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Abstract

We investigate how digital start-ups can successfully recruit senior IT professionals. This is a challenge, which many young companies face due to their liabilities of newness and smallness but also due to market characteristics such as talent scarcity. We highlight success factors throughout the whole process of senior IT recruiting in a start-up context using an in-depth single case study. Our results suggest that the use of state-of-the-art technology and free choice of hardware are very important recruiting factors. Using multiple platforms to recruit first highly qualified candidates attracts further good talents. Not only typical recruiting platforms are important, but our results show that the use of expert online forums by already employed IT staff can send important signals, strengthen ties with potential candidates, and enable referrals. The recruiting process itself must be fast and interviews should communicate the appraisal of seniority, learning opportunities and management accessibility.

Keywords: start-up, new venture, recruiting, IT professional, attraction.

1 Introduction

With the first insights of this research-in-progress paper we try to bring together the specifics of start-ups and the recruiting of IT workforce. In today's digitised economy, information technology plays a major role in a company's general performance, its competitive advantage, and operational excellence. IT human resource management (IT HRM) therefore builds the basis of a firm's success and is a major managerial concern in times of shortages of IT human capital (Ferratt, Agarwal, Brown and Moore, 2005; Agarwal and Sambamurthy, 2008). The current lack of IT professionals is expected to increase by 24% from 2016 to 2026 and thus much faster than the average of all other professions (U.S. Bureau of Labor, 2017). Especially for small firms and start-ups, recruiting is one of the biggest challenges. According to a recent survey, 35% of the participants claimed talent acquisition as the biggest challenge in software development within a start-up environment (Coding Sans Ltd., 2017). This is mainly driven by the common competitive disadvantages nascent ventures have such as a lack of public awareness, lower reputation and fewer financial resources (Ian O. Williamson, 2000; Ion O. Williamson, Cable and Aldrich, 2002; Tumasjan, Strobel and Welpe, 2011). To compete in the "war for talents", start-ups can highlight their unique job attributes such as flexible work schedules or flat hierarchies to distinguish themselves from large corporates (Tumasjan et al., 2011). Regardless of the size of the company, it is necessary to have a highly targeted recruiting process for positions that are difficult to fill, such as vacancies for IT professionals (Chapman et al., 2005). IT HRM practices can follow different strategies, leading to different IT turnover rates and departmental structures. IS Studies are mainly based on general human resource (HR) research, trying to detect, understand and highlight challenges in the IT context (Agarwal and Ferratt, 2001; Ferratt et al., 2005).

Regardless of the fact that small businesses represent a major sector of most nations' economies, they have received only scant attention in prior IS and HR literature which has focussed large companies (Ian O. Williamson, 2000; U.S. Small Business Administration, 2017). Even though not heavily covered in past literature, some authors have reviewed the challenges small firms and start-ups face in recruiting. In their studies, the impact of institutional and social factors (Ian O. Williamson, 2000), as well as key attributes distinguishing entrepreneurial firms from bigger companies, are considered. When focussing on the individual preferences of job applicants, past research mainly concentrated on students or recent graduates rather than seniors, even though the majority of positions that require a college degree are filled with experienced hires (Sara L. Rynes, Orlitzky and Bretz Jr., 1997). Using an in-depth case study and combining knowledge from past IS and HR research for large as well as small and medium-sized enterprises (SME) this study aims to shed light onto the recruiting challenges and possible solutions for digital start-ups when trying to recruit senior IT professionals. We thereby define senior IT professionals as being professionally trained or educated as well as experienced with more than two years in a position that involves the planning, design, development, deployment, and management of IT more than 50% of the working time (Brewster, Farndale and van Ommeren, 2000).

