Tech Scale-Ups in the Amsterdam City Region

Dr. Willem van Winden
Dr. Burcu Kör
Darren Sierhuis, MSc
Paul Grijsbach, MSc
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Chapter 1: Introduction

1.1 Introduction

The Amsterdam tech sector has undergone a stormy development in the last decade. The number of start-ups has been high for years, new ones are being added quickly. A small percentage of them are growing rapidly. Taken together, these fast growers (scale-ups) ensure a strong growth of employment and demand for space in the city. If this growth continues in the coming years it raises the challenge how spatial-economic strategies can help to accommodate growth in Amsterdam and the region.

A lot of quantitative information is already available about the start-up ecosystem. It has been properly mapped where start-ups are located, how much employment they provide, where the co-working spaces and incubators are located. The most important growers are also in the picture.

We know much less about the way in which fast growers facilitate their expansion. Which type of location environments do they prefer, and why; what bottlenecks do they experience with expansion; does the company opt for concentration at one location, or rather for multiple locations, and what is the choice based on; what role do coworking spaces play as flexible capacity for these types of companies? We focus specifically on four main questions:

- To what extent is the Amsterdam region attractive for tech scale-ups
- What spatial patterns do we observe regarding their location?
- How do Amsterdam based tech scale-up companies grow, and how do these growth dynamics affect their spatial needs?
- Which factors affect their locational decision making during the process of growth?

Finding the answers to these types of questions is relevant from a policy perspective: if Amsterdam wants to remain successful as a tech hub, the city and region will have to be able to properly accommodate this growth. And that is only possible if we understand how companies grow and what barriers they encounter. It is also relevant for spatial planning issues. Plenty of construction is taking place in the city and the region - in particular housing - but is sufficient account taken of the growth of the tech sector? In other words: to what extent is the potential of the Amsterdam tech sector taken into account in the elaboration of spatial assignments in various places in the city and region? And how could it be better?

1.2 Method

To answer the questions, we carried out a literature study, a quantitative analysis of available data, and conducted semi-structured interviews with a number of fast-growing tech firms. In the literature study, we looked for earlier research in this field, and also for relevant concepts to analyze location patterns. The quantitative analysis is based on data we obtained from the Dealroom.co database, that contains a rich set of data on start-up and scale-ups in the Netherlands. The main part of the
research concerned the interviews. Together with Startup Amsterdam we identified the interview partners: CEOs of scale-ups, and experts. We prepared a list of topics that should be addressed in the interviews, conducted face-to-face interviews, and did a content analysis to recognize patterns.

1.3 Organisation of the report
This report is organised as follows. In Chapter 2, we analyse the current academic and grey literature that can inform us to answer the research questions. Chapter 3 contains a quantitative analysis, showing and mapping the spatial clustering of various types of tech companies cluster in the Amsterdam region. In Chapter 4, based on our interviews, we analyse the growth dynamics, location preferences and geographical dynamics of tech scale-ups. Also, we identify which push and pull factors affect Amsterdam based tech scale-up companies in their locational decision making, on the neighbourhood and building level. Chapter 5 finally contains conclusions and policy recommendations.

1.4 Definitions: what is a scaleup?
In this study, we are interested in the development of fast-growing companies, or scale-ups. This raises a number of definition issues, because the adjective “fast growing” or the noun “scale-up” are ambiguous in terms of the growth period that is considered (1 year, 5 years, 6 months?), the variables considered (turnover, employees, profit, market value, market share, investments), the geographical comparative scale (regional, national, international), or the sectoral delimitation (all companies, or only tech/digital). A variety of definitions and approaches can be found in the academic and grey literature.

The Erasmus Centre for Entrepreneurship defines a scale-up as a company with at least 10 FTE (Full-Time Equivalent) and / or at least 5 million euros in turnover at the start of the measurement period; also, they must have achieved an average growth of at least 20% in FTE and / or revenue in three consecutive years. The Dutch financial newspaper Financieel Dagblad produces an annual ranking of “Gazelle companies”, based on turnover growth (at least 20% averaged over the last 3 years), employee growth and profit margin. A Gazelle must have a minimum turnover of €250.000 and be profitable in the ranking year.

In recent years, the use of the term “scale-up” has proliferated, mostly to identify technology companies that somehow passed the start-up phase and started to achieve substantial growth. The EU-funded startup Europe Partnership¹ defines a scaleup as “a development-stage business, specific to high-technology markets, that is looking to grow in terms of market access, revenues, and number of employees, adding value by identifying and realizing win-win opportunities for collaboration with established companies.” In their approach, the scale-up is in an intermediate position between a startup and a “scaler” that has already reached scale (see figure 1.1). A startup becomes a scaleup after it has validated its business model, solved the startup challenges, and is prepared for exponential growth.

¹ https://startupeuropepartnership.eu/scaleups-when-does-a-startup-turn-into-a-scaleup/
Consultancy Mind the Bridge\(^2\) categorizes companies in terms of capital raised, distinguishing 4 types: Startups (<$1M funding), Scaleups (>-$1M funding), Scalers (>-$100M funding) and Super Scalers (>-$1B funding). In total, they count 184 scalers and 11 superscalers in Europe for 2018. Mind the Bridge defines “Tech Companies” as companies operating in Tech & Digital industries, founded after 2000, with at least one funding event since 2010. It excludes biotech, life sciences and pharma, and semiconductors in the scope of its research.

For the purpose of our study, we adhere to their approach, but add a dimension of employment growth. We define scale-ups as follows:

- Tech companies, operating in Tech & Digital industries that are capital extensive in the sense that they do not rely on manufacturing facilities, specific labs or equipment, or other physical assets. Hence we exclude biotech, life sciences and pharma, and semiconductors from the scope of this research.
- They are founded after the year 2000
- They received funding after 2010.
- Total funding ranges between €1m and €100m
- They have at least 10 employees
- They experienced an annual employment growth of 20% per year between 2015 and 2018.

\(^2\) https://mindthebridge.com/
Chapter 2: Literature review

2.1 Introduction
What spatial needs scale-ups have to facilitate their expansion is hard to pinpoint. This literature review will therefore provide an overview of the literature that engages with the spatial organisation of firms and tech scale-ups in particular. To further develop an understanding of the spatial diffusion of tech scale-ups, we discuss 1) how scale-up firms grow and how locational decisions are made during this process, and 2) what mechanisms lie behind the general spatial diffusion of tech-scale up firms. 3) Then we give more depth to how location patterns are influenced by more specific mechanisms on a city-region and neighbourhood scale. 4) We also investigate what potential consequences these location patterns may have for the general urban fabric. Finally, 5) we discuss more qualitative mechanisms behind the locational behaviour of firms in focusing specifically on the role of place narratives in their locational decision making process.

2.2 Scale-ups Within the Ecosystem
With a steady growth of tech start- and scale-ups, wider networks of young tech companies emerge by both expansion, imitation and fragmentation of their production processes and products (Scott, 2006). Policy makers and the scientific community more recently see fostering such networks as an important asset in stimulating entrepreneurial activity within the ecosystem (Brown & Mason, 2016; Spigel, 2015; Stam & Spigel, 2016). The literature on entrepreneurial ecosystems suggests scale-ups play an important part in such ecosystems (Brown & Mason, 2019), as mentors and role models, as capital attractors, and as a source of spill-overs.

First, they function as mentors because they can identify and be examples of achieving successful company growth (Ibid., Malecki, 2018). Such mentorship and success stories are seen as crucial in shaping the cultural and social conditions for successful entrepreneurial activity, as they incentivise risk taking and broaden support networks of investors, policy makes, and so forth (Spigel, 2015). Second, they can attract capital because they are more established and therefore more interesting for investors than very young companies (Shane, 2009). Third, it could be argued they create more jobs because of their expansion and therefore attract more human capital than start-ups, in both local and international knowledge workers (Stam 2007; Shane, 2009; Zajko, 2017; OECD, 2018). In doing so, successful scale-ups play a big part in the development of local knowledge economies. On top of that, human capital spill-overs between scale-ups, start-ups and corporates as well as firm spin-offs are important for the creation of new knowledge and stimulate overall successful entrepreneurial activity and new firm formation (Qian & Acs, 2013).

2.3 Mechanisms Behind Locational Decision Making
Stam (2007) analyses how firms make their locational choices over their life course, suggesting that different growth phases can be linked to locational decisions. He discerns two factors: the willingness and the ability of a firm to relocate (Stam, 2007: p. 42). The willingness of a firm to relocate may simply derive from a necessity to do so. The company may outgrow its’ previous location or the current office space may become too expensive, for instance. Furthermore, the
willingness of a firm to relocate might derive from a recognition of the opportunities another location provides. Locating closer to a firm’s relevant capital or labour market might help the firm to grow, for example. The ability of a firm to relocate then depends on the financial and human resources the firm holds and on its’ organizational capabilities. The mix of willingness and ability depends on the growth rate, size and age of the firm.

During early growth phases of a firm, locational decisions are heavily dependent on the preferences of the firm’s founders (Stam, 2007; Koster & Pellenbarg, 2012). They are usually unilocalational, and do not rapidly expand because they lack the organisational and financial resources (Stam, 2007). Relocating has no priority over survival, and if young firms do relocate, they most probably do so within their region of origin. Koster en Pellenbarg (2012) show similar findings and confirm that founders of start-ups usually begin their business close to home and their personal networks because of convenience and because of the affinity they feel with their residential region. Contrastingly, Backman and Karlsson (2017) argue professional networks are more important than personal networks in determining a first business location or relocation for an entrepreneur, suggesting commuting or moving houses to start or expand a business are often viable options.

From there, the prospective size of a firm becomes an important factor in the locational decision making process. When a firm actually grows, its’ capabilities and necessity to accumulate surplus capital also grow, which in turn affects its’ ability and willingness to relocate (Stam, 2007). Internal and external selection mechanisms affect the choices to either relocate or open up new branches within or outside of the region of origin in order to expand. Internal selection mechanisms comprise sunk costs (e.g. in workers that will not move with the firm when relocating) that make relocating undesirable, distances to social networks or a dependence on resources found in a new or current location. External selection mechanism are largely market driven, and suggest that proximity to the capital, labour and product markets are important at different points in a firm’s life course, with an emphasis on the importance of being close to the product market throughout most of a firms’ life course.

Thus far, a theory emerges that helps in separating variable mechanisms that influence the spatial organisation of a firm throughout its life course. Moreover, it also becomes clear that firms locational behaviour depends on an interplay between the resources a location can provide and what resources the firm needs during certain phases of their life course.

2.4 Growth Phases
To understand how locational behaviour is affected by a scale-ups’ growth patterns, it is useful to analytically separate certain growth phases a young firm goes through, using the above-mentioned mechanisms to analyse their locational behaviour. Stam (2007) proposes the early life course of a firm can be split up into five growth phases: The start-up phase, the initial survival phase, the early growth phase, the accumulation phase and the growth syndrome phase.

- In the **start-up phase**, an entrepreneur recognises an opportunity and in many cases establishes the company as a legal entity. Start-ups are usually uni-locational and their locational decisions are driven by the founders’ preferences and closeness to the capital market.
Once the firm has developed a viable product the **initial survival phase** starts. The firm starts to generate its own resources and closeness to the product market and therefore potential customers becomes a mechanism for locational decision making. The firm is still small, so the founder's preferences and the fact that the company has to gain legitimacy by opening up an office if it has not done so far play part.

Only few firms move on to the **early growth phase**. In this phase, firms hire new staff rapidly, thus closeness to the labour market becomes increasingly important. On the one hand, more human resources increase the firm's capacities to recognise new opportunities and thus to relocate or open up a new branch. On the other hand, a rapid growth in size leaves the firm with sunk costs, as workers might not be willing to move with the firm in this stage. Yet, if the firm does not relocate or open up a new branch it will be left with a lack of space precisely because of its’ expansion. According to Stam (2007), most locational dynamics exist during this phase, because of the interplay between external and internal mechanisms and the firm's growth.

Finally, the firm reaches the **accumulation phase** in which it gains surplus capital that can be reinvested. Here firms usually open up new branches next to their headquarters, because sunk costs of the investment in human capital still prevent the firm from relocating, yet hiring on different locations poses less of a problem because the firm has enough capital to do so comfortably.

The 5th **growth syndrome phase** is not necessarily part of this chronology, but indicates a phase in which a firm's growth stagnates or a firm shrinks in size. During this phase, the firm will close branches or will need less office space and will thus relocate out of a problematic search for a smaller office.

