Beyond Roads and Railways

The emergence of Value-Add strategies in infrastructure

Alicia Ohlsson & Filippa Larsson Nathhorst

Master Thesis in Finance
Stockholm School of Economics

2022

Beyond Roads and Railways - the Emergence of Value-Add strategies in infrastructure private equity

ABSTRACT

This thesis analyses the development of the financial infrastructure sector, as well as the underlying characteristics of infrastructure investments made by private funds. This is made through a business case, with the purpose of studying a niche sector within private capital where limited previous research exists. We study the company Tampnet, through its journey from being corporately owned, to being owned by three different private funds. We study the differences in infrastructure characteristics in the given time, as well as the differences in ownership. We find that there seems to be a natural shift in infrastructure, where assets are travelling from being riskier to less risky once it matures. Thanks to this, several funds investing in riskier assets can benefit from multiple expansion on the assets, in line with theory on the cost of capital. Furthermore, we find that the infrastructure industry has developed heavily in the last couple of years, extending the definition of an infrastructure asset.

Keywords: Private Equity, Infrastructure, Alternative Investment, Value-Add. EQT, Tampnet

Supervisor: Per Strömberg, Professor of Finance and Private Equity, Department of Finance at the Stockholm School of Economics

---

We are thankful for our tutor Per Strömberg for the support and guidance throughout the process of writing this thesis. We would also like to thank the people that made this case study possible by participating in our interviews; Daniel Perez, Timo Kairi, Erik Borgen, Stefan Glevén, Oscar Tylegård, Carl Sjölund, Gordon Bajnai, Per-Helge Svensson, and Parham Abuhamzeh.

24159@student.hhs.se

24268@student.hhs.se

1. Introduction

1.1. Background

This case will compare and discuss the differences between traditional Private Equity ("PE") funds and their investments with private infrastructure funds' investments. The case will study EQT Infrastructure and their transaction and ownership of Tampnet to identify specific characteristics of alternative investments. The case will also cover the development and growth of infrastructure investments as the PE market has grown significantly and become more niche. Further, the case will study the unique aspect of Tampnet's change of ownership over time, initially being an asset of a bankrupt company to a spin-off from Statoil before it was acquired by the energy-focused PE company HitecVision. By 2013, the EQT Infrastructure Value-Add fund had acquired Tampnet, and after five years of control, the asset was divested to 3i and ATP (the Danish pension fund). This case will be based on interviews with relevant people involved in the transaction, as well as investment research materials provided by EQT.

1.2. Purpose

The purpose of this study is to broaden the knowledge of alternative investments within PE, in terms of investment rationale and decision-making, both from a General Partner ("GP") and Limited Partner ("LP") perspective. In parallel with the overarching growth of the PE industry, the market has seen increasingly niche players with narrower investment themes. Therefore, it is interesting to understand how these funds differentiate themselves from broader investors. This study is focused on the infrastructure niche, a niche within PE that has significantly grown in the latest decade from an AUM of $59 billion in 2008 to $486 billion in 2019 (Andonov, Kräussl, and Rauh, 2021).

1.3. Method

The topics will be examined through examples and parables of Tampnet and its previous and current investors. To incorporate and highlight a diverse set of perspectives from several stakeholders, research is conducted based on the investment team of the EQT infrastructure fund, the Investment Committee Material provided by EQT, as well as representatives at advisory firms to EQT, former CEO of Tampnet, and a representative from the current owner of Tampnet, 3i (see summary in the table below).

Date	Interviewee	Professional role
2022-09-12	Timo Kairi	Partner, Bain & Company
2022-09-15	Erik Borgen	Partner, RoundFort Capital
2022-09-19	Stefan Glevén	Former partner and founder of EQT Infra
2022-09-20	Oscar Tylegård	Director, 3i
2022-09-21	Carl Sjölund	Partner, EQT
2022-09-21	Gordon Bajnai	Partner and Global Head of Infrastructure, Campbell Lutyens
2022-09-22	Per-Helge Svensson	Previous CEO of Tampnet
2022-09-23	Daniel Perez	Partner, EQT
2022-09-23	Parham Abuhamzeh	Director, EQT

The study was conducted with the following research questions:

i. What characterises and differentiates an infrastructure investment from a traditional PE investment?
ii. What characterises an infrastructure fund as an owner, compared to other strategic and financial owners?
iii. How have infrastructure funds developed over time, and why?

1.4. Results

This study highlights some important characteristics of infrastructure assets that differentiate them from traditional PE-targeted companies. Although several investment criteria are mentioned in this study, and firms communicate them differently, it often boils down to infrastructure assets' underlying low-risk and inflation-protected properties. Further, it is difficult to identify and isolate precisely what characterises an infrastructure asset from other assets and how these characteristics will change with the industry. This is found in the case of EQT Infrastructure and its investment in Tampnet; although it is clear afterwards that Tampnet was an infrastructure asset, it was not that clear upon entry. Since the infrastructure market and its asset characteristics have changed during the last decade, we propose that EQT and other early Value-Add infrastructure investors might have successfully benefited from de-risking of assets, i.e., acquiring riskier assets with less clear infrastructure focus, and developing them to more classical infrastructure assets. By doing this, theory suggests that the cost of capital should go down, leading valuations to go up, indicating Value-Add investors to be able to gain

multiple expansions on their investments. We suggest that this seems to be a significant part of the industry, where some assets naturally move from PE investors to low-risk infrastructure investors when maturing, if they are able to gain some of the infrastructure characteristics.

Regarding the edge of infrastructure investors, it is less clear what differentiates them from regular PE funds. Industry knowledge is considered a key contributor, but even more emphasised as a recipe for success is the fit and collaboration between owners and management. Such relationships are likely not directly linked to the focus of the investment firm but rather related to the culture at the fund, which could vary a lot across different investment firms. Further, it differs across the various infrastructure segments (Core, Core+, Value-Add, and Growth/Opportunistic), since the engineering of the assets is different across the strategies. While Core infrastructure investors are focused on the least risky assets, generating yield, and often held over a longer period, Value-Add and Growth/Opportunistic investors are more similar to traditional PE investors, with much focus on engineering (operational, financial, and governance). Further, those funds are typically structured similarly to regular PE funds regarding timeline and other fund characteristics.

The industry's evolution is substantial, and with infrastructure being a relatively new asset class to financial investors, it seems like it has not yet reached a steady state. The development of infrastructure criterion is still undergoing, and there is no universal way to structure infrastructure funds yet in contrast with the PE industry, where the set-up is more standardised.

1.5. Further research

Although this study identifies several implications, readers should be aware that the conclusions made should be carefully used as a basis for general knowledge within private investments in infrastructure. Even if the research has aimed to incorporate general observations and reflections, it is essential to acknowledge the limitations connected to a case study, as the material, in this case, is to a large extent linked to EQT's investment philosophy, the transaction and ownership of Tampnet, as well as the individual perspectives of the interviewed parties.

Further research covering the same topics discussed in this study is suggested to build a more comprehensive picture, considering the limited implications of a stand-alone case study. In addition, as the infrastructure landscape of private capital is still nascent, the topic is relatively unexplored.

Suggested studies could attempt to cover the same questions through the lens of other investment houses. Alternatively, one could study EQT's operations in different geographical areas or point in time to explore how these questions vary globally and have developed historically. Future research could investigate the de-risking strategy that EQT and other Value-Add investors have adopted, exploring what engineering explains the potential success of this strategy. Additionally, it would be interesting to conduct the study on a larger sample to draw statistically significant conclusions.

2. Literature review

2.1. Private Equity

PE, including buyout and venture capital transactions, is a critical component of modern finance. In July 2022, assets under management were USD 9.8 trillion, up from USD 7.4 trillion the year before, and in 2021, the global fundraising was USD 1.2 trillion, up from USD 96 billion in 2003 (Prequin, 2022). A simple definition of PE is a medium or long-term equity investment that is not publicly traded on an exchange (Cendrowski and Harry, 2012).

Morgan and Nasir (2021) identify three main components in a PE investment model. First, there are PE management firms, which are the initiating and controlling organisations or groups. These are called GPs and are the ones that manage the second component of the PE investment model: the PE Funds. The funds' investors are called LPs; through a Limited Liability Partnership ("LLP"), their capital is channelled into an investment entity. Often, there are also equity contributions from the management firm. The GP collects management fees from the LPs based on the committed capital. The proceeds from the investments are to be returned to the LPs, often in the form of a waterfall scheme, where the GP gets a share of the profit after delivering a hurdle rate[1].

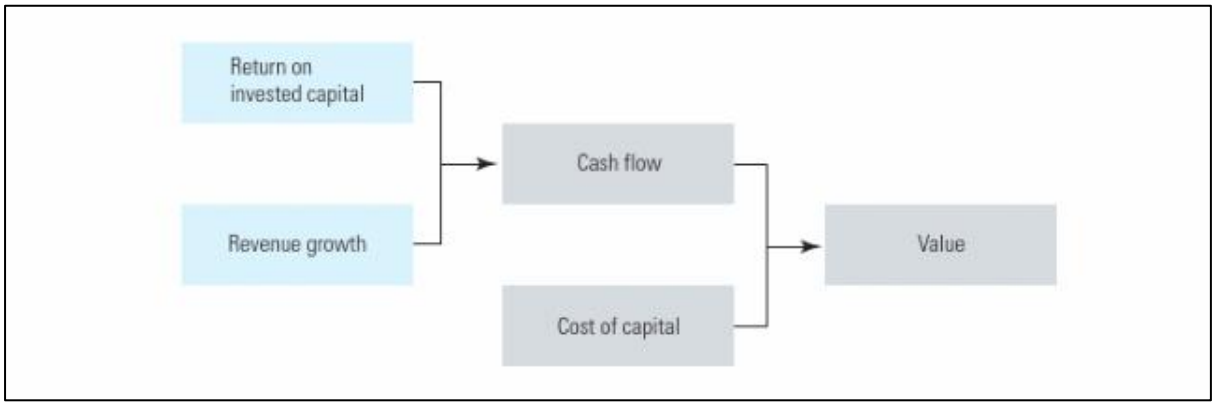
The GP seeks out companies or divisions of companies to acquire, by using equity from the fund and often debt, in a leveraged buyout (LBO). The use of debt lets the PE fund acquire more significant assets. When interest rates are lower than the hurdle rate, they can benefit from using debt over equity from the LP, since the LPs' required rate of return will be higher than the interest rate on debt. Each acquisition is typically held for three to seven years, and the company will then be sold to (1) a secondary buyout fund, (2) a trade sale or (3) via an initial public offering (Morgan and Nasir, 2021).

There are several techniques to value assets, and often, multiple methods are used, such as comparable companies (public and private), Discounted Cashflow model (DCF) and Leveraged Buyout ("LBO"). One of the most common ways of valuing an enterprise is the DCF, which discounts free cashflow, meaning the cashflow available to all investors (e.g., equity investors and debt holders). The discount rate used is the weighted average cost of capital, which is tied to the overall risk of the investment. Following this, the value of an asset

[1] Hurdle rate is a pre-defined minimum rate of return required. In PE, this rate is usually 8%.

with minimal risk will be high, since the cost of capital will be low, and in contrast, the value of a risky asset will be low (KOLLER et al., 2020).

Table 1 – Fundamental of Valuation



(McKinsey, & Company Inc., et al. Valuation : Measuring and Managing the Value of Companies, 2020)

2.2. The financialisaton of infrastructure

Historically, infrastructure has been regarded as a public matter, with the state playing a critical role in building and maintaining public goods and public institutions that often went beyond the capability and capacity of the private sector (O'Neil, 2013). However, O'Neil argues that infrastructure should neither be seen as public nor private; instead, it has its own characteristics. In recent years, the infrastructure sector has been considered to have become financialised[2], as the traditional structures have been transformed into financial assets. Today, a significant portion of the assets are privately owned – especially true for the telecommunications sector and, to a lesser extent, power generation, transmission, and storage. The least financialised assets include water, waste, and social infrastructure. However, private capital has begun to flow into these sectors as well. Privatisation is expected to continue as governments lack the means to finance and maintain publicly owned and operated infrastructure without burdening their budgets and raising taxes. Simultaneously, the low-interest rate environment in the 2010s has influenced investors to look for attractive, long-term, and low-risk investment opportunities, a profile and characteristic of many infrastructure assets (Staub-Bisang, Mirjam et al. 2016).