2 Theoretical Foundations

Recruiting can be defined as "the organization's collective efforts to identify, attract, and influence the job choices of competent applicants" (Ployhart, 2006) and has been studied in the fields of HR, psychology, as well as IS over the last decades. The authors of a meta-analysis (Chapman et al., 2005) examined 71 studies to estimate the effect size and path relationships between recruiting predictors and applicant attraction outcome variables. In their results, they conclude that the characteristics of job and organisation, the perception of the recruiting process (e.g. fairness), recruiter competencies, hiring expectancies and the perception of the person-organisation fit (PO fit) are the strongest predictors for underlying recruiting outcomes. Interestingly enough, recruiter demographics and functional occupation did not have a significant relationship. The recruiting process of IT professionals is different, as the labour market situation also differs from other professions. In the case of talent shortage, research agrees that focussing on individual needs is necessary for successful recruitment and hence for IT professionals (e.g., Agarwal and Ferratt, 2001). Furthermore, the skill set of IT professionals is twofold,

as both IT and business skills are often required, resulting in an even more demanding recruitment process. However, the shape of the two skill areas must further be distinguished between junior and senior hires. Employees focussing on the successful application of IT to business problems require a stronger set of business skills in comparison to workers focussing on the development and integration of the technology infrastructure (Agarwal and Ferratt, 1998). Supporting this, professionals in middle management positions are required to have more business skills than junior IT hires (Lee, 2001).

The rapidly changing technological environment is another reason why IT HRM and the recruitment of IT professionals are different. Maturation of technology may supersede an individual's specific skill set and change the demand-supply relation on the labour market quickly (Agarwal and Ferratt, 2002). Having an opportunity for constant skill development and working with leading-edge technologies is, therefore, more critical to IT professionals than for other employees (e.g., Tsai, Compeau and Haggerty, 2007). Due to the lack of literature focussing on the recruitment of IT professionals, we rely on IS research that focusses on IT turnover rates, to investigate influencing factors for the recruitment of IT professionals accordingly. Joseph et al. (2007) summarize individual-level turnover factors. Their results show that several factors influence turnover intention either directly or mediated through job satisfaction or perceived job alternatives. As we aim to gain insights into the recruiting success of IT ventures from turnover literature, we focus on the factors influencing turnover intention either directly or through job satisfaction, as those drivers can better be defined and used during the recruitment process. The results indicate that the following factors should be considered when hiring IT professionals: 1) Give possibilities of boundary spanning activities. 2) Avoid ambiguity by clearly defining an applicant's role. 3) Explicitly define goals to avoid role conflicts. 4) Offer a competitive salary. 5) Show and promote career development opportunities. 6) Offer development opportunities for further education to prevent obsolescence (Joseph et al., 2007).

3 Case Context and Method

We intend to understand how digital start-ups can recruit senior IT professionals in a unique context. We therefore selected a digital start-up according to the definition of Steininger (2019). Such start-ups have particularly high needs for IT professionals due to the ubiquitous nature of IT in their business model and organization. The selected case company develops and operates a digital trading platform and is located in Germany. It was established in 2016 and currently employs 35 full-time employees (FTE). To secure anonymity, the company will be called TradeCo. Among the IT professionals working for TradeCo, all but one joined the company with prior work experience. The company was founded by a team of industry experts who had worked in the energy trading business for many years. The first product developed is an independent trading platform, digitising the bilateral energy trading process. Given their successful recruitment of senior IT professionals and our access to management, investors, as well as IT professionals, the case represents a unique and exemplary opportunity for the objectives of our study. As this paper aims to understand how digital start-ups can recruit senior IT professionals, we needed to understand human thoughts, complex processes, and actions within an organisational context. We decided to conduct an interpretive single case study focusing on one company only as it allows us to understand the dynamics deeply within the complex context of the selected company (Orlikowski and Baroudi, 1991; Khazanchi and Munkvold, 2003). We combined multiple data collection methods (Eisenhardt, 1989). Semi-structured interviews are the primary source of information for our case study (Myers and Newman, 2007; Sarker, Xiao and Beaulieu, 2013). Further, we reviewed and discussed job advertisements of the company, which represent our secondary data source. M#1 to M#4 are interview partners who are or were responsible for recruitment and largely belong to TradeCo's management team. P#1 to P#10 are all interview partners representing IT professionals. In total, we conducted 16 interviews through which data saturation could be reached. To increase the credibility and auditability of our study, we recorded and transcribed our interviews right after execution (Sarker et al., 2013). When analysing our data, we followed the coding process of Strauss and Corbin (Strauss and Corbin, 1990) in order to derive theory. However, similarly to other case study research (e.g., Sarker, Sarker, Sahaym and Bjørn-Andersen, 2012), we pre-defined main areas (see Figure 1) we wanted to cover in our analysis but preserved our openness to field data and