For our purposes – understanding growth and locational patterns of tech scaleups - Stam’s theory falls short on several points. First, in many cases, the growth of tech start- and scale-ups is decoupled from gaining revenue or profit and more based on expectations, and the urge to gain market share quickly. Venture capital enables "promising" startups to expand at a pace far beyond what would be possible when they would only use the returns on their own products for expansion (Duruflé et. al, 2017). Second, it does not take the digitalisation of the products young tech firms offer in consideration, which can be sold digitally on a wide variety of markets and could be made at any location. Taking both points into consideration, proximity to the product market is less important as an external selection mechanism for scale-up firms than Stam (2007) argues it is for the early phases of a firm, whereas proximity to venture capital and skilled labour gain weight.

### 2.4.1 Growth Phases and Investment Rounds
An updated theory that analytically separates different growth phases of young firms in the digital and tech sectors is more or less absent from the literature. Duruflé et. al (2016) propose a typology of the growth phases of start- and scale-ups that specifically stems from the investment rounds that support or drive the expansion of young tech firms. Such investment rounds are typically divided into separate rounds. We draw on CrunchBase's[^3] detailed typology (see table 2.1)

[^3]: Crunchbase is a database that keeps track of start and scale ups. See: [https://support.crunchbase.com/hc/en-us/articles/115010458467-Glossary-of-Funding-Types](https://support.crunchbase.com/hc/en-us/articles/115010458467-Glossary-of-Funding-Types)
Table 2.1 – Funding rounds, recipient firm descriptions and funding size

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<th>Funding round</th>
<th>Description of the recipient firm</th>
<th>Funding size</th>
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<tr>
<td>Angel</td>
<td>Pre-institutionalised companies with a promising project</td>
<td>Below $150k</td>
</tr>
<tr>
<td>Seed</td>
<td>Institutionalised companies that have a fully developed idea for a product, but are figuring out their business model</td>
<td>$10K - $2 million</td>
</tr>
<tr>
<td>Series A</td>
<td>Companies that have a working business model to generate revenue and need investments to expand</td>
<td>$1 - $30 million</td>
</tr>
<tr>
<td>Series B</td>
<td>Companies that found their product/market fit and look to expand fast to scale business</td>
<td>$1 - $30 million</td>
</tr>
<tr>
<td>Series C</td>
<td>Companies that proved to have a scalable business model and are ready to enter new markets, acquire new companies and develop new products</td>
<td>$10+ million</td>
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</table>

For our purpose, the first three rounds are most important to discuss, as most rapid growth happens there:

- In its first round of investment, also called the **seeding round**, upon recognition of a viable product it receives only a small investment from an angel investor to formulate a business strategy and reach the market. In line with Stam’s (2007) argument, location is less important than survival. This is the stage where many start-ups consist of only the founders.

- From there, a second, or **series A**, funding round provides a start-up the means to figure out how to monetise the business with a scalable business model. Such funding is usually provided by more traditional VCs or through crowdfunding among enthusiastic early users of the product (Duruflé et. al, 2017). The business expands during this phase and goes from running on relatively low amounts of employees to developing a more systematic approach to simplify tasks, which leaves the work to be done less specialised and more fragmented. This means that a firm incrementally needs more space during this phase and the prospect of growth may prompt the firm to look for a place where it can expand quickly in the near future (ibid.). In this connection, Geissinger et. al (2019) find that it is important for young firms to be close to allies such like other young companies and governmental support structures. Therefore in larger cities at this point, because they form the support structures and network to help the start-up figure out their workflows and scalable business model (Geissinger et. al 2019).

- After the business proves to be monetizable, a larger **series B** investment gives the start-up the opportunity to scale up quickly. According to Duruflé et. al (2017) companies can be considered scale-ups from their series B investment round onwards. Usually, after this third funding round, the amount of users and therefore employees grow and workflows become even more fragmented (Duruflé et. al, 2017). An increasing division of labour to create more efficient workflows also prompts a company to hire more employees. This is where the company expands its systems and rapidly grows in size, thus it drastically needs more space...
and human resources. In line with Stam's (2007) argument, closeness to the labour market becomes increasingly important.

In and after the series B stage, the firm has to choose between going public, being taken over by a larger company or to grow by attracting new investors. Most founders opt to look for the latter, because this leaves them at the steering wheel of their own company. As investors demand returns on their investments, scale-ups are forced to expand quickly. The investment-driven growth stage is an addition to Stam's (2007) growth phases, in implying that location decisions are increasingly driven by investors' demands for rapid growth.

2.5 Which Location? Spatial Clustering, Marshallian Versus Jacobian Mechanisms

Although discussing the motives for (re)location choices throughout the growth phases of a firm is useful, the specificities of where and why tech scale-ups opt for a certain location remain unclear. Therefore, a more in-depth discussion on specific location patterns that tech scale-ups show is needed. Looking more closely at the general geographic diffusion of firms is a good starting point in uncovering more specific locational behaviour of firms.

Two main theoretical standpoints emerge from this literature. Both of these standpoints argue that firms cluster, yet both argue they do so for different reasons. On the one hand, the Marshallian view (Marshall, 1890; as formalised by Glaeser et al, 1992) hypothesises industry specialisation within a region is the main driver for the clustering of firms. In this view, it is argued that the specialisation within a region poses an incentive for firms to locate there because they can lower transaction and transportation costs, could benefit from economies of scale and intra-industry knowledge spill-overs by conversation and imitation (Beaudry & Schiffaurova, 2009; Spigel & Harrison, 2018). On the other hand, the Jacobian view (Jacobs, 1969) argues that these knowledge spill-overs are most valuable when they happen between industries, furthermore considering inter-industry knowledge spill-overs as crucial for innovation. This view highlights the importance of density and diversity because they offer opportunities to learn from intra-industrial tacit knowledge on a face-to-face basis (Beaudry & Schiffaurova, 2009). Thus, according to Jacobs, the city is the locus of entrepreneurial activity because it is densely populated and diverse by nature.

As Adler et al (2019) state, these views are often placed opposite to each other as explaining mechanisms for firm clustering. According to them, however, they do not mutually exclude and work at different scales in practice, especially when looking at the location patterns of tech start-ups. They demonstrate that the Jacobian view works on a macro-geographical level that operates at the level of the city-region (Adler et al, 2019: p. 122), meaning that cities that want to attract tech companies should indeed possess a diverse set of attributes ranging from the presence of knowledge institutes, to the presence of a diverse workforce, to access to a well arranged infrastructure (ibid.: p. 128). At the micro-geographical perspective, which operates on a neighbourhood level (Ibid.: p. 122), they find that firms within the tech start-up industry cluster because it poses opportunities for face-to-face transfers of tacit intra-industry knowledge, talent and ideas (ibid.: p. 128). They accordingly conclude that:

4 see Adler et al, 2019 for a broad overview of the literature concerning this topic
“It can ultimately be said that the macro-geographic level clustering of tech start-ups reflects Jacobs-like mechanisms such as the benefits of scale and diversity, while micro-geographic clustering reflects Marshallian mechanisms, notably the benefits of specialized knowledge, labor, and inputs.” (Adler et al, 2019: p. 129)

Thus, considering these two scales helps in understanding why firms cluster in city regions, but also why they do so within specific neighbourhoods. The latter aspect is relatively underdeveloped in the literature on the spatial organisation of firms in the present day context, mainly because economic and urban geographers described the location patterns of fast growing firms as a move away from the city, towards peripheral science parks, office parks and university campuses in the past. Such sites were seen fruitful for knowledge spillovers and are directly connected to infrastructures (Audretsch & Feldman, 1996; Duvivier & Polèse, 2016). Yet, in line with the resurgence of overall economic and residential activity in city centre neighbourhoods (Russo & Van der Borg, 2017; Musterd, 2004), the location patterns of fast growing tech scale-ups seem to have changed, them preferring to locate in central neighbourhoods, rather than suburban office and science parks (Li et al, 2016; Duvivier & Polèse, 2016; 2018). The next sections will give some more useful insights from the literature that give depth to these mechanisms.

2.5.1 City Region Diversity and Density

On a city regional scale, urban diversity and density are key factors in attracting firms. Urban diversity and density help to “bring together and organize the labour market and talent, a wide array of firms that function as customers, end-users and suppliers; universities and knowledge institutes and other key inputs” (Adler et al, 2019: p. 123).

Using data on firm relocation in the Netherlands, Kronenberg (2013) identifies several factors on the city region level that influence knowledge intensive firms their relocation choices and that connect to diversity and density. She argues that relocation is mediated by ‘push factors’ that incentivise a move away from its current location and “pull factors” that incentivise a move towards a new location, under the conditions of the characteristics of the firm. She finds that a specialisation of knowledge intensive firms on a city-regional level pushes those firms to another municipality, whereas sectoral diversity significantly lowers the propensity to relocate. On top of that, a municipality’s population density is also found to significantly lower the propensity of these firms to relocate.

Andersson et al (2019) show similar findings that indeed demonstrate that firms look for diversity and density on a city region scale. They demonstrate this by correlating locational behaviour and the amount of employed outside a firm’s sector and employed within a firm’s sector on a city-regional. They uncover that the levels of density and diversity on the city region scale moderates clustering of firms within their own sector. Finally, Geissinger et al (2019) pose that larger cities contain more (institutional) support structures for young businesses, such as government programmes, investors and incubators, shared offices and mentors (ibid.).

The importance of the presence of knowledge institutes in start-up formation has been well documented (See McAdam & McAdam, 2007 for a discussion). Knowledge institutes, and universities in particular, can function as incubators and provide the knowledge to create innovative businesses. The amount of start-ups and spin-offs generated varies greatly between universities, however (Di
Gregorio & Shane, 2003). Although there are connections between knowledge institutes and the birth of start-ups, the relevance of knowledge institutes to scale-ups is less clear. One of the connections that could be made is that the presence of large and multiple knowledge institutes in a city increases the access to skilled labour for scale-ups (Geissinger et al, 2019).

2.5.2 Neighbourhood Specialisation

On a neighbourhood level, Adler et al (2019) argue sectoral specialisation is a driving force behind spatial clustering of firms. The body of literature on neighbourhood clustering of firms is less thick than the literature that examines the effects of diversity and density on a city region scale. Duvivier and Polèse (2016) and Duvivier et al (2018) offer an extensive analysis of possible factors that are of specific interest to the clustering of firms on a neighbourhood level, however.

Their findings do indeed point to a relationship between sectoral specialisation and neighbourhood clustering, as they measure positive effects of proximity to similar industries, which they link to knowledge spill-overs. Andersson et al (2019) support these findings, as they measure a sectoral specialisation of firms in inner city neighbourhoods in Sweden, measured in the amount of same industry employees as those of a firm on a neighbourhood level. Duvivier et al (2018) find that lifestyle preferences of workers also account for the locational behaviour of tech-scaleups, however, as they are usually located in inner historic city neighbourhoods with many cultural and leisure amenities. This matches Kronenberg’s (2013) finding in that they are located in neighbourhoods that are generally seen as attractive to individuals, like around shopping areas and landmarks.

Contrastingly, Sleutjes and Völker (2012) argue that growth ambitions or threat of decline usually translate to a need for cheap and flexible office space and therefore, locational decisions in the earlier stages of a firm’s development are less driven by other locational factors such as a locations’ amenities and surrounding infrastructures. Their research thus shows that the attractiveness of a location is less important for younger firms than the price of a location.

Overall, it can be said that the push and pull factors that mediate the clustering patterns of firms on a neighbourhood level are less clearly documented in the literature than those on a city region level. Moreover, the mechanisms behind cluster patterns on a neighbourhood level seem to reach further than the spill-over benefits of sectoral specialisation. The next sections of this literature review will therefore discuss other possible push and pull factors that influence the locational behaviour of firms on a neighbourhood level.

2.6 Human Capital

During the process of fast growth, tech scale-ups need additional human resources in order to expand their existing knowledge and skills, to maintain their innovative capabilities, to explore new markets and to meet growing market demands (Siepel et al, 2017; Chen, 2009). When investors provide the means to attract these human resources it becomes possible to attract a diverse pool of talent within a short timeframe (McNeill, 2016). Finding quality human capital is especially important for smaller firms, as the quality of human capital determines the firms’ innovative capabilities and success to a greater extent when it has fewer employees (De Winne & Sels, 2010).
Kronenberg (2013) finds that knowledge intensive firms are pulled towards municipalities in which average wages are relatively high within its own sector, indicating that firms seek highly qualified workers, ignoring the higher costs for them. This may also be an indication of firms hoping for human capital and knowledge spill-overs, since especially younger knowledge workers show relatively high turn-over rates (Horwitz et. al, 2003) and show relatively high career mobility, in part through job hopping (Tambe & Hitt, 2010).