[2] Financialisaton is defined as the growing influence of capital markets, their intermediaries, and processes in contemporary economic and political life (Pike and Pollard, 2010)

Further, the relationship between the state, in its different shapes, and the private sector has widened and deepened with the emergence of infrastructure as a new asset class (O'Brien and Pike, 2017). Most western countries, as well as several emerging economies in Asia, the Middle East, and Eastern Europe, have implemented legislation to allow for possible private investments in the infrastructure sector. Consequently, PE investments in the industry have increased mainly in the last decade, with 707 active infrastructure funds in 2020 compared to 109 in 2010 (Preqin, 2020) (Inderst, 2010).

Reasons for the sector being attractive for private capital funds include the high barriers to entry and economies of scale. Further, the inelastic demand provides predictable cash flows, enabling higher financial leverage. This allows returns to be enhanced from a financial engineering perspective. (Ashton, Doussard and Weber, 2012) (Bayliss, Van Waeyenberge and Bowles 2022) Further, constrained governments are turning to the private sector for infrastructure investment, and institutional and private financial investors seek new diversified opportunities with risk and return profiles provided in line with infrastructure assets. (Inderst 2010, Bayliss, Van Waeyenberge and Bowles 2022, O'Neill 2019).

2.3. Definition and characteristics of infrastructure

The term "infrastructure" has seen various definitions suggested by governments, academia, dictionaries, and the financial community. One broad definition is provided by Jochimsen (1966), who describes infrastructure as follows:

> *The sum of all material, institutional and personal assets, facilities, and conditions available to an economy based on the division of labour and its individual economic units that contribute to realising the assimilation of factor remuneration, given an expedient allocation of resources. The term material infrastructure stands for the sum of all physical assets, equipment and facilities and the term institutional infrastructure points to the norms and rules, which develop and are set in a society over time; in addition, the term personal infrastructure is used to encompass the number and qualities of people in a market economy.*

The narrowest definition and understanding of the term can, on the contrary, be found in the financial industry, since the critical factor for an investor is not the specific sector or supply characteristics but its risk-return profile. Therefore, the financial industry has based its definition on economic and financial characteristics. (Staub-Bisang et al. 2016).

Essential public service – infrastructure assets daily meet key general requirements, such as the provision of water, energy, mobility, and communications.

Low elasticity of demand – owing to their fundamental functions, demand for infrastructure services is independent of industry cycles and economic performance, even when prices increase.

(Quasi-)monopoly situation with high barriers to enter the market – infrastructure assets are hard to duplicate due to their high upfront investment costs. After commissioning, the cost of providing each additional service/product unit is, on the other hand, shallow. This leads to high market entry barriers, which limits the competition.

Regulation – with a monopoly situation, the regulatory instances play an essential role. However, a regulated market does not eliminate risks in all cases.

Long service life – infrastructure assets have the durability of up to 100 years or more, with historical examples of significantly longer lives, such as the Roman aqueducts. In addition to the physical and technical life, investors factor the economic life into their assessment, which in many cases may be less than five years.

Inflation protection – The infrastructure assets may provide a natural hedge against inflation since revenue from the investments often combines inflation-adjusted mechanisms through clauses, guaranteed yields, or any other form of contractual assurances.

Regular, stable cash flows – Infrastructure assets that check all the above characteristics have stable, predictable, and, in most cases, inflation-protected long-term revenues that can survive economic downturns and cycles, supporting a significant credit burden

While having these characteristics in mind, these can only serve as indicators of the potential attractiveness of investments; not all beneficial infrastructure assets follow these criteria to the full extent. This leads to a broad investment spectrum; some infrastructure assets may have comparatively low risk, in some cases close to a bond, while other assets that do not possess all characteristics fully will have another risk profile and, therefore also other return requirements. The above definitions have led to the following mapping of the economic and social infrastructure (Staub-Bisang et al. 2016).

Table 2 – Mapping of Infrastructure assets

Economic Infrastructure				Social Infrastructure
Transport	**Energy**	**Water**	**Communication**	
Land • Roads • Rail networks • Public local transport	**Generation conventional** • Coal • Oil/gas • Nuclear **Renewable** • Solar • Wind • Water • Biomass • Geothermal **Transmission/Distribution** • Electricity • Gas • Oil/fuels **Storage** • Electricity • Gas • Oil/fuels **District Heating**	**Supply** • Domestic • Industrial **Sewerage** • Rainwater • Domestic wastewater • Industrial wastewater **Waste** • Domestic waste • Industrial waste	**Telecommunication** • Fixed networks • Mobile networks • High-speed internet • Towers (cell & broadcast) **Space** • Satellite network • Observation **Other services**	**Health** • Diagnostic • Therapy/treatment • Care • Rehabilitation • Elderly housing **Education/Culture** • Schools • Student housing (campus) • Libraries • Theatres • Museums **Sport** • Recreational • Professional **Public Administration** • Offices • E-government **Security** • Prisons • Police • Defence
Water • Inland waterways • Sea • Canals (e.g., Suez) • Ports				
Air • Airport services • Airline services • Air traffic control				
Multimodal • Inland terminals (road/rail-freight) • Cruise terminals				

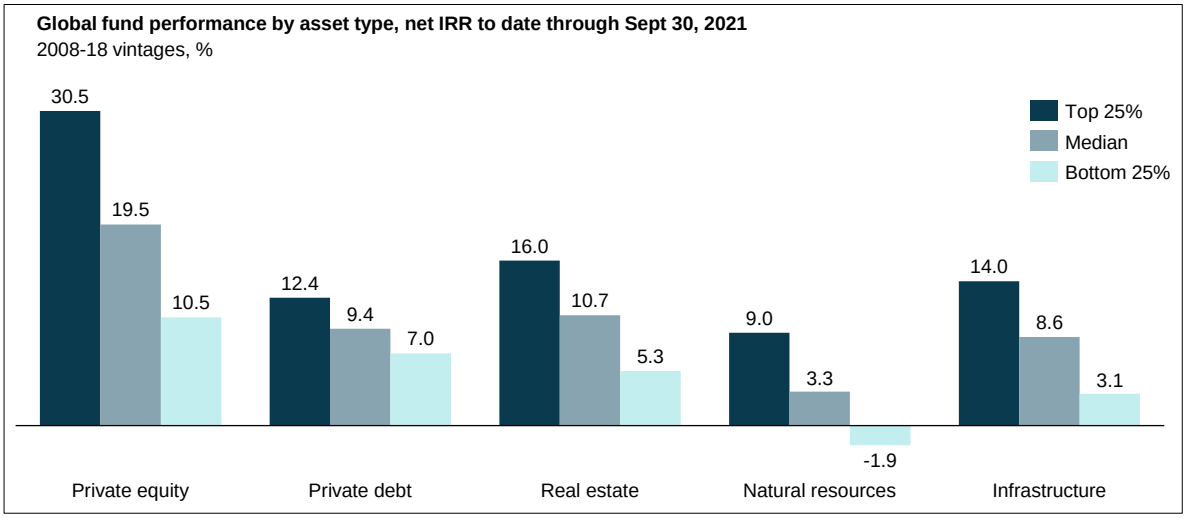
Staub-Bisang et al. 2016

The general appeal of infrastructure funds includes advantageous characteristics for institutional investors, such as minimal risk and inflation protection (Staub-Bisang et al. 2016). However, given the target returns that some of the infrastructure funds have, it is questionable if such conservative assets can meet these. Andonov, Kräussl and Rauh (2021) show, using public data from Prequin and Burgiss, that the cash flows delivered by closed infrastructure funds, in fact have similar volatility and cyclicality as cash flows in other PE investments. Similar to PE investments, the performance instead depends on the extent investors can manage quick deal exits to benefit from capital gain, rather than creating high yields from improved operations over a long period. In the study, only VC funds appear to be riskier than infrastructure, while the returns of the buyout and real estate funds have similar dispersion to infrastructure funds.

Furthermore, Andonov, Kräussl and Rauh find that public investors, on average, are doing worse than private institutional investors, even after controlling for underlying deal characteristics. The evidence that private investors perform better in infrastructure at present, when this asset class is still young and growing, is similar to the evidence that private investors made superior performance in the 1990s in VC investments, before the maturation of the industry (Sensoy, Wang and Weisbach, 2014). One reason is the greater access to the top-performing funds, but also that the VC returns have changed significantly since the 1990s. Harris, Kaplan and Jenkinsson (2012) find that the average VC fund returns in the US outperformed public equities in the 1990s but underperformed public equities in the 2000s.

There has been limited academic research conducted on the returns of private infrastructure funds, which led us to analyse the industrial research made. McKinsey (2022) reports that the median net IRR for infrastructure funds with vintage (the year a fund began making investments) between 2008 to 2018 was 8.6%, compared to 19.5% for the PE assets.[3]

Table 3 - Global fund performance by asset type



McKinsey, 2022

However, the variety of risk profiles in investments defined as infrastructure is wide. Financial industry practitioners have historically argued that infrastructure assets have a lower risk. But the narrow infrastructure classification excludes a big part of the asset class. Combined with the significant inflow of capital mentioned above, investors are induced to invest in infrastructure sub-sectors with a more sophisticated and nuanced definition. One joint segmentation of the industry is ***Core***, ***Core+***, ***Value-Add*** and ***Growth/Opportunistic.*** The four infrastructure investment categories have different return profiles and holding periods defined by the underlying asset. Moving from core to opportunistic, the risk increases, and so should the expected return. Since there are limited academic studies made on the topic, industrial sources had to be used to define the different segments. Mercer (2020) describe the definitions as follows:

[3]Note: Figures may not sum precisely, because of rounding. Methodology: IRR spreads calculated for funds within vintage years separately and then averaged out. Median IRR was calculated by taking the average of the median IRR for funds within the vintage year.

Core is the most stable form of infrastructure, where most of the previous defined characteristics are fulfilled. They are the most essential to society and significantly de-risked, where revenue streams are similar to bonds in many ways. These assets have limited upside since their risk profile is constrained by the nature of the asset.

Core+ has fewer characteristics than Core. They have more fluctuation in their cash flows and are typically less monopolistic than core infrastructure.

Value-Add assets fulfil even fewer of the characteristics, and monopolistic industries are rarer. These assets offer more upside through, e.g., expansion possibilities. The holding time is typically shorter for these assets, and the returns are primarily generated by capital appreciation rather than ongoing yield.

Growth/Opportunistic infrastructure is the newest subsegment, including assets that typically have a high degree of risk, consequently, high return potential. These assets include but are not limited to assets under development and assets located in emerging markets and often subject to a high degree of commodity price exposure. Growth/Opportunistic infrastructure investments are most similar to PE investments.

Table 4 – Overview of infrastructure strategies

Categories	Asset Examples	Risk/Expected Return	Holding Period	Source of Return	Illustrative returns	Leverage
Core The most stable form, assets tend to be essential to a society, with monopolistic characteristics	Gas, electric, water/waste	↑	7+ years	Mostly income	↑	↑
Core+ Similar to core assets in most ways, the assets are less monopolistic, leading to more variability in cash flow	Contracted power, contracted oil/gas		↑	Income, some capital gain		
Value-add Less monolithic assets with growth potential, undergoing expansion or repositioning	Early-stage oil and gas, core/core+ assets undergoing expansion or repositioning		↓	Capital gain, some income		
Opportunistic Less monolithic assets with growth potential, undergoing expansion or repositioning	Assets in development/in emerging markets/in distress	↓	3-5 years	Capital gain	Similar to PE ↓	Similar to PE ↓

Mercer (2020), McKinsey (2022)

According to McKinsey (2022), infrastructure and natural resources funds in 2021 saw all-time high global fundraising reaching USD 137 billion, with the highest growth in Europe, which also stood for most of the funding raised. Deal volumes reached USD 446 billion the same year

and have grown 10.3% annually over the last decade. Furthermore, the returns for both infrastructure and natural resources funds improved considerably in 2021.

Some global macro trends supporting the inflow of private capital to these sectors are the increasing role of technology and the growing importance of sustainability. Furthermore, the McKinsey report state that due to the inflow of capital, infrastructure investors have been impelled to look beyond the traditional core infrastructure assets. Consequently, Core+ and Value-Add investments are becoming more popular to accommodate the return expectation.