willingness to modify theories as well as initial assumptions (Walsham, 1995). Based on our theoretical foundation and the chronological process of recruiting, our analysis is clustered into "Recruiting sources", "Recruiting process" and "Additional success factors". The latter includes other job-related success factors and complements the findings gained from the first two areas. As we focus on digital start-ups, we further highlight the most important technology-related success factors separately.

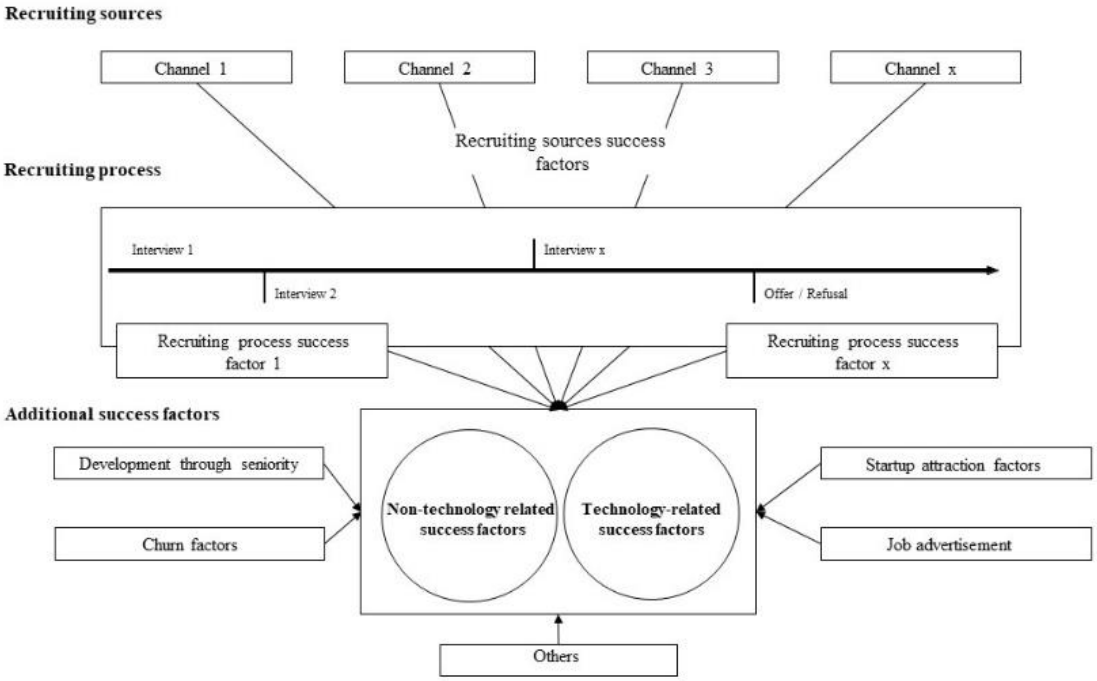

Figure 1. Analysis structure

4 First Insights

We focus our explored insights on some aspects that are particularly relevant for start-ups and the recruiting of IT professionals. We thereby try to add some in-depth and contextualized understanding of issues that have been proposed on a more general and abstract level.

