization-human-resources-creating-people-advantage.aspx (lastly retrieved on 01.04.2019).

Boudreau, J. W., & Ramstad, P. M. (2005). Talentship, talent segmentation, and sustainability: A new HR decision science paradigm for a new strategy definition. *Human Resource Management*, *44*(2), 129–136. https://doi.org/10.1002/hrm.20054

Brotzer, A. (2019 ). HECTOR School - Technology Business School of the Karlsruhe Insitute of Technology (KIT)Master Programs. Retrieved from https://www.hectorschool.kit.edu/master_programs.php (lastly retrieved on 25.05.2019)

Cannon, J. A., & McGee, R. (2011). *Talent management and succession planning*. London: Chartered Inst. of Personnel and Development.

Cappelli, P. (2008). Talent management for the twenty-first century. *Harvard Business Review*, *86*, 74–81, 133.

Collings, D. G., & Mellahi, K. (2009). Strategic talent management: A review and research agenda. *Human Resource Management Review*, *19*(4), 304–313. https://doi.org/10.1016/j.hrmr.2009.04.001

Dassault Systemès (2018): Annual Report 2018. Retrieved from: https://www.3ds.com/fileadmin/COMPANY/Investors/Annual-Reports/PDF/2018-3DS-Document-de-reference-EN.pdf.pdf (lastly retrieved on 01.05.2019).

Dassault Systèmes (2019). Retrieved from: https://www.3ds.com/de/ (Lastly retrieved on 01.06.2019)

Delaney, J. T., & Huselid, M. A. (1996). THE IMPACT OF HUMAN RESOURCE MANAGEMENT PRACTICES ON PERCEPTIONS OF ORGANIZATIONAL PERFORMANCE. *Academy of Management Journal*, *39*(4), 949–969. https://doi.org/10.2307/256718

Deloitte Millenial Survey (2018) Retrieved from: https://www2.deloitte.com/de/de/pages/innovation/contents/Millennial-Survey-2018.html (Lastly retrieved on 30.06.2019)

Dima, A., Begu, L., Vasilescu, M., & Maassen, M. (2018). The Relationship between the Knowledge Economy and Global Competitiveness in the European Union. *Sustainability*, *10* (6), 1706. https://doi.org/10.3390/su10061706

Edwards, M. (2017). Employer branding and talent management. In D. Collings, K. Mellahi and W. Cascio (Ed.). *The Oxford Handbook of Talent Management* (233-248). Oxford: Oxford University Press.

Fielding, N., Lee, R. M., & Blank, G. (2017). *The SAGE handbook of online research methods*.

Garavan, T. N., Carbery, R., & Rock, A. (2012). Mapping talent development: Definition, scope and architecture. *European Journal of Training and Development*, *36*(1), 5–24. https://doi.org/10.1108/03090591211192601

Garavan, T. N., & Morley, M. (1997). The socialization of high-potential graduates into the organization. *Journal of Managerial Psychology*. https://doi.org/10.1108/02683949710164208

Glossary Eurostat:Full-time equivalent (FTE) - Statistics Explained. (n.d.). Retrieved from: https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Full-time_equivalent_(FTE) (Lastly retrieved on 07.09.2019)

Hedayati Mehdiabadi, A., & Li, J. (2016). Understanding Talent Development and Implications for Human Resource Development: An Integrative Literature Review. *Human Resource Development Review*, *15*(3), 263–294. https://doi.org/10.1177/1534484316655667

Hegarty, B. (2018). Tech recruiting: How to attract and retain employees in today's full employment economy. *Strategic HR Review*, *17*(5), 265–266. https://doi.org/10.1108/SHR-10-2018-147

Hofmann, S., König, M., Pollmer, M., Wesling, M., Hemkes, B., Gülkaya, Ü., … Bundesinstitut für Berufsbildung. (2018). *AusbildungPlus - Duales Studium in Zahlen Sonderauswertung im Handwerk*.