2.4. Value creation in PE

2.4.1. Operational Engineering

Operational Engineering is defined as an operational improvement of a portfolio company by adding industry and operating expertise. Before the acquisition of a company, the expertise is applied to identify attractive investments and generate proprietary deals. In the due diligence phase, it is used to unfold the company's suitable value and develop a value creation plan. Finally, when the transaction is completed, it is used to implement the plan efficiently. Operational engineering includes reducing costs, productivity enhancements, strategic repositioning, M&A sourcing/ "buy-and-build" strategies and professionalising of management. The most common action is to accelerate growth. Lastly, various PE capabilities can come in handy in divesting companies. (Døskeland and Strömberg, 2018).

These capabilities are often acquired by hiring investment professionals with financial background in combination with employees with operational background and industry focus. This expertise is further strengthened through PE firms' network of advisors supporting in specific deals and strategic planning together with external advisors including management consultants, investment bankers, legal councils etc. (Schenkel and Strömberg, 2017)

2.4.2. Governance Engineering

Governance Engineering generates value through improved corporate governance and is feasible given PE investors own a control stale in their portfolio companies. It often includes incentives program for management and related significant individuals. These often result in equity that is more sensitive to firm value than the PE investor's stake created through financial contracts and equity tranches. (Døskeland and Strömberg, 2018)

In addition, PE owners not seldom rearrange the board by replacing directors with PE members and industry experts as well as reducing the size when acquiring public companies. It is also common to replace CFO since they are key persons in assisting the PE owners in its engineering and many CFOs of non-PE owned companies are more controller minded and less business minded. When the new board is appointed, they also tend to have more frequent interactions and meetings increasing the level of monitoring. (Døskeland and Strömberg, 2018).

To ensure successful implementation of its governance PE, firms also implement structured procedures and routines including taskforces to implement specific projects, detailed business plans and operational KPIs. (Døskeland and Strömberg, 2018). In combination with the lesser need for information sharing to the capital market Gertner and Kaplan (1996) conclude that PE boards are more efficient than public company boards. PE boards also outperform in terms of performance management, key stakeholder management, strategic leadership, and value-adding.

2.4.3. Financial Engineering

Financial Engineering is the value creation related to the capital structure that PE owners apply to their portfolio company. To finance the acquisition, PE firms usually uses debt including bank loans accompanied by unsecured financing with pay in kind interest and warrants. The level of leverage varies over the credit cycle (Axelson et al. 2013). Leverage creates value for the PE owner by lowering corporate taxes as interest is tax deductible, however, studies by Axelson et al. (2013) indicate that the benefit of tax deductions is priced into the acquisition and thus rather benefit the seller. On the other hand, there are benefits of debt acting as a discipline mechanism for the investor as it forces the portfolio company to deal with issues sooner with less cash on hand. Further the higher level of debt is associated with more efficient investment decisions (Jensen, 1988 and Jensen, 1989). The trade-off with leverage is the increased risk related to expensive financial distress, however PE backed firms can sustain higher leverage as the PE firms can complement with capital and beholds higher experience of handling financial distress. (Guo, Hotchkiss et al. 2016)

2.5. The development of infrastructure investment strategies

Financial and governance engineering were common by the late 1980s but are easier to copy and therefore commoditised. Consequently, the value creation related to them are to a greater extent reflected by the transaction price. Operational engineering capabilities are harder to copy

and is becoming a more important differentiator for PE firms as the market is becoming more mature and competitive. This shift in the PE market indicates that PE owners will likely become more involved in operations and drive value through adaptions (Døskeland and Strömberg 2018).

Today, most top PE firms are focused on specific industries and the last decade there has been a strong emerge of alternative investments for PE players, including infrastructure investments (Kaplan and Strömberg 2009).

In addition, the private capital market for infrastructure has matured over the last decade and the evolution demands investor to manage new types of risks, including technology risk and demand risk, to access the next generation of infrastructure assets. The transportation and logistics sector will change with the transition from combustion engines offering several opportunities including electric vehicle charging networks, battery storage, and hydrogen distribution. In the telecom sector the development of cloud technologies and the overall digitalisation trend has boosted demand for data centre and 5G distribution has accelerated. The characteristics of these assets matches the principles infrastructure PE investors look for with their protected market positions and stable cash yields generated from real assets. Nonetheless, the assets are also connected to a period of uncertainty related to need for upfront investments and negative cash flows alongside development-, technology- and commercial-risk. (McKinsey, 2022)

Furthermore, McKinsey states that infrastructure investors need to reconsider their investment approach. Historically investors have evaluated investments based on technical assessment and financial models, however, with new market dynamics and structural changes investors need to consider new factors to get a comprehensive picture e.g., environmental, politics and social aspects. McKinsey illustrates this with Motorway Service Areas (MSAs), traditionally analysed based on traffic projections, today being dependent on EV charging and thus diligence need to consider penetration of EV, battery development, charging technology, and grid capacity.

In addition, the continuously changing environment limits predictability and secured long term yields. Investors are therefore required to take on a more proactive approach to asset management by reassess risk/ return dynamics to ensure updated outlook of value drivers and trends view. In parallel, investors also need to manage strategic, operational, and digital

initiatives to ensure the asset is in line with the market fundamentals as well as functioning as a defence to inevitable recessions.

For investors to stay competitive it could be of interest to get exposure to emerging sectors before they mature, as it could create an edge when competition strengthens. To not get left behind when waiting for climate tech developers to scale, investors could take on more active investment strategies allowing them to form the evolving market. This includes sourcing proprietary deals through a comprehensive understanding of specific sectors rather than responding to competitive processes. However, investment in start-up companies might not suit the traditional infrastructure scope they could get exposure to undeveloped niche markets through integration and carve-outs. Employing bolt-on and roll-up strategies allow investments in sectors where larger companies have not been established yet. For funds with a stricter investment mandate, it is increasingly common that separate funds are set up targeting smaller ticket sizes and higher-risk companies. Ultimately, the purpose is to divest these assets to their infrastructure funds as they mature. In some cases, investors even employ a management team separately and build a business from scratch, backed by the fund. (McKinsey, 2022)

McKinsey argues that infrastructure remains an attractive asset for institutional stakeholders with longer investment horizon, despite potential downturns. However, they argue, to remain the placement of choice for the LPs, the infrastructure funds need to adapt their portfolios and investment policies to align with the industry development. Additionally, they need to push the boundaries of infrastructure investment, albeit adhering to the underlying characteristics associated with the asset class. (McKinsey, 2022)

3. Case study methodology

3.1. Empirical Methodology & Data Collection

The empirical method used to answer the three research questions is a case study on EQT Infrastructure Fund as well as their former portfolio company Tampnet.

Interviews were the primary source of data for this case study, alongside with investment research produced by EQT. People interviewed had different roles in the Tampnet transaction, including the investment team, employees of Tampnet, advisors and a capital placement agent. This provides the case study with several perspectives to get a comprehensive picture. All interviews were conducted using a template with a list of questions to make sure that all relevant topics were covered during the interview, however, all interviewees were encouraged to speak freely about the topic to make sure that no important information were missed. To deepen the analysis follow-ups were scheduled for clarification and deep-dives when deemed value-adding. Please refer to appendix 7.1 for an overview of the interviewees for the case study in this paper.

The interviews took place between September 12th and September 23rd, 2022, in different setups including both physical and non-physical meetings (Zoom and Microsoft Teams). The meetings lasted for 30 to 60 minutes. The interviews were recorded and transcribed to allow correct citing. The finalised case has also circulated to the interviewed with the case publication contingent on their approval to ensure legitimately portray of their story and opinions. This allows correction of potential mistakes possible due e.g., misinterpretations, parapraxis, or other human error. However, the paper's discussion and conclusion has not been possible to alter. This completed paper is a product of Alicia Ohlsson's and Filippa Larsson Nathhorst's evaluation, judgement, and conclusion.

The case study is conducted through the lens of EQT's former portfolio company Tampnet, currently owned by 3i Infrastructure and ATP.

To answer the first question, *What characterises and differentiates an Infrastructure investment from a PE investment?* an evaluation of ideal investment characteristics for different funds is made. The assessment is made using an assessment framework addressing topics such as micro and macro environment, the management of the firm, entry and exit of the deal, what engineering that can be done, and the edge of the PE fund. The research is based on interviews

with the investment team of EQT infrastructure, financial advisors at Arctic Securities, as well as Investment Committee Material. Question one focuses on how infrastructure investment professions assess potential investment compared to PE investment professions. It also highlights the differences in prioritised focuses.

The second question, *What characterises an Infrastructure PE Fund as an owner, compared to a traditional financial investor?* is answered by gathering data through interviews with investment professional from EQT and 3i, as well as a relevant employee from Tampnet. In addition, the material presented to the investment committee regarding this deal was used. The second question highlights different owner's toolkit and how it effects the portfolio company.

The last question, *How has infrastructure funds developed over time?* is based on interviews with both EQT, a management consultant at Bain and Company and a placement agent at Campbell Lutyens to understand how the market has evolved over time. Looking at what different funds has focused on historically and elaborating on what the future holds provided colour to the understanding of the direction of infrastructure funds.

3.2. Research Quality

This empirical method has both benefits and drawbacks, the critic to this method includes that the findings are not generalisable, that the information can be difficult to comprehend and that potential biases can influence the findings and the conclusions. (Yin, 2014) However, the benefits being a possibility to explore topics where data quality is lacking. Critics can be true, but also possible to avoid by making thorough preparation and documentations. Furthermore, scholars should not make causal conclusions from single cases although it is possible to make implication from many studies. (Yin, 2014)

To examine the legitimacy of the data, triangulation is applied by comparing research from uncorrelated sources (Yin, 2014). The main source of data was extracted from interviews with relevant actors involved in the transaction. The information gathered was compared with market statistics and theory discussed in previous literature. The evaluation show that there are many overlaps in the data sources and contradictions are further reviewed in the discussion in section 6.

Although striving to be fully objective and deliver a rigorous case study the findings can be biased from mainly two causes. First, the analysis could suffer subjectivity given the success

of the transaction considered and should therefore rather be used as material to learn from than a representative sample of the PE infrastructure population. Related to this, it is worth mentioning that PE firms are likely to not share information for case studies on below average deals. Readers should therefore combine the outcome of case studies like this with quantitative driven analysis to be able to draw conclusions on the general market.

4. The Case

4.1. Introduction

Tampnet, the leading offshore communication company was together with its current owners EQT, preparing for its next step. It was time for EQT to divest, and as they were entering the structured sales process, everyone hoped that interested buyers would recognise the de-risking that had taken place over the ownership period. Nonetheless, they wanted to highlight the remaining growth areas; if they managed to position the asset well, they could expect a multiple expansion from the lower risk profile, albeit receive a premium for the potential growth case. With a financial environment of exceptionally low cost of capital, the appetite for risk has consequently been high, and the concept of Value-Add infrastructure has been successful. The team at EQT now wondered if Tampnet still had the upside case required for a Value-Add infrastructure fund to make the required returns? Or did the expected price indicate that the asset belonged in the core sector of the infrastructure sphere? And how should investors value the operational risk taken, when the infrastructure sector is constantly changing, and the characteristics of an infrastructure investment today is different from a decade ago?

The balance of low volatility of the underlying infrastructure asset with mandate to take on additional operational risk to reach the return target have defined the investment strategy of EQT Infrastructure. According to the investment team, this strategy has successfully delivered high returns compared to the risk taken since the launch of the first fund in in 2008. In line with the EQT's entrepreneurial spirit and mission to future-proof companies, creating superior returns for its investors, the team had begun to think of its next strategic move. The million-dollar question was for how long the economic environment would persist. First, will the cost of capital eventually increase; and how would EQT infrastructure need to adapt its strategy consequently to sustain its risk premium? Second, will value-add investments, with higher operational risk, eventually develop into core infrastructure assets as the maintenance debt are refunded, and would EQT still be able to make profit from de-risking assets?

With these questions in mind the EQT team sat down evaluating its options and looked back at the last decade to reflect on what they had accomplished.