4.1 Seniority Dilemma

Before outlining the success factors for our main categories, we want to point out some additional reasons for the difficulties with hiring senior IT professionals gained through our analysis. Calling it the "seniority dilemma", there are three main reasons for the difficulties found in hiring senior IT professionals which have not been mentioned in prior research. First, seniors are conscious of the fact that their skills are in great demand and what their value is. This makes it difficult to even gain their attention in a first step, due to the high number of other companies ensnaring one person. Another challenge when hiring seniors, especially from Germany, is the profitable opportunity of self-employment. The third main reason for the seniority dilemma is convenience. As described in our theoretical foundation, IT turnover is partly influenced by job satisfaction (Joseph et al., 2007). According to M#4, TradeCo's Chief Technology Officer (CTO), seniors in IT professions only become active in looking for job offers if they are stuck or seriously unhappy in their current position. Hence, most senior IT professionals are rather passively than actively searching and therefore much harder to attract or reach. By also looking for international talents, companies can widen their scope, tap into a greater pool of candidates and exploit the fact that Germany is seen as a desirable country to work in. At TradeCo, more than half of the senior IT professionals were acquired from foreign countries.

4.2 Technology as a Recruiting Factor

The major point in the job advertisement that made candidates apply was the technologies described. This was mentioned by candidates as well as the management side to be the most important factor and is a knock out criterion if it does not match a candidate's profile or interests as outlined by P#3: "*If the tech deck does not fit, then I probably would not work there.*" Another factor that attracted a lot of attention and which was somehow surprising for management is the free choice of hardware that is offered. Even if perceived as common in start-up environments, the freedom to choose their own equipment was important to many candidates as also described by P#2 stating the following: "*To choose [my] own hardware was…one of the most important things [for me] when starting to develop for a new company.*" When looking at the company's environment, the product and the industry TradeCo is working in, our findings conclude that they are of minor importance at first. In the case of TradeCo, this is also caused by the complexity of the product, a lack of knowledge about energy trading and the visibility of the product. From the job description and the company's website only, candidates were not able to deduce sufficient information about the product as "*the product is really specific to a very specific industry; to very specific people […] it is not like Facebook or Freeletics*" (P#2). However, market characteristics and the product itself did become meaningful at later stages during interviewing. Candidates realised that the product is unique and will have a major future market influence with potential for them to develop further and grow with the product and within the company. Furthermore, the fact that TradeCo operates in a B2B environment was important to some of the company's candidates, as it appears to be more professional than Business to Consumer (B2C) markets. Nevertheless, the technologies used for creating the product remained one of the most, if not the important success factors from the first sight of the job description onwards and was mentioned several times as being the crucial factor for applying and joining the company. P#6 for example mentioned that "*The first [that] I evaluate, is the tech deck.*" P#8 confirmed this by saying that "*For me, the technologies deck is the most important.*" Among the technologies used, especially Angular and Spring were named in this context. One developer [P#8] even mentioned the two frameworks to be the main reason for joining the company: "*[…] I came for Angular and Spring*".

4.3 Recruiting Sources

Networks. The closest and most heavily used source a start-up can use, especially in the early stages, relates to the personal network of founders, investors or employees (Ram, 1999). The personal network was also exploited in the case of TradeCo, enabling the company to already start its business with three senior developers. This initial setup helped TradeCo to attract other high potential profiles. One of the co-founding investors (M#2) stated: "*It is basically setting a generic code. If you have the first hires that are really […] good, then it becomes much easier to attract further good talent.*" This phenomenon is also known as "signalling" (Connelly, Certo, Ireland and Reutzel, 2011). With respect to recruiting, past research concludes that an applicant's impression of an organisation is based on signals received or information gathered through recruiting activities. Further, it is stated that applicants interpret information as well as recruiter characteristics or behaviour as signals for organisational characteristics (e.g., S.L. Rynes, 1991). An important factor to be mentioned in this context is the notice of TradeCo's first venture capital funding, which had a tremendous signalling effect according to the company's CTO (M#4). It helped the company to create its employer brand and gain publicity which was also confirmed by one of the first developers to join the company (P#2). With the first employees hired, the network a company can use does increase as well. At TradeCo, referral recruiting is strongly encouraged. Due to the direct and informal first contact, work-related uncertainties could be erased right from the beginning as confirmed by one of the developers acquired (P#8). The first contact, in this case, was made in a forum where developers casually discuss IT related topics, which leads to another important factor for successful recruiting – multiplatform visibility.