Hurst, J. L., Good, L. K., & Gardner, P. (2012). Conversion intentions of interns: What are the motivating factors? *Education + Training*, *54*(6), 504–522. https://doi.org/10.1108/00400911211254280

Immerschmitt, W., & Stumpf, M. (2018). *Employer Branding Für KMU der Mittelstand als attraktiver Arbeitgeber*. Springer Gabler, Wiesbaden.

Jiang, K., Lepak, D. P., Hu, J., & Baer, J. C. (2012). How Does Human Resource Management Influence Organizational Outcomes? A Meta-analytic Investigation of Mediating Mechanisms. *Academy of Management Journal*, *55*(6), 1264–1294. https://doi.org/10.5465/amj.2011.0088

Krone, S., Nieding, I., & Ratermann-Busse, M. (2019). *Dual studieren - und dann?: Eine empirische Studie zum Übergangsprozess Studium–Beruf dualer Studienabsolvent/inn/en*. Retrieved from http://www.boeckler.de/pdf/p_study_hbs_413.pdf (Lastly retrieved on 15.05.2019)

Langenegger, P. B., Mahler, P., & Staffelbach, B. (2011). Effectiveness of talent management strategies. *European J. of International Management*, *5*(5), 524. https://doi.org/10.1504/EJIM.2011.042177

Lawler, E. E. (2017). *Reinventing talent management: Principles and practices for the new world of work* (First edition). Oakland, CA: Berrett-Koehler Publishers, Inc.

Lepak, D. P., Liao, H., Chung, Y., & Harden, E. E. (2006). A Conceptual Review of Human Resource Management Systems in Strategic Human Resource Management Research. In *Research in Personnel and Human Resources Management* (Vol. 25, pp. 217–271). https://doi.org/10.1016/S0742-7301(06)25006-0

Lewis, R. E., & Heckman, R. J. (2006). Talent management: A critical review. *Human Resource Management Review*, *16*(2), 139–154. https://doi.org/10.1016/j.hrmr.2006.03.001

Lukasczyk, A. (2012). *Employer Branding: Die Arbeitgebermarke gestalten und im Personalmarketing umsetzen* (cable). Bielefeld: Bertelsmann.

Mahaffey, C. (1999). The First 30 Days: The Most Critical Time to Influence Employee Success. *Employment Relations Today (Wiley)*, *26*(2), 53–60. https://doi.org/10.1002/ert.3910260207

McDonnell, A. (2011). Still Fighting the "War for Talent"? Bridging the Science Versus Practice Gap. *Journal of Business and Psychology*, *26*(2), 169–173. https://doi.org/10.1007/s10869-011-9220-y

McLagan, P. A. (1989). Models for HRD Practice. *Training & Development Journal*, *43*(9), 49.

Mosley, R. W. (2007). Customer experience, organisational culture and the employer brand. *Journal of Brand Management*, *15*(2), 123–134. https://doi.org/10.1057/palgrave.bm.2550124

Muntean, S. N. (2014). Talent management and its contributions to the performance of the multinational organizations. Revista Academiei Fortelor Terestre Nr. 3 (75)/ 2014.

Muyia, M. H., Wekullo, C. S., & Nafukho, F. M. (2018). Talent Development in Emerging Economies Through Learning and Development Capacity Building. *Advances in Developing Human Resources*, *20*(4), 498–516. https://doi.org/10.1177/1523422318803089

Narayanan, A., Rajithakumar, S., & Menon, M. (2018). Talent Management and Employee Retention: An Integrative Research Framework. *Human Resource Development Review*, 153448431881215. https://doi.org/10.1177/1534484318812159

Nielson, R.P. and Porter, R.C. (1983). Employer benefits and cost effectiveness of cooperative education programs: a review, Journal of Cooperative Education, Vol 20 No. 1, pp. 11-24

Nijs, S., Gallardo-Gallardo, E., Dries, N., & Sels, L. (2014). A multidisciplinary review into the definition, operationalization, and measurement of talent. *Journal of World Business*, *49*(2), 180–191. https://doi.org/10.1016/j.jwb.2013.11.002

Passmore, C., Dobbie, A. E., Parchman, M. L., & Tysinger, J. W. (2002). Guidelines for constructing a survey. *Family Medicine*, *34*(4), 281–286.