4.2. Infrastructure and Private Equity

The inflow of private capital in the infrastructure sector has been a trend since the mid-2000. Timo Kairi has worked at Bain since 1999, and specifically focused on the PE and

infrastructure segment, including tight collaboration with EQT during several of its infrastructure investments over the years. Kairi believes the phenomenon is a function of several things and while the concept of investing in infrastructure is not new, there has been a shift from public sector investing to specialised financial investors acquiring the assets. This shift, he means, originated in the aftermath of the second world war, when Europe struggled with many geographies and cities being obliterated by warfare. As a result of this, there was a massive building boom in the 1950s, building up infrastructure and at that point, Europe was complete in many ways; there were enough roads, there was drinking water and electricity for every home and well-functioning airports. After 30 years, when the infrastructure in fact needed additional investments in maintenance, governments quickly realised that by neglecting the maintenance need, they could save money as it was not as noticeable as cutting back on healthcare or the educational budget. By then, several private companies, sometimes partly owned by the states, entered the infrastructure market in the sector they operated; for example, ABB and Siemens investing in infrastructure close to their business model. Often, these companies would have their own financial services division, such as ABB financial services. This was the first wave of private capital into the industry, and later, also banks would enter the market, with Macquarie being one successful player. Founded in 1969 as a financial services company, they began investing in infrastructure in 1994, which has continued to grow and become one of the leading infrastructure managers globally. Macquarie was not the only bank that started with this investment strategy, and the banks were deal makers: good at the financial engineering part of the value creation; they acquired an asset, imposed a considerable leverage structure, and made the asset a cash cow by getting good financial deals, by the nature of their business.

With EQT in the front identifying a potential gap to fill, the Value-Add infrastructure investors entered the market with willingness to take higher risks while also demanding higher returns. Since then, the three different segments Core, Core+ and Value-Add, initially derived from the Real Estate segment, became distinct. In recent years, a fourth subsegment Growth/Opportunistic infrastructure, has been added.

Kairi concludes that Value-Add assets have similar characteristics of Core infrastructure investments but includes the art of balancing how much additional risk to take on to hit the return target. He also stresses that in many ways, Value-Add and traditional PE has more similarities than Value-Add and Core infrastructure. With the infrastructure investment market

maturing, the definition of infrastructure investments has evolved and today, fibre for example, is widely accepted as a Core infrastructure asset, when it previously belonged in the Value-Add space. In turn, Value-Add funds are increasingly acquiring cancer clinics that historically has been on the radar for general PE funds.

Applying Kairi's argument that ending operations of cancer clinics would harm the society, and that is does not make sense for another clinic to operate in the same neighbourhood, shed light to the essentiality of the asset as well as the monopolistic feature. These are further protected by the significant equipment investment required to introduce a new facility. Regarding the risks associated, investors has become comfortable with the stable underlying demand as it is unlikely that physicians will find a magic cure during the investment time and that it can be assumed that people will continue to get cancer.

4.3. EQT

EQT was established in 1994 by Conni Jonsson and Claes Dahlbäck, backed by the Swedish Wallenberg family, which has been the main influencer of the country's industrial, entrepreneurial, and banking sphere. The first fund was launched in 1995 and was targeting industrial companies in Sweden and its neighbouring countries. Over the coming years, EQT grew its presence in the Nordics, and after the founder Conni Jonsson expressed a will to grow EQT into new geographies and new asset classes, EQT established a comprehensive advisory network within various infrastructure sectors. In 2007, the decision of launching an infrastructure business was taken. Lennart Blecher, former member of EQT's advisory network, was mandated to take lead on the foundation of the new asset class. Lennart, who previously worked at ABB, reached out to another EQT employee with background at ABB, Stefan Glevén, to ask if he wanted to be on the infrastructure team. Glevén had joined EQT 2004 in the buyout fund and found the infrastructure sector to be particularly interesting whereby he onboarded the newly founded team. In 2007, the team worked with formulating the investment strategy and Private Placement Memorandum (PPM)[4]. The fundraising process started in the autumn of 2007, but to the infrastructure team's slight disappointment, the process was more time consuming than anticipated, and it was not until 2008 that EQT managed to raise the first fund of EUR 1.2 billion.

[4]A private placement memorandum is a disclosure document that is given to investors for their investment consideration

The strategy of the new asset class in the EQT sphere was to copy the strategy of the buyout fund. Glevén describes it as taking the EQT toolbox; working with add-on M&A, having the same corporate governance principles, only doing majority transactions, and apply this toolbox on infrastructure assets. The infrastructure team decided to focus on five sectors: Energy Transition, Digital, Transportation and Logistics, Social Infrastructure, and Services. This was a way for the team to work in a structured way, rather than exclusively focus on opportunities within these sectors; if an asset were available with the relevant infrastructure characteristics but outside the sectors, the team would still evaluate it. Furthermore, they established a few key characteristics that all assets needed to have, in order to be relevant, according to Glevén. Firstly, everything that EQT Infrastructure invests in, should be of essential importance and play a critical role to the society. This has not always been as clear as it may seems, Glevén describes: "EQT has been a pioneer in pushing the boundaries of what asset that can be described as critical to the society, but I still think this is true for most of the investments made, although we have been criticised when we have been pushing the boundary too far". Secondly, the company needs to have long and secured contracts and a well-protected business model, where monopolistic situations were highly appreciated. Thirdly, the company business model needs to have stable revenues and cash flows, which the above characteristics often lead to. In addition to these, EQT added a fourth key characteristic, being that the EQT team could contribute and add value to the company, in form of governance, operational and financial engineering, where they could work with their previously established toolbox. Glevén argues that EQT was one of the first infrastructure funds to make this explicit and emphasized that it differentiated them from other infrastructure investors.

The launch of the infrastructure fund proved to be an important step in establishing a multi-strategy investment firm, which soon was further broadened with a credit, real estate, and public value business line. Since 2019, EQT has been listed on Nasdaq Stockholm Stock Exchange and has offices in over 20 countries in the world. By 2022, EQT has launched 5 infrastructure funds, the largest launched in 2020 at EUR 15.7 billion. On 31 August 2022, EQT announced the target of raising EUR 20 billion in the sixth infrastructure fund. The investment range is EUR 500 million to EUR 1 billion, and they currently have 25 portfolio companies. The Value-Add infrastructure funds are very similar to the classical private equity funds in the EQT umbrella, with similar length of the fund (10 years plus 2 additional if needed) as well as similar fee structure.

Until 2022, the infrastructure team has solely focused on Value-Add or Core+ infrastructure investment. In March 2022, EQT announced the launch of a Core Infrastructure fund (EQT Active Core), investing in lower risk infrastructure assets. This fund will have a length of 25 years, resulting from the nature of the assets they will invest in.

4.4. Tampnet

Tampnet was first established in 2001, in the sales process of Enitel's bankruptcy estate's subsea fibre network division to Statoil. Initially, Tampnet derived most of its revenue from Statoil-operated fields but rapidly expanded its customer base. In 2009, Tampnet had revenues of NOK 90 million, where over 70% was derived from fields not operated by Statoil. By then, 39 fields and 61 offshore installations were connected to the Tampnet network. In 2010, Statoil divested Tampnet to HitecVision, a PE investor specialised in the European energy industry. HitecVision remained owners for only two years, before EQT acquired the company in 2012. Between 2012 and 2018, Tampnet grew by a CAGR of 23%, driven by both organic and inorganic growth, with top line of NOK 642 million and an EBITDA of NOK 447 million.

In 2018, Tampnet's business model was to offer high-capacity bandwidth to offshore oil and gas installations, such as platforms, rigs, and vessels. They sold the bandwidth and through subcontractors, they provided installation, monitoring, operation, and maintenance services. Tampnet is present in the North Sea and the Gulf of Mexico, where they operate the largest offshore high-capacity communication in the world.

Their full suite of connectivity solutions, from fibre to fibre-backhauled 4G connectivity and roaming services are provided across four end customers: Oil & Gas, Offshore wind, Maritime and Carrier. For the oil and gas companies, connectivity is offered to the fixed installations, as well as 4G connectivity from the nearby fibre-connected installations to the clients and the service providers. This connectivity is also offered to mobile rigs and vessels, operating within coverage from base stations on platforms or wind farms, and the offshore personnel can also access the roaming connectivity. Offshore wind farms, as well as maritime customers such as merchant fishery and other offshore vessels as well as offshore personnel, can also get access to Tampnet's connectivity and roaming services. Tampnet also offers ultra-low latency speed connection between major northern European cities to carriers.

The length of the contracts with the end customer are typically long and produces monthly, inflation adjusted fees to Tampnet. Further description of Tampnet's product offering can be found in the table below (EQT 2018).

Table 5 – Overview of Tampnet's product offering

Segments	Connectivity Solutions	Contract Structure	Contract Length	Selected Customers
Fixed installations	Primary premium connectivity (Fiber, LOS, 4G /LTE or APN) Advanced connectivity solutions	Fixed monthly fees Up-front CapEx typically covered by operator	~4 years	
Mobile Rigs & Vessels	Primary premium connectivity (Fiber, LOS, 4G /LTE or APN)	Fixed monthly fees CapEx for e.g base stations typically covered by Tampnet	~1 month - >1 year	
Oil & Gas / Maritime Roaming	4G / LTE through resellers	Contract with telecom companies	~2-3 years	
Offshore wind	4G / LTE to offshore wind operators and maritime vessels within coverage area	Installations contracts and operation contracts Tampnet covers CapEx for e.g. base stations	~1- >3 years	
Carrier	International data transfer	Through resellers and through direct contracts	~1-3 years	

EQT (2018)

4.5. The Development of Tampnet Through its Owners

4.5.1. Tampnet and Statoil

In September 2001, Enitel ASA, one of Norway's largest telecom companies announced that its main subsidiary was declaring bankruptcy after failing to attract new capital. Statoil (now Equinor) had an exclusive right to use their offshore fibre network in the North Sea and acquired the asset for a relatively low price. Per Helge Svensson, founder of IT Broker[5] was hired as a CEO in 2008, and together with two other managers they built what is today known as Tampnet.

Kairi said that the history of Tampnet is much like what people say about successful hotels: The recipe for a successful one is two previous bankruptcies. This was in many ways true:

[5] IT Broker was a company focused on these areas and was acquired by a major Norwegian IT company.

Enitel had invested a lot of money to build the fibre network, but soon realised that the costs were too big to recoup, and the first generation of the fibre business was shut down. Statoil on the other hand dodged the big upfront costs and benefitted from the already established network. However, there was no reason for them to operate it – especially as the other oil and gas companies recognised that they needed similar networks. During Statoil ownership, the company was relatively stagnant. When Svensson entered as CEO of Tampnet, his focus was to improve the strategy and to demonstrate Tampnet's great potential to the owners. However, being a subdivision of a corporate owner, with little overlap with the core oil and gas business, was not always easy. Svensson knew that Tampnet needed capital to support its growth ambition, but he competed for the same budget with other projects and assets under the Statoil umbrella. Therefore, the decision to spin-off the company from Statoil was taken in 2009. RBC Capital Markets was mandated to lead the sales process. For Statoil, as well as for the management team, it was of immense importance to get the right buyer. Statoil did not want the asset to end up in the hands of a competitor, and continued strategic cooperation had to be included in the sales agreement. RBC conducted a broad and structured process and the small Tampnet team held numerous management presentations. Eventually the PE firm HitecVision was interested and seemed to fit the requirements that the seller had on the buyer. HitecVision saw an opportunity to take on the risk of the underinvested asset, that had belonged to a strategic player. By transforming it into a professionalised company it was well suited for PE ownership. Tampnet was acquired in 2010 and as Svensson participated in the management incentive program, he was highly motivated to continue his journey with Tampnet.

4.5.2. Tampnet and HitecVision

In 2010, the company operated solely in the North Sea. Tampnet was the largest of three players with 50% market share and the competitors were not expected to attempt an aggressive market penetration. Additionally, the control of critical subsea fibre infrastructure hindered other service providers to offer such a resilient solution, therefore the leading position was perceived as stable. In terms of competing technologies, the satellites were the most utilised alternative to fibre cable and radio links. The advantage of satellites was the lower up-front capital requirements; however, operating cost were higher, and level of service quality was lower with slower and less reliable communication. Consequently, subsea fibre was increasingly becoming the communication system of choice for operators.

HitecVision is a PE company based in Oslo, Norway, and specializes in buyouts and growth stage investments in the oil and gas industry. The team focuses on developing growth companies to become major players in their respective fields. When they acquired Tampnet in 2010 from Statoil, their main goal was to develop the company in the North Sea and in selected international markets, and since Tampnet's largest customers was the oil and gas companies, the Tampnet investment seemed logical for HitecVision. Erik Borgen, who later led the sales process of Tampnet, says that the company was primarily viewed as an 'Integrated Operations' provider, without significant infrastructure characteristics, and was most likely acquired at a "mid-single" EBITDA multiple. During the HitecVision ownership, Tampnet identified two other fibre networks in the North Sea that were actionable targets, and they ended up acquiring one such network from TeliaSonera.