Recruiting Platforms. When talking about recruiting platforms, we received a clear vote for "LinkedIn", a social networking site for the business community. A remarkable finding that we made through our interviews is that LinkedIn was often used habitually, which means that if someone is

looking for a new job or business contact, LinkedIn is the first source reviewed before thinking about other options. Even though LinkedIn plays a predominant role as a recruiting platform, it has turned out to be indispensable to TradeCo to be visible on various platforms, forums and blogs. Especially because senior IT professionals are rarely actively searching, widespread presence is also vital to exploit unintentional attraction. Besides LinkedIn, TradeCo also published job postings on relevant community platforms such as "Stackoverflow", a platform that is "*pretty much used by every developer"* (M#4). Besides reach, multiplatform awareness also turned out to be important, as many potential hires did consult various sources before sending their application. However, not only the use of multiple platforms but also the fact that advertisements were shown frequently helped to increase awareness of a vacancy (Zajonc, 1968).

4.4 Recruiting Process

The recruiting process structure constantly changed and became continuously more professional since TradeCo started its operations. Regardless of the point of entry, two main factors influenced the candidate's decisions positively. The first thing to mention is speed, the simplicity of the process and instant feedback. Due to the current market situation, speed is one of the major points to sign potential hires and in the end, often even the deciding factor, as confirmed by P#2: "*Actually, one of the deciding factors, in the end, was that TradeCo really was the fastest company to respond and give me feedback before other companies.*" The process currently does not last longer than one week and offers are made within 24 hours after the last interview.

The second factor that was evaluated as very positive is the in-depth evaluation of the technical skills of potential candidates. This is done through a technical task that is presented and evaluated in an interactive session with the CTO and a peer. The interactive session is something which was reported as not being done at many other companies and it helped potential hires to understand the meaning of the task and its relation to the skills needed for the position. The importance of the technical interview and discussion was reflected as follows by one of TradeCo's developers (P#5): "*After the technical […] you know exactly, whether you want to work here or not.*" In the following, we will outline how the different job interview partners influence the decision of a potential hire to join the company.

CTO Influence. What we derived from our interviews is that the personality of the CTO and the perception of the team culture he implements is the most important factor for senior professionals, even before knowledge, reputation or past records. More than once, his personality became the factor tipping the scale in favour of TradeCo. The evaluation of personality reflects the biggest influencing factor for drawing conclusions about communication ability and what potential future teamwork would look like. Although Tumasjan et al. (2011) focussed on students and recent graduates, this finding coincides with their results, stating that team climate is the job-attribute ranked highest among IT professionals. Interestingly enough, the knowledge of the CTO, his public reputation or professional experience was said to be of minor importance to the candidates. However, the CTO (M#4) itself claims that "*I always have to have this kind of battle with the developers about technologies and what I know about that […] I often have to prove myself to them. For me, it was always important that I can speak with them […] the idea is always, to hire somebody who is better than you. If you have a discussion where you are always on the top [and] you always know everything, it does not make sense to hire.*" Two important findings can be derived from this quote. First, as already outlined above, it reflects the recognition shown for the candidates in the discussion. Secondly, the interviewees do challenge the knowledge of their potential line manager, even if unintentionally. Challenging knowledge, in this case, does not infer a test of whether they can learn from him technology-wise, but rather whether they speak the same language. Team climate is one of the most important factors for senior IT professionals when joining a company. At TradeCo, most of the time a peer attends the interview or the technical discussion. By having a potential future colleague attending, candidates can get an idea of how the work environment would be.

Investor Influence. Job interviews with management or investors helped in building trust in what the company does and to transport the vision behind it. The three major concepts discovered which build trust are recognition, funding security, and the business experience of the management team. The professional experience of the management team was said to be important to get a feeling that "they know what they are doing" (P#7) and that departments are complementary and function well together. However, former experience in successfully founding a company has not been mentioned as being considered in the decision. The mere fact that one of the investors is involved during the interviewing stage was also said to be unusual and influences the perception on the company culture, security and the recognition shown for the candidate. Interestingly enough, being aware of the demand for their skills and the ease of employment, funding security was one of the major points to be clarified during the interviewing process, possibly even more important in the case of relocation.