Within the Dutch IT-Sector there is a growing shortage of talent, even more so when taking work experience into account (UWV, 2018). Matouschek and Robert-Nicoud (2005) argue that the degree of labour market imperfections has an influence on the degree of sectoral clustering of firms on the one hand and the concentration of knowledge workers in a location on the other hand. In the IT-sector there is a severe shortage of skilled workers on the labour supply side, while there are many start/scale-ups in quick need for skilled workers and the labour demand side. Thus, in line Matouschek and Robert-Nicoud’s (2005) argument, the only way in which the best job could be offered to the highest skilled worker opposed to competitors is by locating close to these competitors (Ibid: p. 577).

In other words, a need for quality human capital makes it a necessity for firms to locate close to competitors for highly skilled workers, under the condition that the supply of such workers is low and the demand is high. In this way, the same opportunities can be given by a firm to a potential worker for better offerings than its’ competitors. For workers themselves, the same holds true under these conditions, as concentrating gives opportunity to receive the highest wage relative to skill, without the risk of not finding a job. Therefore, locations with high concentrations of knowledge workers with IT-specific human capital are expected to generate high concentrations of firms in that industry in that same location under the present conditions of the IT labour market (Ibid.).

2.6.1 Knowledge Workers: A Move to Inner City Neighbourhoods
These mechanisms give some insight into how the human capital needs of scale-ups and the human capital resources a location has to offer play part in firms their locational behaviour. Yet, these mechanisms remain relatively abstract in explaining why some places, whether it be on a neighbourhood or regional level, have higher concentrations of entrepreneurs and human capital in certain sectors than others. The urban geography literature shows these differences mainly derive from the increasingly inter-urban competition for human capital on the one hand, and the changing preferences of knowledge workers on the other hand (Florida, 2002; Ewers, 2007; Van Winden et. al, 2012).

As knowledge workers -who are imperative to the knowledge economy- have become increasingly footloose (Pancholi et. al, 2015), creating attractive knowledge locations has become an important asset in policy making to attract skillful workers both on an international and national level. The many policies that were created during the turn of the millennium to attract highly skilled workers, created a new policy paradigm in which the creative class stood central\(^5\) (Peck, 2015). This thesis

\(^5\) Most of these policies were directly inspired by Richard Florida’s work on the creative class (see: Florida, 2002, 2006)
suggests that knowledge workers are attracted by diverse and culturally rich urban places (Peck, 2012; Uitermark, 2003). Inner cities, especially those with historical and aesthetic value like many Western-European inner cities possess, proved to be excellent in catering to knowledge workers as they hold a diverse population, historic old buildings and many leisure amenities like bars and restaurants within walking or cycling distance (Brown & Mason, 2019; Zukin, 2009; Florida 2002). These amenities reflect the demands knowledge workers have for their residential environment. Beckers and Boschman (2019: p. 722) show that international knowledge workers in the Netherlands specifically look for an “urban vibe” in their choices to relocate, rather than simply at the labour market and their chances to find a fitting job, for instance. Furthermore, Sleutjes and Boterman (2016) find that both national and international creative workers find Amsterdam attractive because it caters well to their specific lifestyle in its’ offering of amenities and because of there being relatively many historic apartments.

As the features of historic inner cities represent the overall reappreciation for urban life by knowledge workers, inner city neighbourhoods became a target for urban revitalisation and restructuring programmes to create cultural hotspots up to high living standards (Smith, 2002). In many cases, this pushed out residents with lower incomes because of displacements, rising rent prices and evictions, although the latter is less common in Europe because of more protective regulations towards tenants. Thus, broadly it can be said that in many cities the interplay between policy interventions and urban restructuring processes on the one hand, and changing preferences of knowledge workers on the other, induced wide-scale gentrification processes from many city centres outwards and regenerated economic activity in those city centres (Grodach, 2016; Peck, 2015; Guerrini, 2019; Martin et. al, 2015).

2.6.2 Knowledge Workers’ Residential Patterns and the Firm

Although these urban processes are widely documented in the urban and human geography literature, it is less known how firms, and in particular tech scale-up firms are affected by such processes. The question that remains is why they are, next to knowledge workers, also part of a move back to urbanity, rather than locating on more traditional office parks and science parks? Even more so when considering inner city neighbourhoods are usually quite impractical for tech scale-ups to locate in, as they provide relatively deprecated (digital) infrastructures, higher rents and small office spaces (Wlodarczak, 2012).

There are some clues in the literature to answer this question. Taking a broad perspective, Andersson et. al (2019) specifically, and Adler et. al (2019) more generally argue that scale-ups may want to profit from both diversity and density on a city-region scale and specialisation on a neighbourhood scale. This would mean firms are inclined to locate in inner city neighbourhoods to profit from inter-industry spill-overs, but only within dense and diverse city regions to also profit from intra-industry spill-overs. Thus, inner city neighbourhoods of large cities are the most viable options to locate.

Bontje and Sleutjes (2007) find that residential patterns of knowledge workers are to some extent consistent with economic activity in city regions, indicating that knowledge workers like to live close to work and amenities. Duivivier and Polèse (2016) show similar findings in that tech scale-ups need to be close to their workforce because of the changing life styles of knowledge workers that rather
opt to not go to work by car. If that workforce is subsequently located in inner city neighbourhoods because of the previously mentioned preferences they have, it is more likely tech scale-ups will show similar patterns.

Wlodarczak (2012) discusses a similar interplay between scale-ups their needs for human resources and the preferences of knowledge workers. He argues scale-ups need to be just as much a part of urban dynamics, coolness and local buzzes as knowledge workers themselves in order to be attractive to them in the first place. Thus locating in inner city neighbourhoods that are associated with “vibe” becomes an integral asset in attracting skilled and experienced workers. Both arguments hint that a specific firm location has increasingly become an important working condition to offer to potential workers.

2.7 Neighbourhood Clustering: Some Consequences

Clustering of firms can be a driver for innovative activities (Beaudry & Brechi, 2003; Gilbert et. al, 2009), the optimal use of resources and opportunities (Li et. al, 2015) and new firm formation (Gilbert et. al, 2009). More specifically, Baptista and Swann (1998) do not only show that firms in clusters are more innovative, they also enact with spill-overs by both profiting and contributing to the accumulation of the spill-overs a location provides. They use and attract human capital, generate and use new ways of working (e.g. shared office spaces) and contribute to and profit from investment and support structures.

On a neighbourhood level, and more specifically, on the level of inner city centres and adjacent neighbourhoods, clustering of firms may produce unwanted side effects next to strengthening the local economy, however. Since clustering of tech scale-ups on an (inner city) neighbourhood level is a relatively new phenomenon, the literature that documented such negative effects is relatively thin. Yet, fairly extreme cases like that of San Francisco and the Bay area, where the start-up and scale-up scene is exceedingly thriving, demonstrate how central neighbourhoods can undergo extremely rapid gentrification processes because of their popularity with tech start- and scale-ups (McNeill 2016; 2017). McNeill (2016) analyses how the inner city of San Francisco became very popular with fast scaling firms and their rapidly expanding workforce who can afford high rents. Such mechanisms combined with various political and marketing efforts caused soaring rents in these neighbourhoods, which eventually produced excluding mechanisms. Similarly, after introducing the ‘Tech City’ brand that fostered a new tech ecosystem in Inner East London, gentrifying forces drove the prices of doing business along with commercial rents up considerably (Nathan et. al, 2019).

Especially rising rent prices for both office space and dwellings poses a threat to both the urban fabric and businesses themselves. It impacts the urban fabric because lower and middle income households are driven out of city centres which causes spatial segregation. In the case of San Francisco and many other U.S. cities for instance, the places that are created through such gentrifying forces are marked by expensive rents and express the specific tastes of the creative class through their amenities, thus they increasingly express class stratifications (Zukin, 2009; Martin et. al, 2016; Florida, 2014). Furthermore, it specifically affects scale-up firms themselves because firm formation and/or firm expansion will be increasingly complicated by a reduced accessibility to appropriate and desirable
Moreover, next to residents, it is likely that businesses will be pushed out of city centres because of high prices and a lack of office space.

In light of the latter consequences it is quite striking that tech scale-ups seem to prefer inner city neighbourhoods over more peripheral locations, as this drives their costs for renting an office space up and reduces their options for expanding. Woldarczak (2013) finds a possible explanation in that many tech scale-ups willingly choose to pay more for rents over losing a location that represents a “local buzz”, even if this stands in the way of their growth ambitions. Hence, he argues the feeling of being at the centre of a dynamic environment seems most important for tech scale-ups, connecting locational behaviour to the qualities of specific places.

2.8 The Role of Place in Entrepreneurialism

The discussion above shows that a location is more than a provider of resources. It may also be an asset to sell to potential workers, or even investors, because they seek out dynamic and stimulating environments. The literature on tech scale-ups their locational behaviour on a neighbourhood level uses rather intangible concepts to describe these dynamic environments, however. Terminologies like urban vibe or coolness are not easily captured or measurable, since they are part of the narratives that are constructed around certain places. They portray a socially constructed meaning that a place may have for people, whether it be residents, workers or a firm’s founder(s) (Pancholi, 2015).

The role of place in entrepreneurialism has been a topic of debate among scholars in the fields of economic and urban geography for over three decades. Harvey (1989), for instance, posed that an increasingly entrepreneurial style towards city governance has put the creation of places at its’ forefront. In short, he argues the entrepreneurial city is marked by a lessened focus on managing jurisdictions (e.g. city districts, municipalities etc.) top-down by local and national governments in order to maintain and control liveability. Rather, city governance strategies in the entrepreneurial city are aimed at creating and experimenting in places through partnerships (e.g. office complexes, entertainment districts, shopping streets etc.) as a means to reinvent certain city districts to attract more economic activity. Thus, next to governments, networks of partners down to firms themselves that take part in the co-creation of places are actors in moulding the meanings of the city landscape.

More concretely, Jessop (1997) argues that in the entrepreneurial city, a myriad of enterprise, political and personal discourses tend to discursively capture certain places as viable economic spaces in which economic activity can thrive. These places are typically given definite and arbitrary boundaries and are discursively put into hierarchies. The practical outcome is that these mechanisms leave some spaces seemingly more plausible to grow a business in than others, whether it be at the neighbourhood or city region level (Jessop, 1997). One can thus conclude that the mechanisms by which some places are deemed superior to others to locate a firm in at least partially draw on the imaginary. Both in delimiting space and in giving it its’ attribute like “vibe” and “coolness”. According to Jessop (1997; 1998) and McCann (2004), this limits the role of more objective criteria that identify economic spaces, like the quality of infrastructure, commercial rent prices, and so forth.
2.8.1 Place Branding

Marketing and policy strategies can add to the discourses that construct place narratives (Kavaratzis & Kalandides, 2015; Pancholi et al., 2015). This influence is only limited in actually creating place narratives, however, as they generate “an imaginary place, via selective drawing on and reshaping existing local assets” (Nathan et al., 2019: p. 413). Thus, individual conceptions, collective thoughts, and wider spread reputations of places always forego place brands (Anholt, 2010). Place brands then, engage with existing discourses on place and try to capture them to generate concepts that attract people and businesses to a certain locale (Kavaratzis & Kalandides, 2015).

There are not many cases of sector specific place branding to draw examples from, yet Nathan et al. (2019) argue that sector specific place branding could especially target scale-up firms in the IT-sector. Multiple cases show that they could be sensitive to place branding because they often opt to locate within “distinctive urban milieux, SoMa in San Francisco and New York’s Silicon Alley being paradigm cases” (ibid.: p. 410). In discussing the ‘Tech City’ brand used by London’s municipal government to create a place specifically for young tech companies, Nathan et al. (2019) demonstrate that sectoral place branding has potential, but that brand-led policy strategies only partially succeeded in recapturing a place’s imaginary meaning.