Rousseau, D. (1995). *Psychological Contracts in Organizations: Understanding Written and Unwritten Agreements*. https://doi.org/10.4135/9781452231594

Rousseau, D. (1989). Psychological and implied contracts in organizations. *Employee Responsibilities and Rights Journal*, *2*(2), 121–139. https://doi.org/10.1007/BF01384942

SAGE Publication (2018) Retrieved from: https://us.sagepub.com/sites/default/files/upm-binaries/81571_Chapter_5.pdf (Lastly retrieved on 31.08.2019)

Tansley, C. (2011). What do we mean by the term "talent" in talent management? *Industrial and Commercial Training*, *43*(5), 266–274. https://doi.org/10.1108/00197851111145853

Thunnissen, M., Boselie, P., & Fruytier, B. (2013). A review of talent management: 'Infancy or adolescence?' *The International Journal of Human Resource Management*, *24*(9), 1744–1761. https://doi.org/10.1080/09585192.2013.777543

Vaiman, V., Sparrow, P. R., Schuler, R. S., & Collings, D. G. (Eds.). (2019). *Macro talent management in emerging and emergent markets: A global perspective*. London New York, NY: Routledge Taylor & Francis Group.
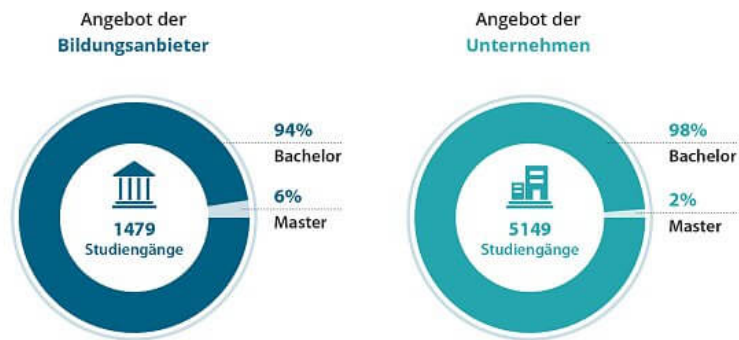
Wagner, P., & Hering, L. (2014). Online-Befragung. In N. Baur & J. Blasius (Eds.), *Handbuch Methoden der empirischen Sozialforschung* (pp. 661–673). https://doi.org/10.1007/978-3-531-18939-0_48

Wilson, N. H. F., Verma, M., & Nanda, A. (2019). Leadership in recruiting and retaining talent in academic dentistry. *Journal of Dentistry*, S0300571219300892. https://doi.org/10.1016/j.jdent.2019.05.005

# *Appendices*

**Appendix I**



(Source: Statistics Dual studies in Germany 2018 https://www.wegweiser-duales-studium.de/statistik-

2018/)

# Appendix II

| Data entry |
|---|
| **Survey Master Thesis** |
| **Q1** |

| Q1 | *Think about an organization you would like to work for. How important are the following attributes to make your choice if you would or not apply to that organization? Rank them after their importance for you. | **Your choices:** <br> - Allows a lot of freedom to wo <br> - Has a dynamic, forward – loo <br> - Invests heavily in training ar <br> - Offers a lot of scope for crea <br> - Offers a high starting salary <br> - Offers clear opportunities for <br> - Cares about their employees <br> - Provides a pleasant work-atr <br> - Is settled at good locations <br> - Has a positive image in the l | **Your ranking:** <br> 1: <br> 2: <br> 3: <br> 4: <br> 5: <br> 6: <br> 7: <br> 8: <br> 9: <br> 10: |

| **Q2** |
|---|

| Q2 | *Have you heard of the company Dassault Systèmes ? If no , please skip the follwing two questions. | Please choose.. |