However, HitecVision soon realized that Tampnet might be a more complex telecommunication asset than they had anticipated; it required considerable CapEx investments and extensive industrial knowledge outside just the oil and gas market to operate efficiently. In 2012, the owners mandated Arctic Securities to evaluate options covering the financing needs. The team at Arctic Securities, led by Borgen, then explored the bond market. They prepared a pitch presenting a bond funding of 7x EBITDA with a coupon of 6-8%, given that they managed to reposition the company as an infrastructure investment. When the Artic team left the room, they had a strange feeling – they could not decide whether the meeting went well or not. A few hours later HitecVision called back ensuring that they really had got it right: Could Tampnet be positioned as an infrastructure investment? If that was so, the asset would be viewed as having lower risk, leading to a lower cost of capital and in turn, a higher valuation. Arctic Securities and Borgen were confident – with physical assets on the balance sheet, long-term contracts for an essential to society service, no relevant competitive technology, and an increasing demand for data within the oil and gas vertical – it was possible to reposition Tampnet. Besides, Borgen had been in contact with Daniel Perez, partner at EQT infrastructure, who indicated that they were highly interested in the asset. From then on, the Arctic team was hired to conduct a sales process – HitecVision would rather sell the full company at the valuations discussed than raising a bond.

Potential buyers included 3i, Macquarie, and EQT. The Value-Add Infrastructure fund of EQT quickly became the frontrunner thanks to its unique investment mandate, while Macquarie declined the offer early on given the lack of regulation in the industry. Furthermore, both

Borgen and Perez highlights that the established relationship between the two enabled a quick and smooth deal. Perez goes on by highlighting that the ease of the deal also was dependent on the shared fundamental trust established between the Swedes and Norwegians. From his perspective, having seen many international deals, the Nordic business culture opens for a view that a deal can benefit all engaged parties, both buyer and seller. In other words, there can be a win-win deal. In many other cultures, it is more common to assume that there are information asymmetries resulting in a zero-sum game where one party's win is another one's loss. In addition, Borgen admits that it was the first time in his career where the outcome significantly exceeded the expectations of a client – at the same time as EQT viewed the deal so attractive that they would likely have paid more.

4.5.3. Tampnet and EQT

Entry

From the buy side, the Tampnet deal was attractive given its infrastructure characteristics with its physical assets and the natural monopoly they had since it made no sense to construct another fibre cable in parallel with Tampnet's network. Furthermore, Tampnet's services stood for only a negligible part of the oil and gas companies' OpEx, but what was important for EQT was that the services were mission critical for continuous operations. In general, telecom accounts for less than 1% of OpEx according to Carl Sjölund, partner at EQT Infrastructure, protecting them from potential cost-cutting initiatives. In addition, fibre offered idiosyncratic risk suitable to the value-add strategy. The team had from the early days of the infrastructure fund evaluated fibre opportunities but struggled to get comfortable with the counterparty risk connected to 'B2C' operations that traditional fibre companies with focus on providing fibre to residential buildings were exposed to. Tampnet was unique with its stable cash flows from long-run contracts with large commercial players. Another risk that EQT lacked comfort on was the commercial risk associated with the ease for competitors to dig and place new fibre cables; Tampnet were well positioned to address this concern as it is a significantly higher investment to establish a fibre network below sea compared to onshore equivalents. At the same time, EQT saw potential to apply its value-add strategy with Tampnet. Though the infrastructure fund had not yet acquired a cable company, they had considerable experience within EQT from their buyout transactions of e.g., Com Hem and StjärnTV.

When Statoil initially decided to divest their investment in Tampnet in 2010, EQT infrastructure was invited to the process, and although they thought the company was relevant, they did not have enough resources at the time to execute on the deal. Back then, the team only consisted of four people who were more than occupied trying to close the Swedegas deal[6]. Glevén commented further that they usually liked buying assets from corporates, since there arises some risk with carving out an asset from a corporate; risks EQT believed they were in a good position to evaluate and manage with their operational model.

Once they heard the asset was about to be available for purchase again, they were quick to jump on the opportunity. Furthermore, the transaction quickly became a bilateral process between the two investors, since HitecVision was clear about their reservation-price, helping EQT to build a case with a business plan and required return that reached the NOK 1.5 billion acquisition price. In addition, EQT was collaborative, and could close the deal in a short timeframe, something that is appreciated by the seller, according to Perez.

One usual questioning of PE funds is the selling and acquiring between other firms. Given the PE proposition of optimizing for value creation, it could be questioned if there is additional value to derive from a secondary buyout. Daniel agrees to the criticism in theory; however, he also states that PE funds are often specialised in different areas and different owners might be more or less suitable to implement a change.

Further, Daniel highlights that the PE industry is much older than the infrastructure investment market. Consequently, the PE market is more sophisticated and in general infrastructure owners are less successful in deploying all opportunities before exiting.

Engineering

By 2012, the EQT team was still new, and in contrast to what is typical today, they did not engage consultancy firms to help craft a Full Potential Plan (FPP)[7]. Instead, the team flew over to Stavanger to sit down with management to create a prioritisation list. The operational engineering included three key objectives: i) continue to deliver high quality and up to date

[6] Swedgas was acquired by EQT in 2010. Swedegas was the sole owner of Sweden's gas transmission network consisting of 601 km of pipelines. By 2015 Swedegas transported more than 1bn Nm3 supplying natural gas to 33 municipal areas and industrial players (EQT, 2015)

[7] A Full Potential Plan lays out the required projects and activities for a portfolio company to reach the targeted returns. Upon acquisition the new owners initiate a project, often collaborating with external advisors, to set feasible goals with concrete action-points, followed by close monitoring policies. (BCG, 2019)

products, ii) diversify the offering by introducing related products and services iii) penetrating the market through contracting new customers and expand geographically.

EQT had identified growth opportunities which included an increased focus on integrated operations by customers. Demanded attributes included bandwidth capacity with high reliability to secure seamless communication between land and offshore stations. Integrated operations had already been adopted by leading oil and gas companies under the "field of the future" banner as it was identified to benefit from cost savings and operational efficiency. Tampnet was expected to experience increased demand given its superior service offering.

Furthermore, geographical expansion in the North Sea area was expected to benefit Tampnet both from expanding the bandwidth to a larger area, and from improving the connectivity of already connected areas due to additional routes for information transfer. To secure coverage of required CapEx, the projects were only planned to be submitted against a long-term contract to secure future revenues. Additionally, there were bolt-on acquisition opportunities that had the potential to increase revenues by 70% within the North Sea area.

Another growth opportunity was to expand Tampnet's service offering leveraging the technological development. In recent years, new technology products, such as Infotainment, Managed services and Wimax, could bring new revenue streams.

Lastly, Tampnet planned for international expansion and had already developed a plan on how to expand in the US Gulf of Mexico with first projected revenues in 2013. Furthermore, Brazil and Australia were identified as near-term opportunities in terms of new markets.

Tampnet operated in a duopoly at the time of the acquisition, with BP running its own fibre network in the same geographical area. Initially, EQT put a lot of effort into pursuing BP to sell Central North Sea Fibre Telecommunications Company (CNSFTC) to secure a monopoly in North Sea through an exclusive process. As the acquisition was succeeded, EQT and Tampnet was comfortable extending its product offering including transit and data traffic, as well as building 4G network on its oil platform. Tampnet had exclusive rights to set up 4G transmitter and transfer the traffic in the fibre. The strategy was initially questioned, and the team was questioned why they acquired an expensive 4G license. However, the team had a plan of setting up ~50 antennas in the North Sea, hence benefitting from the exclusive 4G transmitter rights.

Parallel with the securing of the Nordic operations the team explored new markets whereby the Gulf of Mexico was prioritized. Through M&A and further negotiations for exclusive operational rights with BP, who owned the network, they established a blueprint of their Nordic strategy in the Atlantic Sea.

The EQT team left no stone unturned by applying its toolbox, and Glevén and Sjölund agreed that the key to EQT's persistent delivery of successful M&A and growth strategies is its people. EQT are active owners operating through its boards and management and therefore it is critical to consistently evaluate the management team of both potential targets and current portfolio companies. The active ownership strategy has always been prevailing in PE, in infrastructure however, EQT was pioneers. Over the course of the years, Glevén has learned that infrastructure assets will not be 'turned-around' overnight; to initiate a change you must therefore start with the people.

From Tampnet and Svensson's point of view, the journey with EQT was smooth sailing and the company that Tampnet is today, was mainly built together with EQT. Svensson further elaborates that some of the most notable differences with EQT as an owner was their clear plan and strong execution. He adds that with their extensive network they were also pragmatic and fast; regardless of if there was a funding need or a bolt-on target they wanted, EQT had a contact to call. The acquisition of the BP fibre network showcased this: even if it took a while to negotiate the right terms with BP, by partnering with EQT, suddenly, they had access to the right person to speak with.

Exit

When EQT was preparing for the exit, the company was present in Norway, UK, Netherlands, Denmark, and US Gulf of Mexico operating in the Oil and Gas, Offshore Wind, Maritime, and Carrier segment. The company expected increased market penetration and planned for further geographical expansion. The total offshore communication infrastructure market was NOK 2.3 billion in 2017 and estimated to grow to NOK 4.2 billion by 2027, implying a CAGR of 6%.

In 2018, the team started to consider various next steps, while it was time to divest Tampnet after five years, the team believed that the company had a lot of untapped potential and further opportunities yet to be explored. An internal discussion regarding timing and if it would be

possible to prolong the ownership through a 'Fund-to-Fund' transaction[8]. However, Perez emphasised that the increased focus on energy transition and institutional efforts to limit oil and gas exposure was something they needed to take into consideration. Furthermore, the team believed that they had accomplished a de-risking of the company, which would likely resulting in a multiple expansion and therefore become too expensive for EQT to be able to acquire it again, and they decided to initiate a structured sales process.

4.5.4. Tampnet and 3i

Introduction

3i is a listed investment company employing several investment strategies globally. Their infrastructure fund has a similar underlying investment mandate to EQT, although Oscar Tylegård, Director at 3i, says that they probably have different approaches to reach their target returns. When evaluating investments, they focus more on specific asset characteristics than on specific industries. In addition, 3i's mandate is rather broad, as long as they identify operational value-add opportunities. Tylegård say that they spend equal amount of financial and governance engineering on most of their investments, which is likely similar to other value-add funds. However, Tylegård argues that what distinguishes 3i from other investors is their operational engineering. To leverage macro themes and megatrends is part of the strategy and enables them to generate value in many of their investments. Further, the 3i team put lots of emphasis in the people and culture of their portfolio companies, as it is those individuals who initiate the value creation on a day-to-day basis

In 2018, Tylegård and his team got wind of the potential sale of Tampnet, and they were well prepared. The team had looked at the opportunity already when EQT acquired the company in 2012 from HitecVision, although they missed out as they were outpaced by their peer. Since then, they have closely followed the development of Tampnet and when it was finally available on the market again, they had developed an edge by knowing the asset in detail.

Entry

[8] Selling the asset to a newer fund to be able to hold it for a longer period of time

By 2018, Tampnet's biggest division, Oil and Gas, had an expected market growth of 6% p.a. mainly driven by growing average revenue per customer offsetting the volume component's expected decline. The demand for bandwidth was expected to increase as well, with the shift towards digitalisation. The digitalisation demand in turn was driven by the increased focus on cost-reduction and optimisation following the falling oil prices in 2014. With improved communication being an enabler for the offshore industry to cut costs and improve efficiency, Tampnet's service offering remained mission critical[9].

The market associated to Tampnet's offshore maritime segment was expected to grow at 11% p.a. across all operating regions. The substantial growth was explained by the infancy of the market. By establishing new base stations in the North Sea, Tampnet could increase the number of mobile vessels included in its range, while the network in Gulf of Mexico already covered most of the vessel traffic. Similar to the oil and gas segment, a robust communication infrastructure provides ship owners with significant economic and environmental benefits[10]. In addition, the welfare of crew members was improved with enabled contact with friends and families at home. Lastly, regulations increasingly require position details and carbon dioxide reports.

The offshore wind market was expected to grow 14% p.a. as it had been transformed during the decade from a niche segment to a fundamental part of energy policies' attempt to reduce carbon emissions. The number of wind farms is the main driver of growth, as a significant part of Tampnet's revenue derived from the construction of the windfarms. The expected development for average revenue per user was in line with inflation due the long-term contract structures and the limited availability of options.