A brand like Tech City does put a certain area on the map as a tech ecosystem, which in turn attracts economic activity (Nathan et al., 2019). It moreover shows a place brand can contribute to sectoral cluster development on a micro-geographical scale because it signals a certain milieu, offers a sense of community and attracts the attention of larger companies and investors (ibid.). Thus, on the one hand Tech-City’s brand-led strategy opened up the opportunity for companies to create their own place in a bottom-up fashion, using the brand to attract the attention of investors and potential workers. Yet, because the Tech-City brand became increasingly involved with policy and governance models, the brand became synonymous with policy intervention for some, especially fast growing companies (ibid.). Eventually, creating a top-down policy space was needed, because creating a bottom-up tech community proved to be too much of a fuzzy process to formulate a policy strategy to mediate the local residential and business climate. Moreover, due to this process being fuzzy, there were no sufficient structures in place to reap the benefits of having so many successful businesses in one locale.

Therefore, Nathan et al (2019) propose that successful place brands should not forego formulating an effective policy strategy. The first should rather be incorporated into the latter. Yet, since brands can only capture place imaginaries partially, and precisely because companies within these tech sector clusters produce quite distinct milieux, place brands that are incorporated into top-down policy strategies could meet resistance of local entrepreneurial communities. These practices are occasionally seen in the creation of ‘ecosystems’, which are in some cases imitations of successful policy and planning formulas implemented without any sensitivity towards their institutional environments (Isenberg & Onyemah, 2016). Hence, the question remains how policy and urban planning strategies around tech scale-ups can use place brands and at the same time mediate the current and intended state of a locale with its’ specific context in mind.
2.9 Questions Following the Literature Review

From this literature review some questions come forward that we will use to structure the findings presented in this report:

- To what extent is the Amsterdam region attractive for tech scale-ups
- What spatial patterns do we observe regarding their location?
- How do Amsterdam based tech scale-up companies grow, and how do these growth dynamics affect their spatial needs?
- Which factors affect their locational decision making during the process of growth?

The first two questions will be answered in chapter 3, by mapping the location patterns of tech scale-ups towards and within the Amsterdam city region. We use quantitative data obtained through the Dealroom.co database. The latter two questions will be addressed in chapter 4. Here we use qualitative data obtained from 9 cases to give more depth to the growth and location patterns of fast growing tech scale-ups.
Chapter 3: Location Patterns and Preferences: A Quantitative Analysis

3.1 Introduction
This chapter is focused on the location patterns and preferences of scale-ups in Amsterdam. For the purpose of the study, a scale-up dataset was prepared for tech firms that have at least 10 employees and an average employment growth higher than 20% per annum in the last 3 years. Our data are sourced from Dealroom.com and scale-ups’ webpages. The scale-up dataset includes geographical locations of scale-ups based on zip code, industry types of scale-ups, employee size of scale-ups, the gender of scale-ups’ founders, total funding amount of scale-ups and the location of alumni companies in the Netherlands based on city. All this information had been downloaded between 15th of September, 2019 and 15th of October, 2019 from Dealroom.co and scale-ups’ webpages.

3.2 The Geographical Locations of Scale-ups in Amsterdam
In total 68 scale-ups in Amsterdam crossed the bar of 10 employees and average employment growth is higher than 20% per annum in the last 3 years. Their geographical location is pictured in Figure 3.1.

Figure 3.1 Map of Scale-ups in Amsterdam
The scale-ups are spread out to whole Amsterdam. As can be seen in Error! Reference source not found., they are located not only in the center of Amsterdam but also at the city's edges, such as in Riekerpolder, the peripheral boundary of the canal ring and around Academic Medical Centre. First and foremost, when comparing the locational preferences of the scale-ups in Amsterdam, we see that most of the scale-ups are located in the canal ring area. A second concentration can be found in the peripheral boundary of the canal ring area. Smaller clusters are found in Riekerpolder and the Academic Medical Centre districts (see Figure 3.2).

**Figure 3.2: Map of Amsterdam Districts and Neighborhoods**

Notes: * In this study, the canal ring is referred to seventeenth-century canal ring area of Amsterdam inside the Singelgracht (UNESCO, 2011).
3.2 Industry Type Analysis of Scale-ups in Amsterdam

Information on the industry types of 68 scale-ups in Amsterdam had been downloaded between 15\textsuperscript{th} of September, 2019 and 15\textsuperscript{th} of October, 2019 from Dealroom.co. 29 scale-ups have two different industry types and the total number of industry types of 68 scale-ups in Amsterdam is 97. As can be seen in Table, of the 68 scale-ups in this report, 15\% scale-ups are in enterprise software, 10\% scale-ups in transportation, 9\% scale-ups in fintech. Other industry type includes real estate, jobs recruitment, telecom, semiconductors, security, renewables & environment, education, activities, legal, kids, music, home living, gaming, financial services, fashion, and biotechnology.

Table 3.1: Frequency of Industry Types of Scale-ups in Amsterdam

<table>
<thead>
<tr>
<th>Industry Types</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise software</td>
<td>15</td>
<td>15%</td>
</tr>
<tr>
<td>Transportation</td>
<td>10</td>
<td>10%</td>
</tr>
<tr>
<td>Fintech</td>
<td>9</td>
<td>9%</td>
</tr>
<tr>
<td>Marketing</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>Media</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>Travel</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Information Technology and Services</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Sports</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Health</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Food</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Energy</td>
<td>4</td>
<td>4%</td>
</tr>
<tr>
<td>Others</td>
<td>25</td>
<td>26%</td>
</tr>
</tbody>
</table>

Source: Dealroom.co, 2019

In 3, the map of all industry types of scale-ups can be seen. We do not see a clear industry specialisation in the canal ring area (see Figure): the area is highly diverse, with fintech, enterprise software, transportation, travel, marketing, media, Information Technology and Services, and other industry types. As seen in Figure, Riekerpolder is dominated by firms in enterprise software, media, travel, sports, and others.
Figure 3.1: Amsterdam Scale-Ups Map based on Industry Types; Source: Dealroom.co, 2019

Notes: Color Code of Industry Types

<table>
<thead>
<tr>
<th>Enterprise software</th>
<th>Transportation</th>
<th>Fintech</th>
<th>Marketing</th>
<th>Media</th>
<th>Travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology and Services</td>
<td>Sports</td>
<td>Health</td>
<td>Food</td>
<td>Energy</td>
<td>Others</td>
</tr>
</tbody>
</table>

Figure 3.4: Map of Amsterdam Districts and Neighborhoods based on Industry Types; Source: Dealroom.co, 2019

Notes: Color Code of Industry Types

<table>
<thead>
<tr>
<th>Enterprise software</th>
<th>Transportation</th>
<th>Fintech</th>
<th>Marketing</th>
<th>Media</th>
<th>Travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology and Services</td>
<td>Sports</td>
<td>Health</td>
<td>Food</td>
<td>Energy</td>
<td>Others</td>
</tr>
</tbody>
</table>
Figure 3.5 shows concentrations of various sectors: enterprise software, transportation, fintech, marketing, information technology and services, media, travel, energy, food, health, sports, and other industry types. Most of the fintech scale-ups located in the city centre. Additionally, almost all of the marketing scale-ups located in the city centre of Amsterdam. The rest of the industry categories of scale-ups are spread out to the whole of Amsterdam. Therefore, no location pattern can prevail in industry types of scale-ups, except fintech and marketing scale-ups.

Figure 3.5: Amsterdam Scale-Ups Map based on Different Industry Types Source: Dealroom.co, 2019
3.3 Employee Size of Scale-ups in Amsterdam

The average number of employees of scale-ups in Amsterdam is 73 in 2019. The employee size of scale-ups is in between 9 and 637. Table shows the employee size range of scale-ups in Amsterdam. The data in Table indicates that most of the scale-ups have 26-50 number of employees’ range.

Table 3.2: Employee Size Range of Scale-ups in Amsterdam

<table>
<thead>
<tr>
<th>Number of Employees at Scale-ups</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-25</td>
<td>11</td>
<td>16.18%</td>
</tr>
<tr>
<td>26-50</td>
<td>24</td>
<td>35.29%</td>
</tr>
<tr>
<td>51-100</td>
<td>22</td>
<td>32.35%</td>
</tr>
<tr>
<td>101+</td>
<td>11</td>
<td>16.18%</td>
</tr>
</tbody>
</table>

Source: Dealroom.co, 2019

Smaller size scale-ups (i.e. less than 26 employees) are generally located in the canal ring area (see Figure 3.3). Scale-ups with 26 employees or more are located all over the city of Amsterdam (see Figure 3.3). However, as can be seen in
Figure 3.2, the canal ring area is the most preferred location for all employee size range.
Figure 3.2: Amsterdam Scale-Ups Map based on Employee Size; Source: Dealroom.co, 2019

Note: Color Code of Employee Size

1-25 employees
26-50 employees
51-100 employees
101+ employees

Figure 3.3: Amsterdam Scale-Ups Map based on Different Employee Size; Source: Dealroom.co, 2019
3.4 Gender Diversity

The gender of scale-ups founders in Amsterdam had been downloaded between 15\textsuperscript{th} of September, 2019 and 15\textsuperscript{th} of October, 2019 from Dealroom.co. Gender information of 8 scale-ups is not available on Dealroom.co. 21 scale-ups have one founder. 26 scale-ups have two founders. Additionally, 6 scale-ups have three founders and 7 scale-ups have more than 3 founders. The total number of founders for 60 scale-ups in Amsterdam is 200 (see Table 3.1). As can be seen in Table 3.1, of the 200 founders, 114 or 89\% are male.

Table 3.2 shows the number of female-only founder team, male-only founder team, and mix (i.e., female and male) founder team. The number of female-only-founded scale-ups is 0. The percentage of the mix founder team is 6 (see Table 3.2). The majority of the scale-ups have male-only founder teams. We observe from Table 3.2 that female founders are just in mix founder teams. Error! Reference source not found.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Male</td>
<td>114</td>
<td>89</td>
</tr>
<tr>
<td>N/A</td>
<td>8</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Dealroom.co, 2019

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
3.5 Funding Analysis

Total funding amount had been downloaded between 15th of September, 2019 and 15th of October, 2019 from Dealroom.co. The total funding amount of 10 scale-ups is not available on Dealroom.co. The average total founding amount of 58 scale-ups in Amsterdam is 10,98 million Euro. The location analyses are also carried out separately for €0-2 million, €2-4 million, €4-6 million, €6-8 million, €8-10 million, and €12 million or more. Table 3.3 shows the total funding ranges. The canal ring area is preferred by different total funding ranges. In addition, most of the scale-ups with €12 million or more in funding are located in the canal ring area (see Figure 3.4).

Table 3.3: Total Funding Range of Scale-ups in Amsterdam

<table>
<thead>
<tr>
<th>Total Funding Range (Million Euro)</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>9</td>
<td>16%</td>
</tr>
<tr>
<td>2-4</td>
<td>15</td>
<td>26%</td>
</tr>
<tr>
<td>4-6</td>
<td>6</td>
<td>10%</td>
</tr>
<tr>
<td>6-8</td>
<td>11</td>
<td>19%</td>
</tr>
<tr>
<td>8-10</td>
<td>4</td>
<td>7%</td>
</tr>
<tr>
<td>10-12</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>12+</td>
<td>11</td>
<td>19%</td>
</tr>
</tbody>
</table>

Source: Dealroom.co, 2019

Figure 3.4: Amsterdam Scale-Ups Map based on Different Funding Range; Source: Dealroom.co
3.6 Amsterdam as an Attractor Factor for Scale-Ups

Does Amsterdam attract scale-ups from elsewhere? There are no watertight data on this, but we made an approximation. The Dealroom database has information about the universities where the founders of scale-up companies graduated. When one of the founders of a scale-up has a degree from Utrecht University, this scale-up is considered an alumni company of Utrecht.

Using these data, we can see how many scale-ups of Amsterdam have some origins in other cities. Our “alumni companies” dataset was prepared for alumni companies in the Netherlands from the following sources: Dealroom.co and scale-ups’ webpages. Information on the alumni companies in Amsterdam was downloaded between 15th of September, 2019 and 15th of October, 2019. The alumni companies dataset includes geographical locations of alumni companies’ headquarter based on city and country. A randomly selected sample of 15% of the alumni companies in the dataset were double checked by two researchers for validity and accuracy. Alumni companies of 56 universities in the Netherlands have been listed in Dealroom.co. There are 643 alumni companies listed in 20 cities in the Netherlands, and we listed their current headquarter locations.
Table 3.4 shows the details of alumni companies in the Netherlands, including the cities (of the universities where one of the founders graduated), the total number of alumni companies of all the universities in the related city, the total number of alumni companies that are located in Amsterdam, percentage of alumni companies that are located in Amsterdam, the total number of alumni companies that are located outside of the Netherlands, and the total number of alumni companies in the Netherlands that aren’t located in Amsterdam and the university city.