| Q3 | If yes: How did you heard about Dassault Systèmes ? | ☐From presentations in class <br> ☐From the software or products I have used <br> ☐From university fairs and workshops <br> ☐From colleagues / friends <br> ☐From social media <br> ☐From the company's website <br> Other |

| Q4 | If yes:  Can you estimate to what extent these attributes are reflected at Dassault Systèmes?   Scale them to 1-5 (not at all - they are reflected) | Allows a lot of freedom to work on your own initiative | Please choose.. |
| | | Has a dynamic, forward – looking approach to their business | Please choose.. |
| | | Invests heavily in training and development of its employees | Please choose.. |
| | | Offers a lot of scope for creativity in your work | Please choose.. |
| | | Offers a high starting salary | Please choose.. |
| | | Offers clear opportunities for long-term career progression | Please choose.. |
| | | Cares about their employees as individual | Please choose.. |
| | | Is settled at good locations | Please choose.. |
| | | Provides a pleasant work-atmosphere | Please choose.. |
| | | Has a positive image in the labour market | Please choose.. |
| | | None of them are reflected in the company | Please choose.. |

| | | |
|---|---|---|
| | **Q5** | |

| Q5 | *If you chose a company would you be expecting it to offer you a variety of career paths for students / graduates? | Please choose.. ⌄ |
|---|---|---|
| Q6 | *What kind of possibilities (career paths) are you expecting of a good company? (Chose one or more options) | ☐ Internships<br>☐ Working Student positions<br>☐ Thesis writing positions<br>☐ Dual Study programs (Bachelor/ Master)<br>☐ Traineeships<br>Other [ ] |

| Q7 | *Can you rank them by importance to you? | **Your choices:**<br>- Internships<br>- Working Student positions<br>- Thesis writing positions<br>- Dual study programs (Bache<br>- Traineeships | **Your ranking:**<br>1: [ ]<br>2: [ ]<br>3: [ ]<br>4: [ ]<br>5: [ ] |
|---|---|---|---|

| Q8 | *How do you collect information about possible employers and their career options? | ☐ Job search engines<br>☐ Company career websites<br>☐ Job boards<br>☐ Personal network / referrals<br>☐ Recommendation of universities<br>Other [ ] |
|---|---|---|