While the interviews with the talent manager, management, CTO and peer groups were perceived as very comfortable, the interviewees had a completely opposite impression of the investor's interview. A fact that may have been recognised unwittingly by the interviewees is the intended image of professionalism the company wants to transmit by challenging candidates within the process. As an investor has a more external role in the company, s/he is probably the best choice for being the one challenging the interviewees. Although this is sometimes not appreciated, candidates mostly feel some kind of self-affirmation after receiving feedback or the job offer.

4.5 Additional Success Factors

To attain additional success factors when acquiring senior IT professionals, we asked our interviewees about the general recruiting factors of start-ups, specific recruiting factors that made them join TradeCo, and the effects the job advertisement may have had. We further attained information regarding success factors by asking about the crucial factors for resigning from former jobs and how the importance of job-related factors had changed in comparison to when they were more junior.

Start-up Specific Recruiting Factors. For those who did not have prior start-up experience, a major reason for joining the company at an early stage was curiosity. One influencing factor for curiosity is the age of the candidate as reported by P#1: *"[When] you are 40 years old or 45, should you gamble on start-ups […] maybe not.*" From this quote, it can be derived that young senior IT professionals are rather more risk-taking then older ones. This was also confirmed by TradeCo's co-founding investor (M#2), stating that younger talents are less risk averse and that the company is predominately not looking for someone who wants security. However, our results gained in the prior chapter are contrary and show a great need for security, even for younger IT professionals. To reconcile these contrary results, we must be aware that even in the case of good funding, start-ups are still at risk of not being successful. Including both impressions, we need to clarify that candidates being positively influenced by funding security are still taking essential risks when joining a start-up company. Another four major environmental categories are the lack of bureaucracy, with their perceived higher efficiency, agility and flexibility, the familiar atmosphere due to size and headcount, perceived relatedness to the company, and the work impact one can make. These start-up characteristics mainly correspond to the ones identified by Tumasjan et al. (2011).

Churn Factors. The main reasons for our interviewees to resign their prior jobs can be grouped into bureaucratic overhead, appraisal received, development and team complementarity. Bureaucratic overhead also influences perceived appraisal, which in turn is partly driven by the impact ones' work has on the company. TradeCo's UX/UI designer (P#9) expressed this as follows: "*Although I had a really senior role before, in fact, my impact [on] the whole process was close to zero or if it was 10%, it took me so much energy to convince twelve people in a row*". Missing appraisal of seniority is not exclusively related to supervisors or the company structure. The missing adoption of advice from peers also leads to dissatisfaction. In the category of development, we included financial improvement as well as personal development. Although financials were not mentioned as a reason for churn by any of our interviewees, salary and perks were mentioned as important when evaluating new opportunities. Personal development is mainly driven by education, which in the case of IT professionals correlates

with the use of new technologies. Not surprisingly, outdated tech and missing technological innovation were mentioned as the most important factors with respect to reasons for churn. Our findings support the results regarding the importance of education and continuous learning gained by various researchers focussing on recruiting factors (e.g., Tsai et al., 2007) or drivers for resignation (e.g., Joseph et al., 2007). Mapped under personal development, tiredness provoked by recurring tasks and missing challenges was also noted in this context and can be seen as an additional lack of education. Further, education can also be reached through learning from others, which again shows the importance of team skills and is another factor for resigning. The assumption made in our theoretical foundation that resigning factors can be used as recruiting factors accordingly is confirmed through our interviews.

Other Recruiting Factors. With respect to salary, our findings suggest that despite the importance of the other factors mentioned, it can be the cause of a major shortage for many digital start-ups. Even though our interviewees never cited salary as the most important factor for them and even though they sometimes receive less than before, though it is compensated by greater work impact, freedom etc., the salary must be competitive to convince them (Joseph et al., 2007). The convincing of candidates by granting equity shares, an option that start-ups could exploit (e.g., Ian O. Williamson, 2000), was said to be ineffective with regard to senior IT professionals according to TradeCo's CTO (M#4). The firm tried to convince potential candidates offering this kind of financial compensation at first but this did not make a great impression on the candidates. However, company shares become more interesting for the employees after being with the company for a while. Other perks such as contribution to gym membership or free fruit and snacks are something to be expected according to P#6.