The table must be read as follows, taking the row of Delft as examples: 36 scale-ups have been founded in Delft, or at least with one founder who graduated in Delft. From these 36, only 5 are still in Delft; 13 are in Amsterdam (36 of the total); 12 moved abroad.

We observe from
Table 3.4 that Amsterdam is the most preferred location of the alumni companies in the Netherlands. Almost 25% of alumni companies in the Netherlands are located in Amsterdam.
Table 3.4: Alumni Companies in the Netherlands

<table>
<thead>
<tr>
<th>Cities in the Netherlands</th>
<th>Total # Alumni Companies*</th>
<th># Alumni Companies in the City</th>
<th># Alumni Companies in Amsterdam **</th>
<th>Percentage of Alumni Companies in Amsterdam</th>
<th>Number of Alumni Companies Moved to Abroad</th>
<th>Other s ***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkmaar</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>50%</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Amsterdam</td>
<td>124</td>
<td>64</td>
<td>64</td>
<td>52%</td>
<td>34</td>
<td>26</td>
</tr>
<tr>
<td>Arnhem</td>
<td>11</td>
<td>1</td>
<td>3</td>
<td>27%</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Breda</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>17%</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Breukelen</td>
<td>11</td>
<td>0</td>
<td>6</td>
<td>55%</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Delft</td>
<td>36</td>
<td>5</td>
<td>13</td>
<td>36%</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Eindhoven</td>
<td>56</td>
<td>13</td>
<td>10</td>
<td>18%</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>Enschede</td>
<td>38</td>
<td>10</td>
<td>6</td>
<td>16%</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Groningen</td>
<td>52</td>
<td>4</td>
<td>25</td>
<td>48%</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Haarlem</td>
<td>15</td>
<td>1</td>
<td>4</td>
<td>27%</td>
<td>6</td>
<td>4</td>
</tr>
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<tr>
<td>Nijmegen</td>
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<td>12%</td>
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<tr>
<td>s-</td>
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<td>17%</td>
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<td>The Hague</td>
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<td>4</td>
<td>18%</td>
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<td>12</td>
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<tr>
<td>Utrecht</td>
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<td>Wageningen</td>
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<td>1</td>
<td>14%</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Dealroom.co, 2019

Notes: * Total number of alumni companies from all universities in the related city; ** Number of alumni companies in the related city that is located in Amsterdam; *** Number of alumni companies in the related city that is located in somewhere else in the Netherlands (different than university location and Amsterdam); 1 location of alumni company is not available in Rotterdam, in Amsterdam, in Groningen and in Nijmegen
Chapter 4: Location patterns and preferences: a qualitative analysis

4.1 Introduction

In this chapter, we analyse the growth dynamics, location preferences and geographical dynamics of tech scale-ups. The analysis is based on face-to-face interviews with scale-ups, located in various parts of the city, and with real estate experts. We explore how Amsterdam based tech scale-up companies grow, and how these growth dynamics affect their spatial needs. Also, we analyse which push and pull factors affect Amsterdam based tech scale-up companies in their locational decision making, on the neighbourhood and building level. Such factors include rent prices, contracts, human capital, incubators, VC, but also less tangible ones like place narratives.

Table 4.1 gives an overview of our interview partners. Table 4.4 at the end of this chapter maps their locational behaviour in more detail.

Table 4.1 Interview partners

<table>
<thead>
<tr>
<th>Company</th>
<th>No.</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catopedia</td>
<td>1</td>
<td>Online auctions</td>
<td>Centre</td>
</tr>
<tr>
<td>Pole jump</td>
<td>2</td>
<td>Travel app/blog</td>
<td>Centre</td>
</tr>
<tr>
<td>ImpactIQ</td>
<td>3</td>
<td>AI solutions</td>
<td>North</td>
</tr>
<tr>
<td>Animalplay</td>
<td>4</td>
<td>Market intelligence in gaming</td>
<td>Houthavens</td>
</tr>
<tr>
<td>Phenix</td>
<td>5</td>
<td>E-Scooter sharing platform</td>
<td></td>
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<tr>
<td>FinWise</td>
<td>6</td>
<td>Interpretation of financial news</td>
<td>Centre</td>
</tr>
<tr>
<td>WorkFlex</td>
<td>7</td>
<td>Flexwork platform</td>
<td>West</td>
</tr>
<tr>
<td><strong>Co-working space</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TQ City</td>
<td>8</td>
<td></td>
<td>Centre</td>
</tr>
<tr>
<td>B Amsterdam</td>
<td>9</td>
<td></td>
<td>West</td>
</tr>
</tbody>
</table>

4.2 Growth stages

How do tech scaleups grow? Based on insights from the literature and interviews, we identify some typical “growth trajectories” of scale ups. The phases do not represent a predictable sequential process; companies can move or jump from one stage to another, but they can be helpful to understand and unravel the development of fast-growing firms.

- **Start-up phase**. Here, founders spend their own savings (sometimes supported by family or friends) to develop their business idea or value proposition. Typically there are hardly any revenues, the founders live on a shoestring and work day and night to develop their product. Sometimes the scale-up is a side-project, next to holding a regular day-job. Networking with other firms and individuals is very important, as a source of new ideas, capital, and support.
Organic growth. In this stage, growth is relatively moderate. The company further develops its identity, expands its product portfolio and develops its markets. New investments or hires are backed by revenue growth rather than large capital injections.

Capital-fuelled growth. This stage is typically fuelled by sizeable funding rounds. In this trajectory, the company remains largely independent, but external capital (from angels, venture capitalists or otherwise) puts heavy pressure on the firm to grow rapidly, often in expectation of later revenue growth. Cash is “burned” to hire more staff and/or to capture new markets rapidly.

Exit. The company goes public and floats on the stock market, this acquiring access to capital.

Growth by acquisition. In this case, the firm buys (a share in) another company to acquire access to technology, IP, new markets or new competences.

Growth by being taken over. In this trajectory, the company becomes part of a larger business or group; it loses some autonomy but may still expand rapidly.

Stabilization: growth stalls, the company remains relatively stable in terms of revenues and/or staff.

Negative growth: decline in turnover or staff.

Most companies that we interviewed were in the steep growth stage fuelled by recent external funding (2, 5, 6, 7); some in the organic growth (1, 6) stage; one firm (4) was taken over by selling most of the company to an external party, but the founders were still at the steering wheel; one firm was in a more stable stage (1), and one in a negative growth stage (3), despite a recent history of strong growth.

4.3 Scaleups in the wider context of the entrepreneurial ecosystem

Scale-ups are part of the wider tech sector in Amsterdam. Within the tech sector, several broad segments can be discerned. First, there is a thriving local start-up scene, with firms originating from universities (students or researchers), or founded by employees or serial entrepreneurs. Second, Amsterdam is home to a large number of more traditional corporate companies, especially headquarters in the financial and commercial sectors, that become increasingly technology intensive. In their quest to make a transition to more digital business models, they hire large amounts of tech talent, and also developed more connections with start-ups. Third, the Amsterdam region is home to a growing number of international companies that use the city as a base for their European operations. Also, these firms become more technology intensive, as they increasingly rely on digitised business models.

From this perspective, the economy of the Amsterdam region has several features that make it easier for a start-up to become a scaleup. The presence of established, larger tech businesses (scaleups from an earlier era) and corporates helps, for several reasons: they attract tech talent to the region, that may later find their way to new scale-ups; these firms are a “school” for tech management skills, and also, some provide risk funding. Scaleups also benefit from the variety of entrepreneurship events, training sessions and bootcamps; contacts with senior/experienced advisors etc.

The interviews confirm that the start and growth of firms in a city is highly context specific, embedded in the wider evolution of the business/startup ecosystem of the region. In line with OECD
(2013), we observe that larger established tech businesses in Amsterdam play an important role for the current start-up and scale-up scene as attractors and developers of human resources and skills, from which other local firms can benefit when staff changes jobs. Larger firms act as (international) talent magnets and professional training grounds, and also develop the ecosystem’s managerial pool. Moreover, they provide commercial opportunities for local businesses, and they can be a source of spin-out companies and venture capital.

In Amsterdam, two firms play these roles prominently: Lost Boys (created in the 1990s and the flagship of Amsterdam’s tech scene during much of the 2000s), and Booking.com, one of the largest, fastest growing and best known platform companies in the city. Booking.com has been a major attractor of international IT talent, that spills over to other firms: Several of our interviewees mentioned that they hired former Booking.com staff. Also, one of the firms we interviewed hired a seasoned Booking.com management executive to lead it into a new growth stage. Lost Boys has developed a reputation of the cradle of as many 80 startups created by former employees (including one of the firms we interviewed), and the former owners of Lost Boys are active as investors in the local tech scene.

4.3.1 Access to talent
Attracting and managing talent is a key factor for scale-ups. During our interviews, we found that recruitment and retention efforts are very strategic for firms. When scale-ups grow, their demand in terms of skill and experience levels of potential employees also increases. In their start-up phase, firms tend to hire relatively inexperienced workers. For cost reasons, some recruited employees that just graduated and had no previous work experience. But when a firm receives a capital investment, cost saving becomes less of an objective, and most money is allocated towards finding experienced staff. Sometimes companies invest in attracting recruitment experts.

“It had to do with money, that’s why we hired straight out of university. But now we notice it is nice to also have more experienced people around.” (Company 7, our translation)

“[W]e are now in the phase that we started hiring recruiters. They are expensive, but you are ensured that you have the right candidates immediately, because they know what selection criteria to use. You can let them do it, and then it saves you time as well.” (Company 6, our translation)

“[…][W]e hired a lean recruitment machine […]. She’s a super experienced scale-up recruitment lady. She’s only done scale up phases and she’s just an animal, she’s really good at that and she saved us.” (Company 4)

Typically, in the fast growth stage, there is no time to train unexperienced staff on the job, because things need to be done quickly. Moreover, because only a limited amount of people are available for certain workflows, in-house training or mentoring is too complicated and time consuming.

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For these reasons and because it is especially hard to find experienced and talented workers, scale-ups seem to tap into the international pool of talented after they received investments to broaden their scope and simplify their search for experienced talent.

“If you’re hiring a more junior guy, which you have to invest your time and resources into developing that person, which at a bigger company is starting to make more and more sense because they’re seeking to attract more and more people. But at our current state, we have a bit more mediors and seniors that we hire because they can just come in and get stuff running by tomorrow. And we need speed right now more than anything else […]. It’s a very simple choice. If I hire a senior developer which I just did, in Argentina, you got what, in two months he is just kicking it. If I hired a junior guy instead, then that person would have been really slow to get on his feet and our CTO will need to spend five hours a week guiding him”

(Company 2)

Early on, scale-ups may lose employees or potential hires to larger companies, like Booking.com, because they offer better working conditions and environment and better jobs. Sometimes employees returned to the scale-up after spending a couple of years with a larger company. One of our respondents mentioned that some ex-employees or previous applicants that turned down the job initially, returned when the scale-up grew considerably. It could therefore offer comparable job opportunities to those offered by larger companies, diminishing the importance of location.

“Now they are prepared to bike for 45 minutes. But a year ago, there were people that said no to the job because we c, you had to cross the entire city. […] It’s the attraction to our company culture. […] There are not many companies like ours.” (Company 7, our translation)

Employees might also leave precisely because the scale-up grew rapidly and because many new hires, goals and organisational changes created a different company culture. In such cases, early employees find it hard to identify with the changing company culture during the process of growth. In some cases, employees might search for a job with a new start-up. <Temper, but this was said in more interviews I believe>

“I mean, especially our first hires note that we have changed a lot. They were there when we rented an office in an anti-squatting building and ate crackers with peanut butter all day. […] The difficulty lies not only in hiring new staff, but also in finding the right place for our current staff to use their potential and to keep them satisfied.” (Company 7, our translation)

4.4 Location patterns

What location patterns can we see among firms, during their various stages of development? What type of real estate do they look for, in what types of neighbourhoods? Based on our interviews, some typical paths emerge.