| | **Q9** | |
|---|---|---|

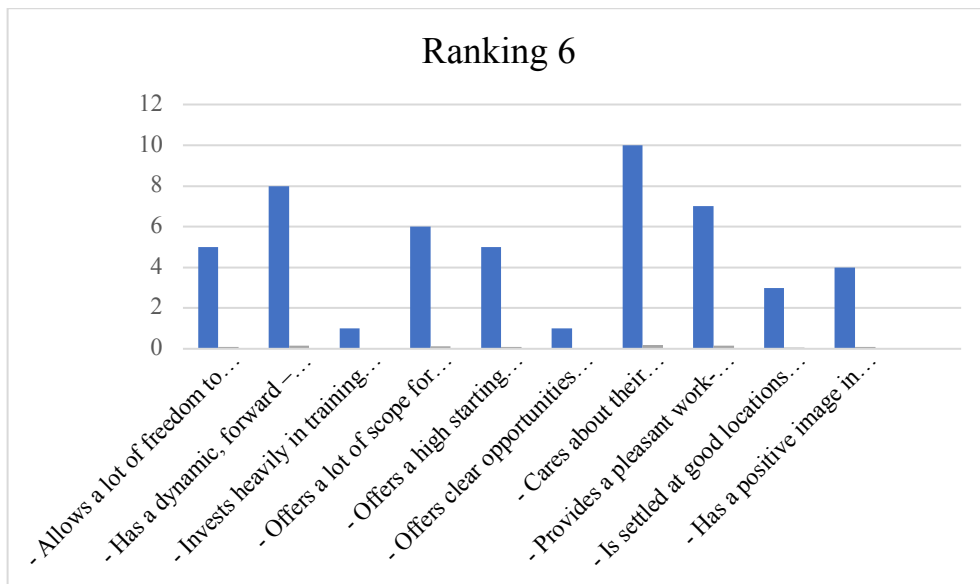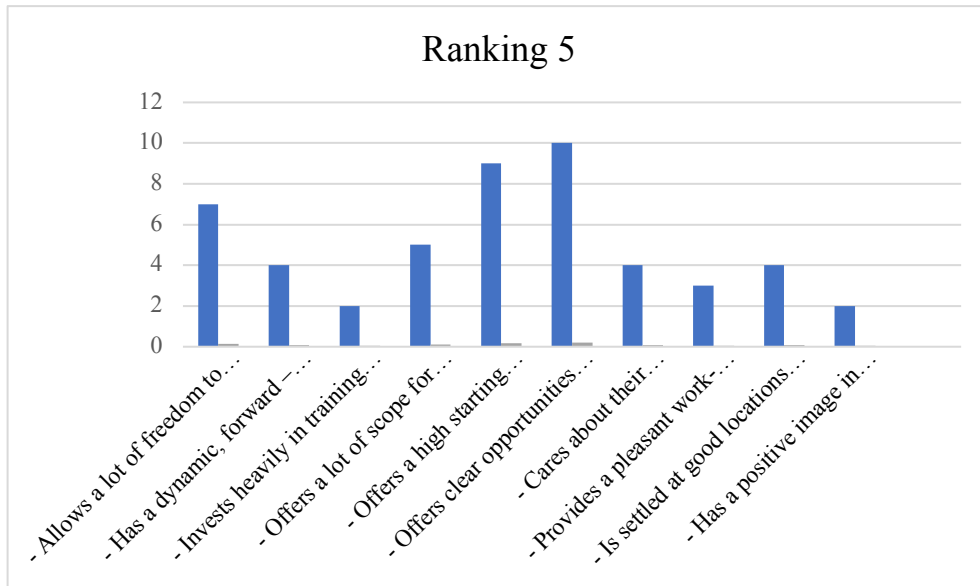| Q9 | *Please state in general what would be the chance to consider a dual master program in an organization in Germany? (where 1 means no chance at all) | No answer ⌄ |
|---|---|---|
| Q10 | *Where do you see the potential added value for you of a dual master program? (Chose one or more options) | ☐ Combination of theory and practice<br>☐ Cultural adoption within an organization<br>☐ Internal career perspectives<br>☐ Steady salary while studying<br>☐ Develop business skills<br>☐ Commitment with an organization<br>☐ Developing a network<br>☐ Partnerships with first-rate universities<br>Other [ ] |
| Q11 | *If that company you would love to work for would implement a dual master program, which dimensions would you distinguish as relevant? | ☐ mentorship<br>☐ competitive salary package<br>☐ talent development<br>☐ career perspectives<br>☐ work environment<br>☐ challenging program/ tasks<br>Other [ ] |

59

| Q12 | *Please tick which salary range you would expect to receive in Germany during a dual master program in an organization? | ☐ up to 1500€ month<br>☐ from 1501€ to 2000€ month<br>☐ from 2001€ to 2500€ month<br>☐ over 2500€ month |
|---|---|---|

**Q13**

| Q13 | *Now, going back to the questions, could you please state what was the company you were thinking when stating that was your preferred future employer at the beginning? If you do not want to give a response please enter no answer (N/A). | |
|---|---|---|

| Q14 | *Please think about the company you would love to work for in the future. How did you get knowledge about it? | ☐ From the software or products I have used<br>☐ From university fairs and workshops<br>☐ From presentations in class<br>☐ From my colleagues / friends<br>☐ From social media<br>☐ From the company's website<br>Other [        ] |
|---|---|---|