The carrier segment's market was projected to grow at a 7% p.a. where the Nordics was emerging as a data centre hub due its cold climate, renewable energy focus, favourable taxes, and political stability. The growth was assumed to be driven by the increased need for data security, cost advantages, mobile devices growth, media rich applications and roll out of new technologies. Given Tampnet's ideal location as the gateway to Nordics, its subsea fibre infrastructure was expected to grow in importance. The carrier market faced high competition

[9] Cost-cutting includes reducing offshore personnel by relying on video links to replace interactions and efficiency is benefited by the prolonged asset lifetime through predictive maintenance.
[10] Real-time weather-based route planning allows for fuel efficiency, while optimised logistics as well as remote monitoring and diagnostics aids cost savings.

causing prices to drop, nonetheless the market for data transfer was still expected to grow as the increase of bandwidth consumption offset decreasing unit prices.

The competitive landscape in 2018 included several providers but Tampnet had a competitive position as other players had limited track record of deploying, owning, and operating fibre infrastructure. Furthermore, Tampnet offered superior technology and planned for continuous expansion of coverage, thereby increasing attractiveness. The market outlook included entrance of new technologies, such as low earth orbit satellites representing an opportunity for Tampnet; however, technologies are not expected before 2025.

Transaction

In the final auction process of EQT's divestment of Tampnet there were approximately 15 potential buyers, all being financial sponsors as opposed to strategic buyers, but along the progression some of the expected buyers dropped out.

Tylegård presented the case to the investment committee and highlighted the strong fit with their investment strategy. Fibre assets suit well in their portfolio and Tampnet presented a unique positioning that offered great growth potential driven by future market tailwinds. Tylegård and the team recognised that the main customers of Tampnet, oil and gas companies, was lagging on the s-curve of digitalisation, relative to onshore operators. They believed that Tampnet was perfectly positioned to benefit from this, as oil and gas players is believed to pursue the same path as onshore peers. Furthermore, the 3i team believed they could professionalise Tampnet further, and identified other value creation drivers, including continued international expansion, launch of new products, and refinement of the existing businesses.

Simultaneously, due to the size of the investment, 3i decided to bring in a co-investor alongside them. The co-investor was ATP, Denmark's largest pension and social security provider and one of Europe's largest pension providers. Parham Abuhamzeh, Director in the Infrastructure team at EQT, emphasises the importance of selling to the right buyer: "We remain committed to making sure our portfolio companies find the right home and continue to thrive also in their next phase of ownership. Divested companies will remain part of our legacy and brand; the market will associate EQT with the development of such companies – also after we have exited. With that in mind, valuation is not the only consideration at exit, we will also need to find

comfort in that the new owner is ready to support the company's continued operations and ambitions"

For 3i, the Tampnet deal was enabled by the collaboration with ATP and it is not uncommon for PE investors to invite co-investors. Since the acquisition, Tampnet have continued their growth journey and Tylegård says that several bolt-on acquisitions have been successfully integrated. Moving forward, they will continue to develop the offering of Tampnet through digitalisation efforts and expansion of its customer base. If they succeed in transforming Tampnet from an oil and gas service business to an offshore connectivity provider, Oscar Tylegård believe that it will be a good investment. He believes that the biggest challenge is to professionalize the firm further, and to get the management team to tag along. Furthermore, he comments that the 3i team needs to closely consider the trade-offs of digitalisation initiatives. "You have to question; is this project making the asset more resilient, strengthening the infrastructure characteristics, or is it only attractive as it improves margins, although making the asset riskier". Tylegård continues to elaborate on the next owner of Tampnet; the positioning at the time of the exit will determine who will be interested. Tylegård believes that the asset will remain controlled by an infrastructure investor although he does not know if will be a value-add or core fund. Svensson, who recently left Tampnet, think it is more likely that a strategic owner who can add industrial knowledge and competences will be the next owner of Tampnet.

4.6. The future of Infrastructure

4.6.1. Trends and market tailwinds

Gordon Bajnai, partner in the infrastructure team at the capital allocation firm at Campbell Lutyens, emphasises that historically, the growing industry allocation in 2022 is not only derived from a growing sector, but also from the reallocation of capital. While many LPs have seen an increased allowed allocation of their capital to private markets, they are still constrained by the value of their whole portfolio and more specifically to the fluctuation of the value of their public investments. With the recent decline in the stock market, the LPs allocations towards the private market is expected to shrink in absolute numbers. However, Bajnai believes that infrastructure will be a relative winner given its inherent inflation protection. Investors will look to not dilute their money and going forward, more and more capital will be allocated to infrastructure, implying that there are room for EQT to continue to grow within infrastructure

and extract value. However, the question on what strategy to apply to extract the maximum value for investors remains.

Bajnai believes that the future will be formed by four megatrends with the ***decarbonisation*** being the most prominent. The energy transition attempts have great support from governments and regulations supporting investments, although there are lots of uncertainties remaining. The other megatrends mentioned by Bajnai are the continuous ***digitalisation*** where new technologies such as 5G requires investments, not only to roll out but also to construct new towers as the quantity required are higher for the new technologies. He also believes that we will experience a ***regionalisation***, with increased local sourcing that is logistically and environmentally beneficial. With a more complex socioeconomic environment the priority of trading with friendly countries will also rise. Lastly, Bajnai thinks that the ***demographical development*** of the world will create future opportunities as the population is aging in mature countries, demanding elderly care. For emerging countries, it is instead the educational demand that will be central going forward.

4.6.2. EQT

With the Tampnet deal in the books the EQT team sat down to reflect on the last decade and elaborated on what to do next. When EQT Infrastructure raised the first fund in 2008, it was a small niche segment but had now grown to become one of the largest asset classes on the market. What was required to sustain its edge? Was it time to enter the growth/opportunistic segment of infrastructure investments or stay prudent and launch an evergreen fund? Was it enough to niche themselves as an infrastructure player within the PE space, or was it time to niche themselves within their niche segment operating both core and value-add strategies?

EQT has since then spent a fair share of time and effort into establishing its strategy going forward in collaboration with management consultancies and placement agents. In the first fund, there was a lot of focus on energy and power utilities. In the following fund there was increased attention to transport and logistics before fibre became relevant in the third fund and fourth fund. The emergence of social infrastructure and renewables is related to the fifth fund. Naturally, everyone discussed what would come next. Perez also says that given the immatureness of infrastructure as an asset class for fund investments, it is important for investors to monitor the development to position themselves well. “The PE way of doing deals is well defined while the spectra of infrastructure strategies and models is wider; some funds aim for open ended structures while others deploy closed end funds. Further, the incentives are

less standardised than for PE limited partner agreements and hurdle rates, management fees and waterfall schemes can vary. Although the investment category is professionalising it is unclear in what direction it will end up."

Sjölund agrees with Bajnai's view when he elaborates on the future, mentioning energy transition as a key driver of infrastructure going forward. He also highlights that digital infrastructure is likely to move towards the core segment as fibre to the home and data centres becomes less risky. Other views on the outlook of infrastructure funds include Glevén's speculation of the software becoming infrastructure assets. He argues that it requires high investments to establish a software platform, and together with a large portion of subscription-based revenues, software companies do possess several infrastructure characteristics.

How far it is possible to push the boundaries of infrastructure remains to be seen, but EQT believes one of their edges historically has been their ability to go beyond the stagnated industry definitions and lead the way for new segments. This is a key component of EQT infrastructures success, but it has not always been uncommented. In 2011, EQT infrastructure acquired RTI, an edible oil management and distribution operator. RTI services over 22,000 national restaurant chains, independent operators, grocery delis, universities, hospitals, and other foodservice outlets. With its national fleet and 15 years of improving safety, efficiency, and sustainability through automated processes for delivery storage and disposal of fryer air, EQT identified several infrastructure characteristics. Another example is the Canadian laundry service company Wash. The company installs, owns, and maintains laundry machines in common-area laundry rooms, and once installed, wash collects digital and currency payments for the usage of the machines. Nonetheless, similar companies have not become part of the standard target for infrastructure funds.

Different people at EQT highlights that they believe the acquisition of Tampnet was innovative at its time, as it defined fibre as an infrastructure asset, rather than being a clear infrastructure asset when they entered. Consequently, the choice of strategy for EQT Infrastructure to undertake next is central, with several megatrends in the pipeline a more opportunistic approach might sound appealing. Nonetheless, as Kairi highlights, it will all depend on the investors and their demand. For example, a growth/opportunistic infrastructure fund would have more idiosyncratic and technology risk allowing GPs to enter new markets and segments. While traditional infrastructure investors value the lower risk, and therefore accepts the lower returns, they might be restrained to commit capital to this cause. Therefore, it is possible that

the future holds a new set of investors looking for another risk exposure matching the venture profile.

Consequently, the EQT team need not only consider the market development in its assessment of strategies, but they also need to predict on what the LPs will demand next. To remain a relevant player, a strategy focusing on lower risk and continuous yield could complement the infrastructure sector. Furthermore, Perez complements, that it is difficult to be global leader in the broad sector of, e.g., Transportation & Logistics, if they only addressed a small part of that market.

Lastly, if the team decided to pursue a new strategy through a new fund, they need to ensure that they are not cannibalising their current funds. However, Bajnai ensures that a competitive issue between a core fund and the current value-add fund is limited. First and foremost, it is not the same money given the difference in return and strategy. Secondly, by raising the funds at different points in time a potential issue of overlapping investors is discarded. The one concern that would need to be considered is a potential concentration limit, where investors are only allowed to allocate a specified amount to each investor to secure diversification.

4.6.3. The final decision

The thorough diligence was eventually compiled and the EQT team had reached a conclusion. In 2022, EQT launched EQT Active Core fund, a Core+ fund with a new strategy targeting companies that provide even more essential services to the society. The risk return proposition derives from contracted cash flows that are inflation protected and that can be projected with certainty for the next 10-15 years. The fund has a longer lifetime of 25 years, and this longer holding horizon of up to 25 years allows the team to pursue longer term value creation opportunities. With EQT being a major player at the Nordic infrastructure market the last decades the fund has grown to be a global investor. Leveraging on its refinement of an active ownership playbook, EQT Active Core Infrastructure is launched to expand EQT investment mandate further. With the PE infrastructure segment becoming increasingly mature the team at EQT continuous to elaborate on what strategy to take on next, but until then, the Value-Add team will focus all its effort to raise and deploy the €20billion targeted fund VI.

With Europe and much of the developed world facing the risk of recession at the end of 2022, Abuhamzeh has already observed a shift in day-to-day focus across both portfolio management and new investment activity. Although infrastructure assets have typically been regarded as

defensive investments during recessions, with stable cash flows and inflation protection; the team works actively to keep their portfolio companies prepared for future risks they may face. With regards to new investment opportunities, higher capital costs and market uncertainty is causing the transactional market to cool down. With diverging valuation expectations, buyers and sellers struggle to come to terms, making it more difficult to bring transactions to close.

5. Discussion

The characteristics of infrastructure investments

While the PE investment model, as it is known today, have become a sophisticated part of the financial system, private investment in infrastructure is still in its early years. The number of firms investing in infrastructure has grown quickly, and several funds have copied their investment model to also cover infrastructure assets. In addition, new fund managers have entered the market with a sole focus on infrastructure assets. What characterises and differentiates an infrastructure investment from a PE investment can therefore differ between different funds.

In this case study, the infrastructure investors studied, mainly EQT and 3i, have several differences to the traditional PE investors that they are compared with. The most salient difference is the risk and return profiles of the assets, which is something that the ultimate investors, the LPs, value. This view is confirmed by Bajnai, who states that the funds do not compete in terms of capital from the LPs as different LPs look for different risk and return profiles of the funds.

With different risk and return profiles, different infrastructure investors do not have the same scope of assets to invest in. EQT Infrastructure, who are a value-add investor, will have to deviate from the traditional infrastructure characteristics defined in the literature review, in order to reach their required returns, which are higher than a traditional Core infrastructure investor. Nonetheless, interviews with investment professionals at the firm show that they are still valuing these characteristics highly. Instead, the EQT team has constantly searched for new industries and segments that has not traditionally been defined as infrastructure, but possesses the main characteristics associated with infrastructure.