In the start-up phase, founders work from their homes, rent a few desks at an incubator or a co-working space, or work from garages or even squats. Most of the firms we interviewed were founded
in Amsterdam, with one or more of the founders actually living in the city for a longer time. Office space must be low-cost, and easily reachable by the founders. The quality of the space matters less during this stage.

"We were looking for cheap office space again after being at the Rockstart incubator, because next to salary costs, office space is one of your biggest cost items. We had investors that had a good network and found us a semi-free office space in Utrecht. It’s not important for it [office space] to be pretty, it’s about it being usable." (Company 6, our translation)

"We started here in the Jordaan. Close to Haarlemmerstraat, the Binnen Oranjestraat. In the back of a floor, it didn’t even have windows and then in the front there was another little company. We started there because my business partner owned the whole house.” (Company 4)

Incubators or co-working spaces are important, because such premises offer flexibility as well as access to business partners, capital, new ideas, social support and sometimes also training. When we asked incubator managers what their role is in the start-up scene, they highlight their ability to help in the start-up process through their communities.

“[…][B] being able to attract talent because it’s an attractive space, we organize relevant events and we are a curated community. So all the people you meet here are a tech professional or relevant for your company. And I think that’s most important.” (Incubator 1)

Some of our respondents explicitly state the great value incubators and co-working spaces have for firms during the start-up phase. They offer easy access to professional and supportive networks, and especially incubators offer cheap and flexible office space:

“We rented some desks at WeWork because we could build a network from there. Also, it is simply nice to have your own space and to be able to have a shared space to meet.” (Company 7, our translation)

“Incubators are nice to receive help in starting up your business. At the beginning you really need that to survive. Location and the looks and feel of the premise do not matter that much at this point.” (Company 6, our translation)

In the organic growth stage, when the business starts to become successful, the owners/founders start to hire staff, need more space, and tend to move to larger premises where they can grow their business in a more representative way. In this stage, various factors play a role in the decision to move. For those who started in co-working spaces, cost saving is an important argument, as such spaces tend to charge per desk and become relatively expensive when the company grows.

“So we went from a six or eight person room to a ten person room and then we had a twelve person room and then we’ve got two. So it was easy. We had to go from floor to floor and moving
up and down but they supplied all the desks. Everything was there. We just had to move all of our computers and stuff. [...] But on the downside it was incredibly expensive for what you get.” (Company 3)

“So if you have a small number of people working in your business it’s cost effective. But as soon as you scale up to like a hundred people we worked out we were paying about nine hundred euros a square meter, which is about double the market rate for office space. The second problem that we have is that there’s so much pressure on the coworking spaces and there’s so much demand that it’s very difficult to get the layout of the space which works for your team. (Company 1)

And at the same time, an important advantage of a co-working space - being there with other companies, meaning access to networks, and all kind of support - gradually becomes less important because the firm has now found its business rationale and focusses on growth. Working on one’s own company culture and identity becomes increasingly important and being in a coworking space with so many other startups and flexworkers complicates this;

“If you go to a co-working space it is by definition hard to have a company culture. What it radiates and what it feels like and what we were trying to really build is like a team and a certain company vibe and people feeling attached to the company. You know, because we believe that that’s good for retention.” (Company 2)

Another problem that we have is that there’s so much pressure on the coworking spaces and there’s so much demand that it’s very difficult to get the layout of the space to work for your team. And so we ended up with a scenario at one point where we had people split across three floors of the building. And so it breaks the structure of the teams where they work together. It made it very hard to collaborate.” (Company 1)

In the search for new business premises, important considerations are price, nearness to public transport hubs (especially when the founders are from outside Amsterdam), and a general “cool” factor to be able to attract staff and to “make work more than just work”. Flexibility, seems to be one of the most important demands, as many companies take their growth prospects in consideration when renting out an office space during this stage. They aim for investments and when they are successful, they want to be able to hire new staff as fast as possible. Yet, because rental contracts tend to be quite inflexible, and space in central locations is scarce, it is often hard to expand. Firms often have to rent additional office space for long terms. In such cases, they often take the risk and simply rent more space when they have the opportunity to do so.

“Well I think it’s not easy to scale up really fast in [old canal] buildings like this. So that’s I think the downside. Because um I mean it’s sometimes able to rent another room or stuff is not really scalable if we have 100 people working for us within a year for example then we are not able to make sure that they are all working over here.” (Company 5)
“At the Newmarkt area, we had an old ballet school where you could have around a maximum of 15 people on the floor but we were able to hire the floor above. So we doubled our floor space in the middle of that period. A company above us left. We were not ready to use that, to fill up that space; but with a five year lease we took a guess; a gamble, and we rented it.” (Company 4)

“We only had eight employees [when we moved here]. But we already knew that we were about to grow as we were working on raising the next investment, which was our series A which is really a thing in the start-up financing world. That’s like the big round where everything changes” (Company 2)

When firms enter in a capital-fuelled growth stage, with external funding rounds, their location behaviour changes again. In this stage, there is a heavy pressure from investors to grow rapidly (“no matter how”). Firms hire more staff in short time spans and outgrow their premises. In this stage, because of capital investments, the rental costs for office space matters less; the primary concern is to find a space that is large enough, flexible, and attractive for employees, especially international ones that are hired in greater numbers.

“We often hear that the central location of our premises, the views we have from our office space and the vibe around here are are decisive factors for applicants to choose to work for us. [...] You are at a very accessible location for your customers and you have employees that feel at home” (Company 6)

Thus, our interviewees indicate that in this stage, the quality and location of the office are key factors in attracting the much-wanted IT professionals; Therefore, most prefer a prime location downtown, or with nice views, that is easily accessible by bike or by good public transport connections.

As noted in chapter 3, Amsterdam has attracted a large number of scale-ups that were founded by entrepreneurs from other cities. Their reasons to (re)locate to Amsterdam can be manifold, but one reason stands out: Amsterdam is considered the prime location in the Netherlands to find and attract international (IT) staff. An example is provided by company 1, founded in the North-East of the Netherlands. When it entered in a steep growth stage, it could no longer attract sufficient numbers of (international) IT staff; For this purpose, it opened a branch in downtown Amsterdam, first in a co-working space and then it rented a bigger building. A few years later, the Amsterdam branch had outgrown the original headquarters in the North of the Netherlands. By doing so, it served as the company’s flagship office to attract (mostly international) human resources. Furthermore, the Amsterdam office is used to regularly fly in sales representatives from various European countries, to discuss developments with them.

Yeah Assen is still technically our head office believe it or not. And then across Europe we have around 180 or 200 home office staff. [...] We see our European staff once every three months or so in our Amsterdam office. (Company 1)
The latter reflects a more general tendency of scale-ups to become increasingly international in the capital-fuelled stage, not only in staff composition but also in the sense of developing partnerships with international firms/investors, opening small establishments in international markets, or working closely with international clients. In this respect, proximity of Schiphol International Airport becomes more important as an asset.

“Schiphol is just a super crucial part for doing business in Amsterdam. It’s such an essential part of the success of Amsterdam. You know, you can so easily fly where. Yeah, for us it’s really nice, that’s why we can stay here. We travel a lot, and if we couldn’t, we would have to move more people to offices abroad, we don’t want that.” (Company 4)

Some companies might become completely footloose. One of our companies shrunk in size, but also started outsourcing a lot of its work to developers all over the world. This made the need for office space less crucial and the search for talent easier.

“But if you’re outsourcing work and find different people on some platforms where you can find developers, the beautiful is that you don’t have to hire them or hire space for them. You use them and if they’re great then you pay them more. There’s talent few and far between.” (Company 3)

Despite internationalisation, all firms we interviewed keep working from a single head office in Amsterdam; there are no intentions to open substantial branch plants in The Netherlands or abroad. One firm suggested that it might be interesting to open a small branch in the East of the country (where one of the owners comes from), but mainly as a way to attract IT talent from that region.

“I’ve been joking a few times, but maybe I wasn’t fully joking, that we might even set up a development hub in Hengelo. I’m from the east myself. Because there’s way less scarcity for talent. And it’s a two hour train ride to Amsterdam Zuid station so possibly we could hold meetings there. Two hours from Amsterdam Zuid and you are in Hengelo and if you have an office there people can see each other face-to-face.” (Company 2)

Recognising that their firms have to attract a lot of human capital during the capital-fuelled growth stage, a concern that our interviewees raised is the rising rent prices and scarcity of housing in the Amsterdam city region. Because some smaller tech scale-ups do not have the financial means to pay top-salaries, many of their employees struggle to find affordable housing. In one case, the company considered to rent houses for its employees, yet they find it hard to compete with larger companies like Booking.com for housing. Other companies hoped for more starters-apartments, maybe even built on tech campuses like that of the Riekerpolder.

“One of the biggest worries is housing cost, we can get people for a low salary and expect a low housing rate and then they come here and they’re surprised and even surprises us” (Company 4)

“[…]You can see, you know, the dynamic of the city changes because the people who need houses are getting paid big salaries and so they don’t mind if they just pay €3k €4k a month on their rents. Now the people who struggle are obviously on the lower income side, and with
smaller companies and they’re not getting social housing and so they have to look further away from the city.” (Company 1)

### Table 4.2 Considerations when searching new premises:

<table>
<thead>
<tr>
<th>Dominant considerations</th>
<th>Start-up phase</th>
<th>Organic/moderate growth</th>
<th>Capital-fuelled growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building level</td>
<td>Home, co-working spaces, squat -cheap -close to founders’ home</td>
<td>Small rented office -cost-effective -open space -short-term, flexible contract -own entrance/identity</td>
<td>Large rented office -premium location -open space -own facilities (kitchen etc) -Room for expansion</td>
</tr>
<tr>
<td>Area/Neighbourhood level</td>
<td>Close to home of founders</td>
<td>Access to transport hub Urban diversity, mix of housing, leisure, retail</td>
<td>Attractiveness for staff “Cool” area: Centre, North, Houthavens Image of area must fit image of company</td>
</tr>
<tr>
<td>City as an asset</td>
<td>Amsterdam is a good incubation environment thanks to dense networks, access to interesting ideas and people, access to capital, interesting spaces, places &amp; events</td>
<td>Amsterdam is a good place to recruit and retain (IT) talent VC and entrepreneurship scene much appreciated Next web, events etc.</td>
<td>The “Amsterdam brand” is key to attract international talent Schiphol facilitates internationalisation Still moderate labour costs/cost of living compared to international competitors</td>
</tr>
</tbody>
</table>

#### 4.5 Buildings and neighbourhoods

When searching for a new location, firms consider a number of factors, on the level of the building and the neighbourhood: cost, accessibility, flexibility (in terms of space and contract duration), facilities, the type of space, and various aspects of the surrounding urban area. Table 4.3 gives a brief overview
Table 4.3 Important factors for choosing a building and neighbourhood

<table>
<thead>
<tr>
<th>Building</th>
<th>Neighbourhood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price/m²</td>
<td>Image</td>
</tr>
<tr>
<td>Facilities &amp; services</td>
<td>Accessibility</td>
</tr>
<tr>
<td>Flexibility of contract</td>
<td>Amenities</td>
</tr>
<tr>
<td>Scaleability of space</td>
<td>Safety</td>
</tr>
<tr>
<td>Level of control</td>
<td></td>
</tr>
</tbody>
</table>

4.5.1 The building level

Most scaleups strongly prefer to operate from one single location/building and they do so for various reasons. First, being in one location is seen as important to create a family-like company culture where employees feel part of a larger team. Having daily joint lunches and social events on-site creates a feeling of social belonging and purpose. On top of that, many scale ups are highly innovative, putting much efforts in product and market development. In this development stage, close contacts and “short lines” between various company units (such as customer service, IT development, human resources) are considered essential. Unlike established firms, the scale-ups still have few routinized activities. Conversations between departments is dense, rich and context specific, there are few standardized or codified tasks that could be outsourced to external staff.