**Q15**

| Q15 | *Lastly, for sample description purposes, please answer follwing questions.  Have you been working in Germany already, such as in internships or in working student positions? | Please choose.. ⌄ |
|---|---|---|

| Q16 | *In which area are you currently studying or did you studied? | ☐ Business studies<br>☐ Technical studies |
|---|---|---|

| Q17 | *I am currently in my... | ☐ Bachelor´s degree<br>☐ Master´s degree |
|---|---|---|

| Q18 | *What is your age? | ☐ < 20 years<br>☐ 21 - 24 years<br>☐ 25 - 30 years<br>Other [        ] |
|---|---|---|

| Q19 | What is your Gender? | Please choose.. ⌄ |
|---|---|---|

☑ Finalize response submission

☐ Save for further completion by survey user

Submit

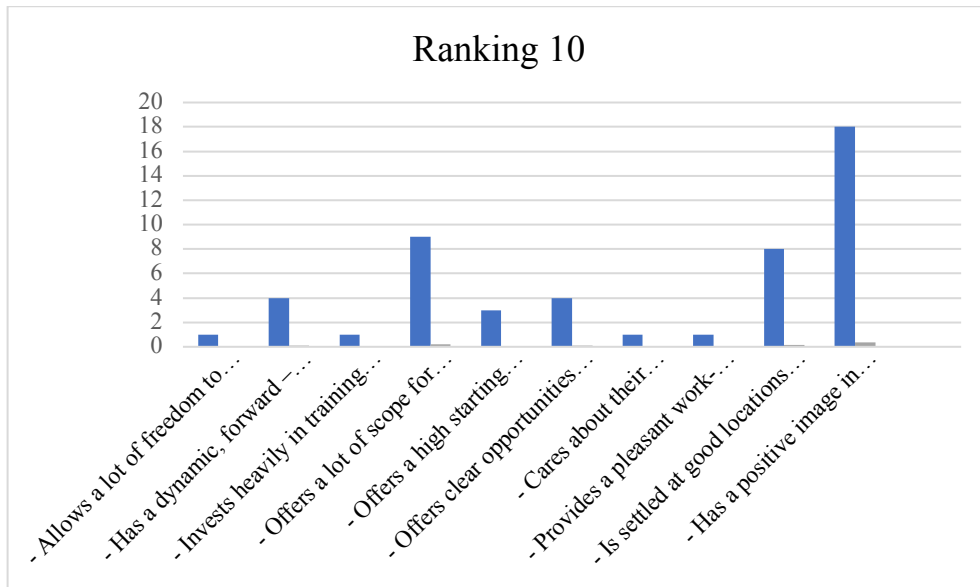**Appendix III**

**Question 1**



Ranking 1



Ranking 2

Ranking 3



Ranking 4

Ranking 5



Ranking 6

Ranking 7



Ranking 8

Ranking 9



Ranking 10

**Question 5**

## If you chose a company would you be expecting it to offer you a variety of career paths for students / graduates?

- Yes  - No

4%

96%

**Question 8**

## How do you collect information about possible employers and their career options?

| Category | Value |
|---|---|
| Recommendation of universities | 18 |
| Personal network / referrals | 34 |
| Job boards | 14 |
| Company career websites | 41 |
| Job search engines | 38 |

(Horizontal axis: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45)

**Question 9**

Please state in general what would be the chance to consider a dual master program in an organization in Germany?

| Value | Count |
|-------|-------|
| 1 (1) | 1 |
| 2 (2) | 4 |
| 3 (3) | 17 |
| 4 (4) | 17 |
| 5 (5) | 11 |

**Question 15**

No ; 4

Yes ; 46

**Question 16**



**Question 17**

**Question 18**



Age

| < 20 years | 21 - 24 years | 25 - 30 years | Other |
|:---:|:---:|:---:|:---:|
| 5 | 29 | 14 | 2 |