One example of EQT pushing the frontier of the definition of an infrastructure investment is the company RTI, the company providing edible oil management and distribution services. At first glance the infrastructure characteristics are not clear but recognising that although fries is not essential to society, the safety of chefs frying is. Consequently, oil management is regulated supporting the infrastructure argument. Another example is the Canadian laundry service company Wash. This also sheds lights on the geographical differences in infrastructure definitions; in the Nordic countries, investment like these would have a huge commercial risk

with most housing having accessibility to laundry facilities. In Canada however, washing is viewed as a highly essential service to the society due to the inherent cultural difference of how people wash their clothes, with very few families having access to washing-machines at home. Even though some might argue that these two investments never should have been part of the infrastructure fund, it serves as an interesting example of how EQT and other value-add infrastructure investors are constantly pushing the borders of the infrastructure sector, leading to the sector's continuous growth and development.

Furthermore, since private infrastructure investing is a relatively new asset class, and Value-Add and Growth/Opportunistic even more so, there seems to have been various ways for investors to make their returns. Since the traditional PE industry is mature and sophisticated you can argue that it is becoming more difficult to obtain superior returns. In contrast, infrastructure is not as invested in yet and it is possible that EQT and other Value-Add investors have been able to get an advantage of this immatureness, by being able to sell the asset on a higher multiple when exiting, since the asset naturally is less risky at that time. Doing this, it allows the fund to price the de-risking once divesting an asset, realising a multiple expansion. However, in the cases where EQT has succeeded, this has, according to EQT, required the team to apply substantial engineering and it is therefore not clear to what extent it is an arbitrage or a capability of the investment team. By having Value-Add investors continuously identifying new industries and trying to make risky assets less risky, the infrastructure market reshaped. One example of this is the fibre sector itself: when EQT Infrastructure found comfort in the riskiness of fibre and first invested in Tampnet, it was seen as a highly risky asset that no traditional infrastructure funds would look at. However, EQT worked on de-risking through governance and operational engineering, and as the fibre market developed and matured, and the fund could benefit from a multiple expansion. By 2022, fibre opportunities are often too expensive for EQT Value-Add and the asset class is widely considered a Core asset. Another example where EQT entered at a riskier stage is its acquisition of IP Only, where the traditional PE fund were the seller. Consequently, the asset had several PE features and limited infrastructure characteristics at entry, and the infrastructure fund transformed it into an infra-asset.

The hypothesis of being able to make superior returns since when the asset class is relatively undeveloped, has been seen in the VC industry in the 1990s. VC funds made superior returns compared to the public market, while in the 2000s, they did worse than the public market. If

this will be the case for infrastructure funds once the asset class has matured, only further research and time will tell.

Although several infrastructure funds strive to have the strategy of de-risking, the market is still not as sophisticated as the PE market. Consequently, the investors are often not as established, and it is common that there are several things left to improve once an asset is divested. As competition increases, investors are likely going to catch-up on PE players and master the full deployment of the "low hanging fruits". Nonetheless, one infrastructure owner will likely not be able to execute on all areas identified, hence the value-add investment model allows several infrastructure owners to add value before an asset end up in the hands of a low risk, long-term owner, such as a pension fund.

However, it is important to note that the risk EQT has taken upfront is extensive compared to Core infrastructure players, although they have managed de-risk during their holding period. Nonetheless, they have been rewarded for the excess risk through returns mainly realised through capital gains, rather than fixed income setups, which is in line with the Value-Add strategies. While this study has not been able to numerically analyse the returns at various risk levels, in previous research on financial valuations one should not be able to make arbitrary returns in a perfect world. Although EQT has been successful in its infrastructure strategy, one reason for this could be that the assets acquired by EQT have been riskier than what they initially targeted. In addition, EQT might be good at managing these risks through engineering and due to their reputation, it is possible that they could benefit from good entries and exits.

As EQT is a value-add investor, Tampnet should not fulfil all the infrastructure characteristics defined in the literary review. For the ***Key public service*** requirement, it is indirectly fulfilled since the oil and gas companies are of utmost importance for the functioning of our society. However, this has become more true in later years, with the increased digitalisation of offshore operators, also serving as a testimony of the de-risking of the asset. However, there was a commercial tied to the asset by the time since it was hard to tell how the future of communication networks would impact offshore operations. The characteristic ***Low elasticity of demand*** follow the same reasoning as above. In addition, as stated by Sjölund, the oil and gas companies' costs for this are a very small portion of the total cost basis, but still a very important component. However, as electrification is becoming more important, it is questionable how this will sustain in the future. The characteristic **(*Quasi-)monopoly situation with high barriers to enter the market*** is also partially fulfilled, since there is some competition

in the market although Tampnet is a dominant player. When EQT entered, BP was their biggest competitor, and it took considerable time to convince them to sell, which was a risk EQT took. However, the barriers to entry are big, and as Kairi stated, it is an asset that is not profitable to build parallel to Tampnet's network since you often cannot recoup the huge investment costs. This is especially true for under-water fibre cables, which is one reason that EQT was comfortable in the risk taken. When it comes to ***Regulation*** Tampnet operates in a highly regulated market, however still with room to make operational improvements that could be risky. The ***Long service life*** is fulfilled since it can be used for a long time. The contracts differ in length, from one year up to four years, which is not that long compared to other infrastructure assets. The contracts are often through a fixed inflation protected fee, which therefore fulfil the characteristic of ***Inflation protection.*** The asset also generates ***Regular, stable cash flows*** with same reasoning as for the low elasticity of demand. In conclusion, far from all characteristics are perfectly fulfilled in the case of Tampnet. Still, the asset is touching on all the characteristics and partially fulfilling them, which makes it an infrastructure asset by nature. Nonetheless, it is easy to identify the risk that EQT took acquiring Tampnet, even if it is lower than the risk taken by traditional PE firms.

The value of fit between investment funds and portfolio companies

What characterises a preferable owner of companies is widely debated, and the definition of a successful match is not clear. Should the evaluation be based solely on the ability to generate shareholder returns, or should other indicators such as the expected relationship between owner and management be considered? In this study, an owner´s ability to bring industry experience is mentioned several times as being an edge for infrastructure funds. The importance of external advisory networks is also highlighted, and the quality of those advisors and an owner's ability to attract them seems to be a result of the brand and historical performance of the investor. This is supported by Abuhamzeh's statement that EQT's divestments remain part of its legacy with an impact on reputation, underscoring the importance of ensuring the sustainable long-term performance of the company beyond EQT´s ownership horizon.

The evaluation of fund performance is in turn not only referred to returns, but also the fit and collaboration between owner and management. Such relationship is likely not directly linked to the focus of the investment firm, but rather related to the culture of the fund, which could vary a lot across different investment houses and regions. This could explain Svensson's tribute

to EQT as an owner, where he mentions the significant difference when 3i took over with headquarters in London.

In the study, the entry process is also referred to when examine the level of success. For buyers, it is desirable to have a bilateral process and thereby eliminate risks for bidding wars. In a non-competitive environment it could also be beneficial for the seller, as it requires less preparation than a structured process. If the potential buyer is also the preferred next owner, a bilateral process is an attractive solution. However, as the market matures, and the competition intensifies, sellers could profit from structured processes as there might be more than one desirable buyer and bidders will need to outbid each other, as in the sales process of Tampnet. This reasoning is confirmed by Perez who says that bilateral purchase processes are favoured, and the most common way of doing buy side deals in the early days of EQT infrastructure. Nonetheless, in recent years they have also entered many investments through structured processes where they instead need to emphasise their edge to become the buyer of choice. To conclude, it seems like the infrastructure market is on its way to catch up on the PE market and will over time become more sophisticated. This conclusion is further substantiated by the case of Tampnet, where EQT benefitted from the favourable terms in the entry and later maximized returns in the structured exit process, where several buyers were interested.

The development of infrastructure as an investment class

Merely 15 years has surpassed since EQT infrastructure launched their value-add fund. By then they were pioneers in its strategy of copy the toolbox from the traditional PE funds and apply it to infrastructure.

Since then, a lot has happened, but the development of infrastructure as an asset class begun much earlier. Previously, the only engineering that infrastructure investors had focused on was the financial, and with the EQT and other Value-Add funds willingness to focus extensively on governance and operational engineering, the willingness to increase the risk taken came, as they set their target returns higher than traditional infrastructure investors.

Lately, there has been a sophistication in the definition of infrastructure. Traditionally, the companies owning the physical assets has been on the radar for infrastructure sponsors, but today it also includes related services and goods provided. Whilst in theory they are not equal, they will in practice always have high demand and although there might be substitutes available, there are no other alternative that is preferable in terms of quality and price. This

sophistication partly explains the subdivision of the infrastructure market that has emerged. The segmentation reflects the range of risk and return profiles under the infrastructure umbrella, which can differ depending on where in the value chain a company operates.

Further, there is an ongoing refinement of procedures related to infrastructure funds, including limited partner agreements and investment mandates. In comparison to the well-tuned PE market, where compensation plans and fund lifetimes seldom deviates, infrastructure fund structures can deploy various investment horizon, and the reimbursement structure can vary.

Consequently, the relevant question is in what direction the development will go next. Looking at the case study, several people interviewed mentioned the continued attractiveness of infrastructure as an asset class, but there are different views on what will be included in the asset class going forward. Recurring answers stresses a larger focus on ESG, mainly connected to the energy transmission but also data security and social care. Although there are several speculative and innovative ideas mentioned by the interviewees, they are all affirming that the main attractiveness of infrastructure is its low-risk attributes. Therefore, is seems more reasonable for infrastructure funds to remain focused on mature segments of the market and sit back a few years while PE funds acquire and develop more growth-oriented infrastructure assets. Currently, there are sufficient opportunities available for infrastructure funds, however as the market develops the rivalry might increase and investors needs to consider more risky growth assets to stay competitive.

Beyond the competitive landscape investors also needs to consider the interest rate environment which has increased in significance in 2022. With interstates surpassing five percent, the risk premium of two to three percent above government papers might not appealing enough and core funds could lose their attractiveness.

To conclude, a balance between entering new markets and segments, taking on more risk, and profit from de-risking seems to be a good approach opening up for multiple expansion, which is in line with the historical prosperous performance of Value-Add funds.

6. Conclusion

6.1. Concluding Remarks

This thesis explores infrastructure as an asset class and its evolution over time, answering three research questions. i) *What characterises and differentiates an Infrastructure investment from a PE investment?* ii) *What characterises an Infrastructure Fund as an owner, compared to other strategic and financial owners?* and iii) *How has infrastructure funds developed over time and why?*

This is done through the lens of a case study, deep diving into EQT infrastructures investment in Tampnet. The primary source of data for the case study is interviews, investment research produced by EQT is supplementing the information. People interviewed had different roles in the Tampnet transaction to provide the thesis with several perspectives and assure independency. Interviews were conducted using a template of questions; however, all interviewees were encouraged to add information about the topic too. Please refer to appendix 7.1 for an overview of the interviewees of this case.

The method allows exploration of topics where data quality is lacking. The relatively new appearance of infrastructure funds data accessibility is limited, which makes the topic suitable for a case study. However, the technique prohibits authors to state causal relations and there is risk of biases. The disadvantages have however been limited through thorough preparation, and future research should be able to find correlations by compiling several studies, this included.

The case study walks the reader through EQT's background and the emergence of their infrastructure fund, highlighting differences in the strategy applied across their funds. There are many similarities across EQT's business segments, including the application of the EQT value creation toolbox and the accessibility to the well-established advisory network. The key differences discovered boils down to the different risk appetite and return requirements of the funds where EQT infrastructure are less committed to a specific return number but committed to matching the risk of an asset with an associated return. EQT infrastructure argues that they have been successful sustained an appropriate level of risk tolerance, balancing between PE companies and core assets.

Following, the case covers the history of Tampnet and their journey through the lens of its different owners. Beginning in 2010, when Tampnet was only a corporate orphan under

Statoil's control, the company was underinvested and operated by only three employees. This highlights the drawbacks of being owned by a strategic investor, as many projects contest for the same money and core businesses are prioritised. Through Svensson's re-structuring of Tampnet's operations as a separate division Statoil were able to divest the fibre asset. The asset was acquired by HitecVision, a fund focused on the energy industry. They categorised Tampnet as a niche service supplier to oil and gas companies, matching their usual target scope. Nonetheless, as the fibre market matured, and the demand increased Tampnet required significant CapEx investments and industry knowledge that HitecVision lacked. Simultaneously, EQT infrastructure had identified the early signs of Tampnet's infrastructure characteristics, and a bilateral deal was closed. The short ownership by HitecVision highlight the downside of operating a niche strategy as an investor, but more importantly it highlights the evolution of value-add infrastructure. When EQT initially acquired Tampnet it questioned by the market, but EQT infrastructure have always pushed the boundaries of the infrastructure definition. And today fibre is widely accepted as an infrastructure asset and rather acquired by core funds than value-add investors.