“We've tried to do that before, to split up, we had three locations within the same building. And it just didn't work well enough. Some teams just didn't feel included. There wasn't a culture, it was quite hard to engage people. [...] You just didn't get these conversations that are often the most valuable but not scheduled, where something happens just by chance” (Company 1)

“So we would rent an office of hundred and eighty square meters divided into four different rooms. And we thought that wasn't good for the for the company culture and the coherence among employees and the communication between employees that we wanted to reach. So that's why we... we almost did it a few times, I think it could just have happened that we ended up there.” (Company 2)

“I am absolutely not in favor of splitting up our office between separate locations, because you lose control. You have to work with very strict deadlines and deliverables if you do that. The problem is that our work is simply too complicated to communicate in such a way.” (Company 6, our translation)

Sharing one office space between different departments is not always favorable, however. Sometimes, tensions arise between developers and other employees because of their different work ethics; developers are said to need silence to focus, whereas sales and customer care employees need to be able to make calls and hold meetings. Thus, in some cases, our interviewees mentioned it is preferable to have some options to separate different departments without moving them to separate locations, for instance by having a split level office space or by having multiple offices within the same building. Because of fixed contracts or simply because of a lack of space to expand, this is not always possible, however. Moreover, this issue is especially difficult to overcome in co-working spaces.
“[...] On the one hand we have developers and they really need to be focused and to be able to zone out. If you take them out of their “zone”, it takes like 20 minutes for them to focus again. On the other hand, we have sales people, and they are loud. They want stuff to happen in the office. Therefore, we are thinking on how to separate them a little more.” (Company 7, our translation)

“You can imagine, if you focus on a page of code and some guys are having a conversation two meters away from you it’s really distracting. So for developers, silence is important. The sales and customer support teams actually have quite a different set of criteria because they’re on the phone and the acoustics need to be really good. Otherwise you end up with this competition to talk louder. At a co-working space, there is no acoustic treatment and not a lot of meeting rooms available” (Company 1)

4.5.2 Neighbourhood selection

Accessibility and centrality are mentioned as relevant attributes of a neighbourhood. In general, most interviewees mention nearness to public transport hubs and bike distances.

“We wanted something a bit central in Amsterdam so that our people regardless of where you live and Amsterdam you can get there and quickly.” (Company 2)

“I think for people that visit us it’s (the city centre) easy to reach. Well not for cars but I think we’re not the biggest fans of cars so people come by train for example. Then, from Center station you are here quite fast or from Amstel Station, or by bike, or wherever you come from. So I think that’s also important. (Company 5)

“In 2012 we moved to downtown Amsterdam with six people, we wanted to be back to the centre of town it was logistically not very easy to get to the Amstel park [office park in the East of Amsterdam]. And because people that we hired came from Utrecht and so on.” (Company 4)

The perception of centrality and accessibility is an intriguing one, however, not only set by “hard facts” (commuting times and ease/safety of travel), but also influenced by deeply ingrained local perceptions and narratives about what is central and what is far away. Areas outside the central ringroad (Riekerpolder, Amstel Park office park for instance) are considered peripheral, even though they can be relatively easily accessible by bike or public transport and tend to have better car accessibility than downtown locations.

More in general, the dominant narrative about the area is an important location factor. Key words in such narratives, besides “centrality”, are “thriving”, “vibrancy”, “diverse”, “cool”, “upcoming”, “alternative” or “real Amsterdam”. Such terms are also used to assess potential areas that scale-ups consider to relocate towards. Many scale-ups do not want to move to the Zuid-As business district for instance, because of its’ association with the corporate and financial world and its’ perceived lack of vibe. Furthermore, these associations with place are projected onto people and the general working climates they inhabit. Our respondents associate their employees with the open, informal and non-corporate working environment they create, which fits with a more urban and cultural
environment. According to our respondents, their employees would not appreciate the corporate culture that workers in the financial world favor:

“[...] T hey shouldn’t be in between suits, they should be able to be themselves. Some of our employees want to come to the office in kilts, some want to wear suits. They just want to be themselves, and they can’t do that on the Zuid-As” (Company 6)

“[...] T he Zuid-As was never a consideration because that’s exactly the type of person that we don’t...; or the type of image of bankers and stuff. That’s not what we want to be, you want to be in a creative area.” (Company 4)

Thus, the areas considered have distinct imaginaries in the eyes of our interviewees. As said, the Zuid-As district is clearly considered a high-brow area for financial or law firms and related business. It is modern, accessible (car and transit) and near the city centre, especially after the opening of the new north-south metro line. The areas of Noord and Houthavens, a bit further out from the centre, are seen as upcoming urban areas, a bit alternative and less “business-like”, attractive for creative industries (despite drawbacks in terms of transit). These former port areas are being redeveloped during the last decade as mixed urban zones, offering housing, office spaces and increasingly also amenities. The city centre and adjacent gentrified districts (Jordaan, Pijp, Rivierenbuurt, parts of Oost) are more described in terms such as central, dense, diverse, urban, thriving, and “real Amsterdam” in terms of urban design and architecture. Most of the firms we interviewed were located here. For them, being part of the internationally known Amsterdam imaginary helps to attract international staff and adds to their image and self-esteem. The excerpt below is representative of the answers of many of our interviewees when we asked why they wanted to locate in the city centre:

“I think the whole vibe is really nice. I mean if you, uh, if you also have people coming over, they always say what a really nice location. I mean you feel it as well, I mean you’re in the city center. So you are like in the middle of the whole service that we’re providing.” (Company 5)

We also found some exceptions; two of the three largest companies (4, 7) we visited were located the furthest away from the city centre and, in part, they claim that their company name is well-known in their respective sector and can therefore attract talent, regardless of the company’s location in Amsterdam.

“Our company is simply attractive enough to come to, and if people don’t like to commute, we always have other options. I don’t believe in scarcity in that way. [...] We almost think in months, we will hire 50 new people in the coming quarterly! We mostly need flexibility and enough desks” (Company 7, our translation)

“Up until today we haven’t had any problem with finding and keeping good people. Never. We believe it is because of two main reasons. One is we’re in gaming. That’s super cool. And we’re relatively visible because we do so much content marketing so our name in a niche is relatively
famous. The second reason is Amsterdam has only increased in popularity so you know half of the people that we hire now actually migrate to Amsterdam.” (Company 4)

So, although the attractiveness of the Amsterdam city region still matters, the company name, quality and size (for potential growth) of the office space and overall vibe on a building level seem to matter more than the premises’ specific geographical location. More importantly, when the company is gaining momentum, being part of the Amsterdam imaginary is considered to be less important for hiring more staff. This brings more depth to our finding chapter 3, where we showed that companies with a larger workforce tend to spread more throughout the city.

How important is centrality then? Further away from the centre, Amsterdam has a variety of mono-functional business areas, dating from the 1970s and 1980s; these tend to be the least popular for tech scale-ups. Densities here are much lower, the quality of the architecture is poor, there are typically few amenities, accessibility by public transport is lower, and they more generally lack an “urban feel”. An interesting exception is Riekerpolder, a low-density business area that defies all the pull factors mentioned above: it is located outside the city centre; transit access is problematic (the nearest metrostop is at an unattractive 10 minute walk); there are hardly any bars or restaurants in the area; the architecture is poor, and the area’s urban design is rather non-descript and lacks any “Amsterdam feeling”. Some interviewees, especially those located in the city centre, think of the Riekerpolder area as remote and question its’ accessibility or even perceive the area as unsafe.

“Yeah we didn’t consider B.Amsterdam because it’s quite far away. So it’s definitely cheaper and it’s a good standard of space. But there’s nothing around there. And so it’s very difficult to encourage people to want to go and work in one of those offices.” (Company 1)

“We will never move to the B.Amsterdam area, not even if it will look amazing. The area severely lacks accessibility and I do not feel good when my female employees go home when it’s dark outside.” (Company 6, our translation)

During the years of the economic crisis, developers transformed a large vacant office building (it was abandoned by IBM) into “B-Amsterdam”, a hub for start-ups and scaleups, including bars, restaurants and meeting facilities. The concept can be considered as a “city within a building” where the internal diversity and buzz compensates for the poor urban quality and diversity of the neighbourhood. Scale-ups located in the area generally question the attitudes some have towards the Riekerpolder and B.Amsterdam.

“B.Amsterdam really did well in creating a campus feeling. Lunch is fine. And we have a lot of flexibility, because we have a big office. We have drinks in our office or we go downstairs to B.Amsterdam’s in-house bar. There is enough to do in-house” (Company 7)

After the first building was rented out, B.Amsterdam acquired another building next to it, and developed it in a similar fashion. The scale-ups that located here praise the qualities of the B.Amsterdam concept, and appreciate the fact that there is room for growth at an acceptable price. Moreover, B.Amsterdam offers a lot of flexibility in scaling up or down.
“We were able to make a good deal. We can grow very easily but we can also downsize in office space if it is really necessary, we can give space back to B.Amsterdam. B.Amsterdam may also move other users if you can show that you have great growth potential.” (Company 7)

Although acknowledging that the area’s accessibility can pose a problem, they also question the presumed “remoteness” of the area: the city centre is within easy reach by bike, and accessibility from outside Amsterdam is good as well.

“It’s the commuting that’s not really nice for some, especially not by public transport. [...] We do have a lot of people that are just very used to taking the bike and to be on their way for a while. When going for a drink, they just bike to the city centre.” (Company 7)

In seeing how an area like B.Amsterdam has become quite popular with the start- and scale-up community, one can question to which extent neighbourhood amenities matter? Firms at B.Amsterdam consider the in-house amenities largely sufficient, or do not find it problematic to improvise by ordering take-out or biking for some time to more vibrant areas. Several firms we interviewed –especially the ones in downtown areas- specifically praise their neighbourhood for the presence of bars, restaurants, and a dynamic and buzzing street life, however. Yet, paradoxically, they have very few interactions with the neighbourhood, making little use of next-door amenities such as bars and restaurants (most have lunches and drinks in-house). This suggests that diversity and amenities are part of an attractive urban narrative rather than material assets on which firms depend.

“[...] I definitely think that we’re here because there is stuff around. Our people used to walk from the Telegraaf office in Sloterdijk through small tunnels and alongside high buildings through the wind to Sloterdijk station everyday [...]. Then we moved into the center and now they’re walking here in the streets and there’s things going on and places to have lunch or to go out after work. Our designer literally said he used to get so depressed by being in the Sloterdijk area everyday. And then in reality, I wouldn’t say that we go out to bars or have lunch so often. It’s just nice the option is there, in some place down the street.” (Company 2)

“Developers are mainly motivated by the culture around their work, not so much money. So it’s a very it’s quite an intangible criteria really because it’s quite hard to say this is suitable and this is not. It’s more like if there is a lot of stuff around, it’s good. For example Sloterdijk would be a lot more popular if there were more amenities like cafes and restaurants nearby. But there is not and that is reflected in the price of the real estate in that area as well.” (Company 1)

The literature on innovation ecosystems (discussed in chapter 2) explains area-based clustering of similar firms from the advantages of localised knowledge spill-overs and interfirm collaboration. Our study suggests however that colocation with other scaleups is not relevant (leaving medical and biotech firms aside) from a business perspective. In their rapid growth stage, firms are concentrated on internal innovation and expansion, and tend not to have frequent contacts or networks with neighbouring firms to co-develop or co-innovate. Also we have no indications for knowledge spillovers via staff that change jobs within the same urban area: spillovers based on job-hopping play
out on the metropolitan rather than the neighbourhood level. This suggests that we need a different explanation for the fact that similar firms cluster in particular areas. Probably the image and reputation of the area is more important than the actual presence of possible network partners.