5 Implications and Concluding Remarks

In our ongoing research project we try to develop an understanding of the start-up specific challenges when recruiting IT professionals and how to overcome them. In this research-in-progress paper we have outlined the contextualized results of a first exploratory case where we conducted 16 interviews with management and senior IT professionals in a digital start-up which managed to hire various highly qualified IT professionals within a short time. We focused the presentation of these first results on some aspects that are particularly relevant for start-ups and the recruiting of IT professionals. We thereby try to add some in-depth and contextualized understanding of issues that have been proposed on a more general and abstract levels. Our results suggest that the use of state-of-the-art technology and free choice of hardware are very important recruiting factors. Using multiple platforms to recruit first highly qualified candidates attracts further good talents. Not only typical recruiting platforms are important, but our results show that the use of expert online forums by already employed IT staff can send important signals, strengthen ties with potential candidates, and enable referrals. The recruiting process itself must be fast and interviews should communicate the appraisal of seniority, learning opportunities and management accessibility. Particularly the position of the CTO, his/her accessibility, personality, and mindset probably play the most significant role in interviewing as s/he will be a candidate's potential line manager and responsible for the development of the IT department. The most important job-related factors we identified are that the firm operates with current technologies and is open to new trends, allowing its IT professionals to improve continuously and maintain their skill set.

These findings are only a first step of our project, in which we will also look into onboarding processes of IT professionals in start-ups. We are hopeful that our results will provide founders, investor and advisors with valuable insights. As a start-up, firms should use their differences and advantages in comparison to larger companies (Ion O. Williamson et al., 2002), while ensuring professional processes. Generally speaking, practitioners must understand that senior IT professionals need to be handled differently from juniors or applicants from other fields in order to be successful.

References

Agarwal, R. and T. W. Ferratt (1998). "Recruiting, Retaining, and Developing IT Professionals: An Empirically Derived Taxonomy of Human Resource Practices." In: *Proceedings of the 1998 ACM SIGCPR Conference on Computer Personnel Research*. New York, USA: ACM, pp. 292–302.

Agarwal, R. and T. W. Ferratt (2001). "Crafting an HR Strategy to Meet the Need for IT Workers." *Communications of the ACM* 44 (7), 58–64.

Agarwal, R. and T. W. Ferratt (2002). "Enduring Practices for managing IT professionals." *Communications of the ACM* 45 (9), 73–79.

Agarwal, R. and V. Sambamurthy (2008). "Principles and Models for Organizing the IT Function." *MIS Quarterly Executive* 1 (1), 1–16.

Brewster, C., E. Farndale and J. van Ommeren (2000). *HR Competencies and Professional Standards*. Cranfield University, UK.

Chapman, D., K. Uggerslev, S. A Carroll, K. A Piasentin and D. Jones (2005). "Applicant Attraction to Organizations and Job Choice: A Meta-Analytic Review of the Correlates of Recruiting Outcomes." *Journal of Applied Psychology* 90 (5), 928–944.

Coding Sans Ltd. (2017). *State of Software Development in 2017 - Startup edition*. URL: https://codingsans.com/state-of-software-development-startups-2017 (visited on 11/15/2017).

Connelly, B. L., S. T. Certo, R. D. Ireland and C. R. Reutzel (2011). "Signaling Theory: A Review and Assessment." *Journal of Management* 37 (1), 39–67.

Eisenhardt, K. M. (1989). "Building Theories from Case Study Research." *The Academy of Management Review* 14 (4), 532–550.

Ferratt, T. W., R. Agarwal, C. V. Brown and J. E. Moore (2005). "IT Human Resource Management Configurations and IT Turnover: Theoretical Synthesis and Empirical Analysis." *Information Systems Research* 16 (3), 237–255.

Joseph, D., K.-Y. Ng, C. Koh and S. Ang (2007). "Turnover of Information Technology Professionals: A Narrative Review, Meta-Analytic Structural Equation Modeling, and Model Development." *MIS Quarterly* 31 (3), 547–577.