Continuing, the years with EQT shaped in many ways what Tampnet is today. ETQ brought in industry expertise and an advisory network that HitecVision might lacked, and Svensson described that the management team at Tampnet found the collaboration with EQT good. The investment in Tampnet is by many means a story that is worth studying to learn on several aspects. In this case a main take-away is ability to create value through de-risking assets, which seems to be what EQT succeeded in doing with Tampnet. By analysing and interpretating macro trends correctly the team has several times been able to acquire riskier assets, leverage the market matureness and apply its toolbox to divest the same company at higher valuations.

Lastly, the divestment to 3i and ATP is studied. Since the asset is still in their possession, it is not possible to evaluate the success of the investment. However, from Svensson's perspective, who has been part of the Tampnet journey for more than ten years, there are distinct differences even between the two infrastructure owners, one obvious being the cultural, arising from the change of geography of the owner.

The following discussion then covers the evolution of the characteristics of infrastructure over the decades that it has been a private asset class, looking at the key drivers that has led to this. Further, the section analyses how EQT and other early value-add funds have been able to monetize on assets that historically has been too risky for infrastructure funds. Through

financial, operational and governance engineering they de-risk the assets and profit from a capital gain derived from multiple expansion. The engineering in the case of Tampnet is then compared to the literature on engineering in value creation. Additionally, the discussion looks at different measures for successful collaboration, including the cultural and regional fit with management. Lastly, the development and future of infrastructure funds as an asset class is deliberated.

6.2. Further research

Building on the limitation of a case study, combined with the infrastructure landscape of PE yet being unexplored, further research is suggested to cover the same topics discussed in this study to get a more comprehensive picture. With several studies conducted in the same area, it could eventually be possible to draw more comprehensive conclusions and define an industry standard consensus on infrastructure definitions and standards. Suggested studies could include case coverage of the same questions but for other investment houses, but also coverage of EQT in another geographical area or point in time to explore how these questions varies globally and over time.

Furthermore, as presented in the literature review, there has been studies on the topic of returns of infrastructure investments. However, these studies have not yet covered the specific value-add segment, and thus this would be interesting to focus on. Adding to this, the future research could also investigate the de-risking strategy of EQT and other value-add infrastructure investors, and what specific engineering that has been the reason for the success of this strategy. If superior returns can be found for value-add investors, it would be interesting to study the matureness of the market and how it effects the returns.

7. Appendix

7.1. Interviews

Date	Interviewee	Professional role
2022-09-12	Timo Kairi	Partner, Bain & Company
2022-09-15	Erik Borgen	Investment Manager, Kistefos
2022-09-19	Stefan Glevén	Former partner and founder of EQT Infra
2022-09-20	Oscar Tylegård	Director, 3i
2022-09-21	Carl Sjölund	Partner, EQT
2022-09-21	Gordon Bajnai	Partner and global head of infrastructure, Campbell Lutyens
2022-09-22	Per-Helge Svensson	Previous CEO of Tampnet
2022-09-23	Daniel Perez	Partner, EQT
2022-09-23	Parham Abuhamzeh	Director, EQT

7.2. Biographies

Timo Kairi, Bain & Company

Timo joined Bain & Company in 1999 and is a partner and director with Bain & Company Nordic, based in Helsinki office. He is the leader of the firm's Nordic Private Equity practice and a core member of the Global Advanced Manufacturing & Services practise. Timo has worked extensively with EQT throughout the years and conducted Due Diligence on Tampnet before the EQT acquisition. Further, he has deep knowledge of the infrastructure market and the Private Equity funds entrance in it.

Erik Borgen, RoundFort Capital (former at HitecVision and Arctic Securities)

Erik Borgen is Partner at RoundFort Capital, an alternative asset management firm investing in short-dated credits in the maritime sector. Prior to joining RoundFort Capital, Erik was a partner at HitecVision. Between 2007 and 2013, Erik was a partner at Arctic Securities AS, where he was sell-side advisor to HitecVision in the sale of Tampnet. Before this, he spent 2 years at Morgan Stanley in the Investment Banking Division in the Energy and Utilities group, together with Daniel Perez.

Oscar Tylegård, 3i

Oscar is a director at 3i, and he joined in 2013. He is responsible for the origination, execution, and asset management of infrastructure investments He was part of the deal team of Tampnet in 2018. Previously, Oscar worked in the Investment Banking group of Macquarie Group.

Stefan Glevén, former partner and founder of EQT Infra

Stefan has a background as a senior partner at EQT, where he worked for 15 years, including as Head of Nordics and Head of North America at EQT Infrastructure. During his time at EQT, Stefan was involved in more than 30 acquisitions, was responsible for 20 portfolio companies and was co-founder of EQT Infrastructure. Prior to that, Stefan worked with M&A, corporate venture capital and financial services at ABB.

Carl Sjölund, EQT

Carl Sjölund joined EQT in 2012 and works within the infrastructure team. Prior to joining EQT Partners, Carl was at J.P. Morgan in London in the Mergers and Acquisitions team primarily focusing on telecom and transportation transactions. Carl has worked extensively with EQTs investment in Tampnet and was a member of the Board of Directors between 2012 to 2019.

Gordon Bajnai, Campbell Lutyens

Gordon Bajnai is a partner and global head of infrastructure at Campbell Lutyens, an independent private market advisor, providing fund placement, secondary advisory, and GP capital advisory services to leading fund managers and investors. Prior to joining Campbell Lutyens, Gordon was COO of Meridiam Infrastructure. Before this, he held roles as CEO of the Wallis Group, a major Hungarian diversified investment holding company, and as deputy CEO of CA IB Securities, a leading Hungarian investment bank. During his career, he also acted as Chairman of Budapest Airport and as advisor and director for Antin Infrastructure, Aegon Insurance and Raba plc. Gordon has also held several government posts in Hungary including serving as Prime Minister in 2009-2010.

Daniel Perez, EQT

Daniel joined EQT Partners in March 2008. Prior to joining EQT Partners, Daniel worked at Morgan Stanley’s London, Stockholm and New York offices in the Energy and Utilities corporate finance team, the Nordic corporate finance team and the North American M&A team.

Per Helge Svensson, Tampnet

Per Helge Svensson joined Tampnet in September 2008 with more than 20 years of experience in the oil & gas industry with a focus on Change Management and IT strategies. Prior to joining Tampnet Per Helge founded IT Broker, a company focussed on these areas, and was acquired by a major Norwegian IT company.

Parham Abuhamzeh, EQT

Parham joined EQT Partners in September 2017 and is a Director in the Infrastructure Team. Prior to joining EQT Partners, Parham worked as a Management Consultant at McKinsey & Co. in Stockholm, Sweden. Prior to McKinsey, Parham was part of the Infrastructure Finance team at Citigroup Inc. in London, UK.

7.3. Glossary

CAGR: Compounded Annual Growth Rate

CapEx: Capital Expenditures

FPP: Full Potential Plan

OpEx: Operating Expenses

PPM: Private Placement Memorandum

8. References

ANDONOV, Aleksandar; KRÄUSSL, Roman; RAUH, Joshua, Institutional Investors and "Infrastructure Investing, The Review of Financial Studies", Volume 34, Issue 8, August 2021, Pages 3880–3934

ASHTON, Philip; DOUSSARD, Marc; WEBER, Rachel (2012) "The Financial Engineering of Infrastructure Privatization", Journal of the American Planning Association, 78:3, 300-312,

AXELSON, Ulf, et al. "Borrow cheap, buy high? The determinants of leverage and pricing in buyouts". The Journal of Finance, 2013, 68.6: 2223-2267

BAYLISS, Kate; VAN WAYENBERGE, Elisa; O. L. BOWLES, Benjamin (2022): "Private equity and the regulation of financialised infrastructure: the case of Macquarie in Britain's water and energy networks", New Political Economy

BCG (2019). "How Full-Potential Plans Help PE-Owned Companies Outperform in Medtech"
https://www.bcg.com/industries/health-care/payers-providers-systems-services/full-potential-plans-help-pe-medtech-companies
(Accessed Nov 2022)

CENDROWSKI, H.; WADECKI, A.A. (2012). "Introduction to Private Equity. In Private Equity", Second Edition (eds H. Cendrowski, L.W. Petro, J.P. Martin and A.A. Wadecki).

DÖSKELAND, Trond; STRÖMBERG, Per. "Evaluating investments in unlisted equity for the Norwegian government pension fund global"

EQT (2015). "Infrastructure sells Swedegas to Enagas and Fluxys"
https://eqtgroup.com/news/2015/eqt-infrastructure-sells-swedegas-to-enagas-and-fluxys
(Accessed Nov 2022)

EQT. "EQT Value-Add Infrastructure"
https://eqtgroup.com/real-assets/eqt-value-add-infrastructure
(Accessed Sept 2022)

EQT. "Investment Research material"
(Accessed Sept 2022)

EQT. “History”
https://eqtgroup.com/about/history
(Accessed Sept 2022)

GERTNER, Robert; KAPLAN, Steven. “The value-maximizing board, working paper” University of Chicago, 1996

GUO, Shourun; HOTCHKISS S, Edith; SONG, Weihong, 2011, “Do buyouts (still) create value?” Journal of Finance 66(2), 479-517.

HARRIS, Robert S; KAPLAN, Steven N.; JENKINSON, Tim. “Private Equity Performance: What Do We Know?” NBER Working Paper Series (2012): 17874–. Web.

INDERST, Georg, 2010, “Infrastructure as an asset class”. EIB Papers

JENSEN, Michael C. “Takeovers: Their causes and consequences”. Journal of economic perspectives, 1988, 2.1: 21-48.

JENSEN, Michael C., 1989 “Active Investors, Lbos, and the Privatization of Bankruptcy.” Journal of Applied Corporate Finance, Vol. 2, No. 1, pp. 35-44,

JOCHIMSEN R (1966) „Theorie der Infrastruktur, Grundlagen der marktwirtschaftlichen Entwicklung“, J C B Mohr (Paul Siebeck), Tübingen

KAPLAN, Steven N.; STROMBERG, Per. ”Leveraged buyouts and private equity.” Journal of economic perspectives, 2009, 23.1: 121-46.

KOLLER, Tim, GOEDHART Marc H., and WESSELS, David. “Valuation : Measuring and Managing the Value of Companies”. Seventh edition. Hoboken, New Jersey: Wiley, 2020. Print.

McKinsey (2022) “McKinsey’s Private Markets Annual Review”
https://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/infrastructure-investing-will-never-be-the-same

McKinsey (2022) “Infrastructure investing will never be the same”
https://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/mckinseys-private-markets-annual-review

McKinsey, & Company Inc., et al. “Valuation : Measuring and Managing the Value of Companies”, John Wiley & Sons, Incorporated, 2020. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/hhss-ebooks/detail.action?docID=6207783.

MORGAN, Jamie; NASIR, Muhammad Ali (2021) “Financialised Private Equity Finance and the Debt Gamble: The Case of Toys R Us”, New Political Economy, 26:3, 455-471

O’BRIEN, P.; PIKE, A. (2017). Chapter 10: “The financialization and governance of infrastructure”. In Handbook on the Geographies of Money and Finance, Cheltenham, UK: Edward Elgar Publishing.

O’NEILL M., Phillip (2013), “The financialisation of infrastructure: the role of categorisation and property relations”, Cambridge Journal of Regions, Economy and Society, Volume 6, Issue 3, November 2013

Prequin (2020) “Global Infrastructure Report“ https://docs.preqin.com/samples/2020-Preqin-Global-Infrastructure-Report-Sample-Pages.pdf (Accessed Sept 2022)

SCHENKEL, Andrew; STRÖMBERG, Per 2017, “Capabilities and strategic fit in private equity: A clinical study,” workingpaper, Stockholm School of Economics.

STAUB-BISANG, Mirjam, et al. ”Infrastructure As an Asset Class: Investment Strategy, Sustainability, Project Finance and PPP”, John Wiley & Sons, Incorporated, 2016

YIN K., Robert (2014). “Case Study Research Design and Methods” (5th ed.). Thousand Oaks, CA: Sage.