"Yeah, especially when you’re growing, the location and how your office looks is a key asset in attracting people. You know, when people that want a job here walk in the same area as the red light district, you’re in the middle of everything. [...] These are highly talented people that know they can always find a job. They just need to have something extra to be contracted." (Company 4)

More broadly, it can therefore be said that the image, look and feel of the area should resonate with the collective identity or image of the scale-up, mainly because companies consider the dominant narrative about the urban neighbourhood a key factor in attracting, retaining and catering towards (international) skilled staff. Moreover, it should represent the imaginary of creativity and urban vibe, for which Amsterdam’s city centre is seen as an internationally well-known symbol. Working in a cool urban environment is thus a status-enhancing feature for owners/founders and for employees. Being there is a sign of success.
<table>
<thead>
<tr>
<th>Company (no.)</th>
<th>Year, Location</th>
<th>Origin</th>
<th>Relocation 1</th>
<th>Relocation 2</th>
<th>Relocation 3</th>
<th>Relocation 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catopedia (1)</td>
<td>2008, Assen</td>
<td></td>
<td>2016, WeWork Weesperstraat, Amsterdam. HeadQuarters in Assen</td>
<td>2018, next to WeWork Weesperstraat, Amsterdam. HeadQuarters in Assen</td>
<td></td>
<td></td>
</tr>
<tr>
<td># employees</td>
<td>2</td>
<td>-&gt; 200</td>
<td>200 -&gt; 230 in Amsterdam, 100 in Assen, 200 home office staff</td>
<td></td>
<td></td>
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<tr>
<td>Pole Jump (2)</td>
<td>2013, Utrecht</td>
<td></td>
<td>2014, Basisweg, Sloterdijk, Amsterdam</td>
<td>2016, Nieuwezijds Voorburgwal, Centre of Amsterdam</td>
<td>2018, Vijzelgracht, Centre of Amsterdam</td>
<td></td>
</tr>
<tr>
<td>Rationale</td>
<td>Accessibility. Two of the founders lived in Utrecht. <strong>Cheap</strong>: Founder had extra office space that could be used during evenings.</td>
<td>Need for Independent office space. Moved into empty building of Persgroep Nederland. <strong>Cheap</strong>, part of an incubator,</td>
<td>Move after major investment. <strong>Accessibility</strong> for all employees. <strong>Vibe</strong> needed to attract and retain talent. Sloterdijk area felt too remote.</td>
<td>Need for larger office space due to growth. <strong>One</strong> large office space, no separate rooms. <strong>Vibe</strong> to attract and retain talent. <strong>Accessibility</strong>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td># employees</td>
<td>4</td>
<td>4 -&gt; 6</td>
<td>6 -&gt; 8</td>
<td>8 -&gt; 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ImpactIQ (3)</td>
<td>January 2018, WeWork Weesperstraat, Amsterdam</td>
<td>May/June 2018, MindSpace, Centre of Amsterdam</td>
<td>To be determined, in Amsterdam</td>
<td></td>
<td></td>
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<tr>
<td>Rationale</td>
<td>Flexibility. Nice surroundings</td>
<td>Their own place to grow own business.</td>
<td>More lean. Suitable for a scale up.</td>
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<td></td>
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<tr>
<td># employees</td>
<td>6</td>
<td>6 -&gt; 17</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AnimalPlay (4)</td>
<td>Year, Location</td>
<td>2007, Binnen Oranjstraat, Jordaan, Amsterdam</td>
<td>2010, Johan Gesinkweg, Amstel Park, Amsterdam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rationale</td>
<td>Cheap: In back of the building one of the founders owned.</td>
<td>Investor wanted to be close to his investment. Cheap, he was easy on rent.</td>
<td>Accessibility. New hires came from all over The Netherlands. Amstel Park was too far from public transport and did not represent Amsterdam.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># employees</td>
<td>2 -&gt; 4</td>
<td>4 -&gt; 6</td>
<td>6 -&gt; 8</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Phenix (5)</td>
<td>Year, Location</td>
<td>2016, Amsterdam (work from home)</td>
<td>2017, Centre of Amsterdam</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Rationale</td>
<td>Founders set up the company besides daytime job. Website/Service went live. Need to hire interns. Proximity to the scooters / user product.</td>
<td>Accessibility: employees live in A’dam. Vibe to attract hires.</td>
<td>Accessibility and more office space.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># employees</td>
<td>2</td>
<td>2 -&gt; 5</td>
<td>5 -&gt; 88</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year, Location</td>
<td>Rationale</td>
<td># employees</td>
<td>Rationale</td>
<td># employees</td>
<td></td>
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<tr>
<td>FinWise (6)</td>
<td>2011, Rigakade, Houthavens</td>
<td>Part of Rockstart Incubator. Cheap office space and help in exchange for stocks in company.</td>
<td>2013, Hengeveldstraat, Utrecht</td>
<td>Need for very cheap office space to survive. Moved in to empty space at RTV Utrecht</td>
<td>2015, Stadhouderskade, Centre</td>
<td>Accessibility: employees lived in A'dam. Vibe to attract hires and investors. Cheap because of a good and lucky deal</td>
</tr>
<tr>
<td>WorkFlex (7)</td>
<td>2015, Weteringschans, Centre</td>
<td>Starting out with 1 desk in co-working space WeWork. Cheap and assumed to be flexible. Also good for networking.</td>
<td>Summer 2016, Sarphatistraat, Oost</td>
<td>WeWork couldn't keep up with growth. More desks were needed. Move to Cheap and big anti-squatting office space.</td>
<td>Autumn 2016, John M. Keynesplein</td>
<td>Kicked out of squat. Moved out of necessity to B.Amsterdam because of good stories heard and because building 2 opened. Flexible and easy access to office space. Cheap</td>
</tr>
</tbody>
</table>
Chapter 5: Conclusions and policy recommendations

Amsterdam’s tech sector has grown substantially during the past few decades. The sector is a key generator of high-level employment and plays an increasingly significant role in Amsterdam’s imaginary as tech and innovation hub. In this study, we analysed the growth patterns and spatial preferences of scale-ups, a key segment of the tech sector. Scale-ups are fast-growing tech firms that passed the start-up phase but have not yet developed into corporates. To understand the growth of scale-ups and their spatial needs, our study aimed to map the location patterns of these firms and uncover their locational decision making process during the process of growth. We conducted a literature study, a quantitative analysis (based on data from Dealroom), complemented by face-to-face interviews.

In general, we find that the Amsterdam city region ecosystem does well at developing, attracting and retaining tech scale-up companies. The city represents a thriving entrepreneurship ecosystem that offers a large pool of experienced tech talent (technical and managerial), but also offers dense networks, entrepreneurship related events, co-working spaces, investors, and incubators, that together constitute a cradle for new startups (some of which later become scale-ups). We found that such support networks are imperative for their early successes and therefore a prerequisite for sustainable growth. Furthermore, the presence of Schiphol airport and a well-functioning public transport infrastructure—offering international and domestic accessibility—are seen as key features in Amsterdam’s success as an international tech hub.

In Amsterdam, many locally-born startups have made it to a scale-up and some of them might grow into the next scalers such as Adyen or Booking. But also, our study suggests that the city attracts fast-growing tech firms from other Dutch cities and even abroad, that consider the Amsterdam ecosystem as a better growth environment than the town in which they started.

One of the key challenges for scale-ups is the attraction and retention of experienced and skilled workers (good developers and programmers are scarce), especially after new funding rounds, when external investors expect rapid growth. Firms go at great lengths to recruit tech talent nationally and increasingly internationally (often via personal networks), or poach staff from each other. Larger well-known companies like Booking.com and Adyen have been hiring substantially in recent years, creating a growing local talent pool from which smaller scale-ups also benefit. Attracting talent is one challenge, retaining them is another. Generally speaking, international tech recruits are not known for their loyalty; those who chose to relocate abroad for work, do not hesitate to move to other well-known tech ecosystems like that of Berlin or London, to broaden their career perspectives.

Overall, our study suggests that Amsterdam is considered an attractive place for tech talent. Wages are lower than in A-class tech hubs such as London or Silicon Valley, but this is compensated for in quality of life: the city is seen as attractive place to work and live in. In this light, emerging housing shortages—especially affordable housing—are increasingly seen as a problem: it is difficult to find adequate housing for new recruits. Larger and even smaller companies sometimes buy or rent houses for them, or are seriously considering to do so in order to keep expanding. Many scale-up
companies cannot afford to pay top-salaries and consequently, their staff has trouble to find affordable housing near work, ending up to find a residence (far) outside Amsterdam.

What are spatial location patterns of scaleups? Looking at the choices for specific locations we found that scale-ups predominantly cluster within the city ring area, and we did not find strong sector specific clustering patterns. Nor did we find any indication that firms take the benefits of knowledge spillovers and interfirm collaborations into account when making locational decisions. For many scale ups, the image of the area in which their office is located is a key asset in attracting and retaining talent. Most of our respondents draw upon the imaginary in explaining their location decision making, deeming some places as more appropriate to locate in than others. For them and their workers, the city centre and its adjacent neighbourhoods represent the “real Amsterdam” imaginary; it is the place where it all happens, which is “cool” and has “vibe” and which represents the artistic image most scale-up companies create for themselves and their workers. Areas outside the city ring, especially the Zuidas, and to a lesser extent the “upcoming” Riekerpolder and Houthavens areas, are generally not seen as fitting that image and are perceived as remote, even though they offer better car accessibility, are located closer to more affordable residential areas and offer more flexible and higher quality office space.

5.1 Implications for city planning
Our study suggests that the growth of the tech sector is concentrated in the city centre and its immediate surroundings. The current lure of this area as a location for successful scale-ups coincides with an ongoing growth of tourism there, and a strong demand for up-market housing, further driving up the cost and availability of space. This reduces the diversity in the city ring, and endangers the preservation of leisure, retail and residential amenities like daycare centres and schools. This raises the important policy question: to what extent would scale-ups be inclined to locate outside these areas?

We found that the office location of scale-ups is an important factor in talent attraction: being located in a dynamic part of the “real Amsterdam” helps to lure talent, which is the ultimate scarce resource. In this connection, one might expect that that the ongoing touristification of the inner city may create an alternative narrative about what the “real Amsterdam” is. The centre and its surrounding areas may increasingly be seen as fake or touristic, playing into the hands of “next” upcoming areas. In our study, we see three types of areas outside the centre that have started to attract tech scale-ups.

First, there are the areas of Houthavens and Noord, that can be seen as the emerging next extensions of the city centre; they lack the historical 17th century buildings, but are increasingly popular among scaleups thanks to their urban vibe and density, accessibility and closeness to the city centre. These areas have a great potential to absorb more scale ups, if there is sufficient supply of flexible office space; also, the areas would need to improve somewhat in terms of accessibility (especially transit) and amenities, and it could help to brand/label them stronger as tech locations.

Second, further from the centre, there are some low-density mono functional office locations such as Riekerpolder and Zuidoost, that have managed to attract scale-ups in recent years. In Riekerpolder (south-west of the centre), a mini-cluster has emerged from the premises of B-Amsterdam. This is
remarkable given the area’s low density and lack of urban character, as well as its deficiencies in urban transit accessibility. Somehow, these shortcomings are compensated for by the quality of the B-Amsterdam premises, the lower rental prices and the factual low distance from the city centre or the Zuidas, as well as its good car accessibility. A growing number of companies seem to appreciate the area, but to make it a sizeable tech spot, substantial additional efforts are needed according to our interviewees. Viable options are investments in accessibility through innovative mobility solutions; the provision of cheap housing for tech talent; the organisation of pop-up activities (festivals, sport tournaments etc.) to enhance social cohesion; or an overall densification of the area. Moreover, a stronger branding effort could sustain its growth. These efforts require a concerted action from existing players in the area and the municipality; curation would be needed to develop a local vibe that is not naturally present in such areas but is important for areas to attract tech startups and scale-ups.

Third, from our quantitative analysis in chapter 3, we observe the emergence of specialised clusters of biotech/medical scale-ups round the medical university campuses and perhaps at the Amsterdam Science Park. We did not explore this further, but it is worth considering to study systematically to what extent such traditional campus areas –starting with the AMC area, Zuidas Kenniskwartier and Amsterdam Science Park- can be developed into specialised tech hubs, what and what concerted policy actions would be required to market them a key and visible part of Amsterdam’s knowledge economy.

Overall, based on findings, we suggest three more actions:

First, the London case –discussed in chapter 2- suggests that city branding may help to put the city even more firmly on the map as international tech hub. A viable branding concept may help to attract new investments, but, if designed properly, can also help to spread the location of new tech firms more evenly in the city. A takeaway from London is that the branding must be supported by the tech community rather than being imposed by the city administration.

Second, to address the scarcity of talent in the city and the region, it is worth exploring to open tech talent hubs in other places in the Netherlands (the Twente region was mentioned by one scale-up), where talent is more abundant and there is less competition. From there, employees could work for Amsterdam-based scale-ups without having to move to the capital region. This would release the pressure on the capital, spur the growth potential of more peripheral regions, and perhaps help scale-ups in their recruitment headaches. This idea needs further research and exploration.

Third, again related to recruitment, the Amsterdam region lacks a unified, central platform for tech talent where supply and demand meet; Some scaleups indicated that it would help to have such a platform, as currently they rely on a confusing a multitude of boards and channels. The Eindhoven region may serve as example: it created a common platform for international tech talent in the region.
Literature


Reese, L. (2012) 'Creative Class or Proactive Class: Implications for Local Economic Development Policy'. In: Theoretical and Empirical Research in Urban Management 7(1). pp. 5-26