Khazanchi, D. and B. E. Munkvold (2003). "On the rhetoric and relevance of IS research paradigms: a conceptual framework and some propositions." In: *Proceedings of the 36th Annual Hawaii International Conference on System Sciences*. Big Island, USA.

Lee, P. (2001). "The Impact of Role Variables on Turnover Intentions of Information Technology Professionals: An Examination of Moderating Effects." In: *Proceedings of the Seventh Americas Conference on Information Systems*. Boston, USA, pp. 1483–1489.

Myers, M. D. and M. Newman (2007). "The qualitative interview in IS research: Examining the craft." *Information and Organization* 17 (1), 2–26.

Orlikowski, W. J. and J. J. Baroudi (1991). "Studying Information Technology in Organizations: Research Approaches and Assumptions." *Information Systems Research* 2 (1), 1–28.

Ployhart, R. E. (2006). "Staffing in the 21st Century: New Challenges and Strategic Opportunities." *Journal of Management* 32 (6), 868–897.

Ram, M. (1999). "Managing Autonomy: Employment Relations in Small Professional Service Firms." *International Small Business Journal* 17 (2), 13–30.

Rynes, S. L., M. O. Orlitzky and R. D. Bretz Jr. (1997). "Experienced Hiring Versus College Recruiting: Practices and Emerging Trends." *Personnel Psychology* 50 (2), 309–339.

Rynes, S. L. (1991). "Recruitment, job choice, and post-hire consequences." In: *Handbook of Industrial and Organizational Psychology*. Palo Alto, USA: Consulting Psychologists Press, 2nd Edition, pp. 399–444.

Sarker, S., S. Sarker, A. Sahaym and N. Bjørn-Andersen (2012). "Exploring Value Cocreation in Relationships Between an ERP Vendor and its Partners: A Revelatory Case Study." *MIS Quarterly* 36 (1), 317–338.

Sarker, S., X. Xiao and T. Beaulieu (2013). "Qualitative Studies in Information Systems: A Critical Review and Some Guiding Principles." *MIS Quarterly* 37 (4), iii–xviii.

Steininger, D. M. (2019). "Linking Information Systems and Entrepreneurship: A Review and Agenda for IT-Associated and Digital Entrepreneurship Research." *Information Systems Journal* 29 (2), 363–407.

Strauss, A. and J. Corbin (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Thousand Oaks, USA: SAGE Publications.

Tsai, H.-Y., D. Compeau and N. Haggerty (2007). "Of races to run and battles to be won: Technical skill updating, stress, and coping of IT professionals." *Human Resource Management* 46 (3), 395–409.

Tumasjan, A., M. Strobel and I. M. Welpe (2011). "Employer brand building for start-ups: which job attributes do employees value most?" *Zeitschrift Für Betriebswirtschaft* 81 (6), 111–136.

U.S. Bureau of Labor (2017). *Software Developers*. URL: https://www.bls.gov/ooh/computer-and-information-technology/software-developers.htm#tab-6 (visited on 11/05/2017).

U.S. Small Business Administration (2017). *Frequently Asked Questions About Small Business*. URL: https://www.sba.gov/sites/default/files/advocacy/SB-FAQ-2017-WEB.pdf (visited on 11/14/2017).

Walsham, G. (1995). "Interpretive case studies in IS research: nature and method." *European Journal of Information Systems* 4 (2), 74–81.

Williamson, I. O. (2000). "Employer Legitimacy and Recruitment Success in Small Businesses." *Entrepreneurship: Theory & Practice* 25 (1), 27–42.

Williamson, I. O., D. M. Cable and H. E. Aldrich (2002). "Smaller but not necessarily weaker: How small businesses can overcome barriers to recruitment." In: J. A. Katz & T. M. Welbourne, *Managing People in Entrepreneurial Organizations*. Bingley, UK: Emerald Group Publishing Limited, pp. 83–106.

Zajonc, R. B. (1968). "Attitudinal effects of mere exposure." *Journal of Personality and Social Psychology* 9 (2), 1–27.