**Question 20**



What is your gender?
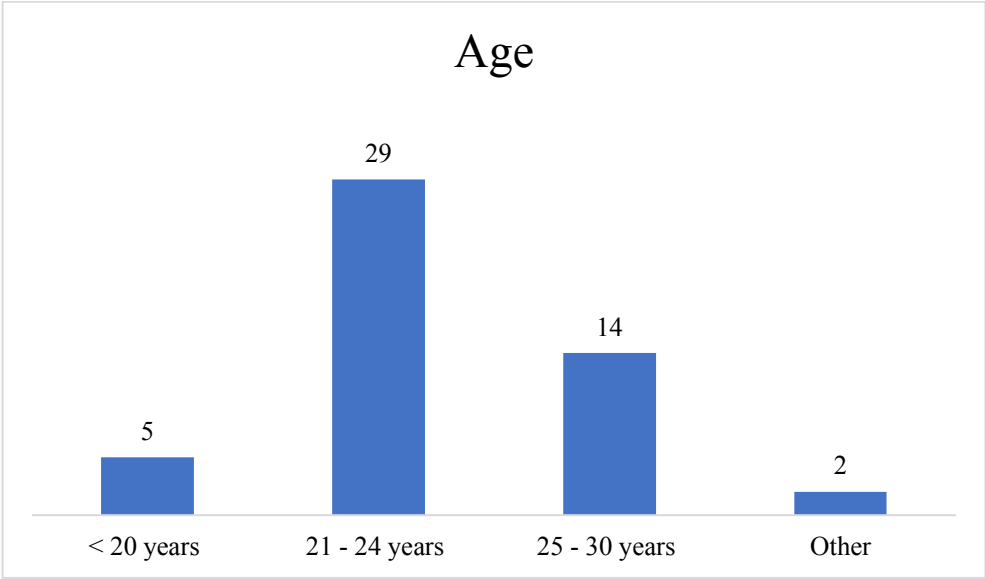
| Female (F) | Male (M) |
|:---:|:---:|
| 20 | 30 |

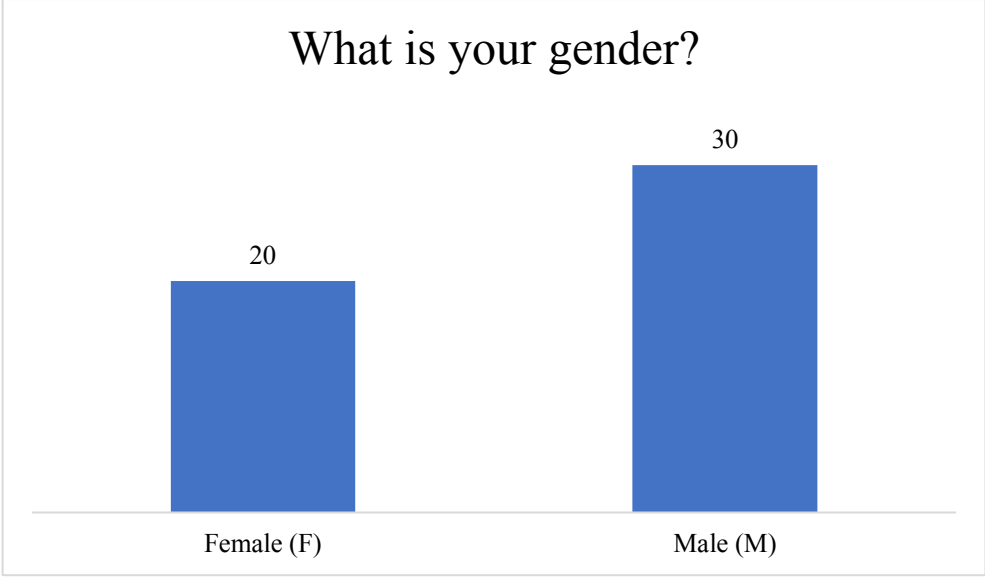**Blocking notice**

The following work contains confidential data and information of Dassault Systemes Deutschland GmbH. No part of this publication may be reproduced or transmitted in any form or by any means without the prior written permission of Dassault Systemes Deutschland GmbH.